

## Annex 1 (rev.) to Programme Director letter

### INFORMATION REQUIRED FOR PROJECT PROGRESS REPORTS

(All relevant projects should have submitted reports by 31 Jan 2004)

**Programme Name** : Environment and human Behaviour  
**Project Title** : Rapid Climate Change UK: Towards an Institutional Theory of  
Adaptation  
**Award No** : RES-221-25-0044  
**Award Holder(s)** : Dr M Pelling  
**Period of Report** : 09.05.2003 to 31.12.2003  
**Institution(s)** : University of Liverpool, Department of Geography  
**Total ESRC Award** : £40,842.68  
**Total co-funding of Award from outside ESRC (do not include HEFCE or University contributions):**  
£0

### Report

#### Aims and Methods of Research

The project has six main aims, each with associated methods:

1. To extend the theory of organizational adaptation by building a synthesis of literatures on the institutional economics of climate change and extreme events, the management theory of organisational adaptation to exogenous risk and the climate change and natural hazards literature on human adaptation to risk. Literature searches to be informed by the expert project team. This is the principal activity to have been undertaken within the period of this report.
2. To generate guidelines to map the institutional constraints on adaptation. This will be framed by the identification of organisational constraints and undertaken through workshops and individual interviews with key informants. Organisations will be selected from within the UK rural economy sector and represent stakeholders with national, regional and local responsibilities.
3. To identify stakeholder views on the appropriateness of theoretical and methodological tools. Undertaken as in aim 2.
4. To generate preliminary data on the adaptive capacity of the UK agriculture sector. The aim is not to provide a conclusive mapping but to provide an initial inductively generated review of the role of institutions in shaping risk amongst actors from within the sector. Data will come from workshops and interviews.
5. To identify future research questions in the management and interaction of organisations and in their relationship with the public policy, administration and culture in which they operate. Outputs will be generated from the methodologies outlined in aims 1 and 2.

#### Confirmation Statement

Core research is being conducted as anticipated in the initial contract. As agreed with the ESC the project did not receive funding for teaching assistance, which was initially planned to enable

involvement in the project by Dearing, Smith and Pelling. Despite this all three senior members of the research team have been involved as initially planned. The start date for the project was 9 May 2003 with an end date for 8 May 2004 this has allowed the recruitment of a suitable post-doc research assistant.

### **Highlights of the Research and Important Findings**

The first eight months of the project involved a review and initial synthesis of three literatures with the aim of moving towards a better integrated understanding of the way institutions operate to constrain adaptive capacity in organisations threatened by environmental risk and of flagging areas for future theoretical development. In this case rapid climate change (a cooling scenario for the UK) is the defined hazard. The literatures under review concerned adaptation to climate change, social capital and social learning.

Institutions are defined as the rules of the game (following the work of North) and include formal institutions enshrined in legislation, job descriptions or codes of practice and informal institutions rooted in cultural norms, attitudes and habits of behaviour. A tension lying within the theory on institutions is the extent to which they operate as structures constraining human action whilst simultaneously being the product of human agency. The balance between structure and agency in any one organisation or social setting is identified as being critical for determining the extent to which institutions enable space for adaptation and change without allowing disintegration of social units and failure to meet core objectives of the organisation. There is a fine line between stasis and inertia on the one hand brought about by an excess of structural control and chaos on the other caused by too much individual agency. Somewhere in the middle lies a theoretical space of creative interaction between structure and agency where adaptive capacity is likely to be most effectively fostered.

The discussion on structure and agency has a long tradition in social theory (see Giddens' structuration theory for example) and recent developments in work on social capital and social learning provide useful lenses through which to extend a more detailed discussion. The theoretical work undertaken in this project to date has identified a number of areas of theoretical overlap and a strong degree of epistemological compatibility that suggests opportunities for future theoretical development to inform organisational management and build adaptive capacity. As a pilot project the flagging of areas for future work is a key output.

The literatures on institutional economics, social capital and social learning are vast and contain diverse theoretical positionings. This said, there is a strong orientation in each towards a relational interpretation of power and it is this that provides a common epistemological ground. Power is seen as being contested or reinforced in every social interaction. A detailed theory of adaptation then must include a concern not only for organisational structure but also the spaces of interaction between actors that provide opportunities for the distortion, mis-understanding or even reinvention of received policy. Further investigation on the implications of a relational reading of power on adaptation theory and subsequent adaptation policy is worthwhile.

Social capital remains a contested concept despite its rapid take up by the policy community. The review of social capital theory undertaken in this project has identified a number of problematic areas for its use in adaptation theory and policy. To move towards a greater understanding of the interaction of crisis on social capital it is necessary to identify the limits of the concept. Some work identifies social capital with collective organisation, others include deeper cultural norms and habits of reciprocity. Ambiguity in meaning confounds methodological challenges that have made elusive the identification of comparative indicators for aggregate measures of social capital. Despite these caveats social capital theory provides a useful entry point for examining social relationships and communities of practice within and between organisations. The distinction between tight bonding relationships where ideas can be reproduced and bridging or linking relationships where new ideas can be

transferred between communities of practice is particularly useful, differences between cultural and collective action reading of social capital offer opportunities for building theory to link the cultural and political elements of adaptive capacity.

Social learning includes a focus on both the social contexts in which individuals can learn and the notion that social groups and organisations can learn as entities beyond the learning of constituent individuals. The interplay between individual and organisational learning is valuable for adaptation theory and worth future investigation. The literature on communities of practice has many connections with social capital theory in acknowledging the importance of imagined communities whose members share a common identity beyond formal designations of roles and responsibilities and in the use of a relational understanding of power. Communities of practice are places for learning through experience with boundary objects and actors providing connectivity between discrete communities. Work on the so-called shadow network of informal relationships that cross-cuts formal organisational structures provides another lens on the movement and modification of policy, ideas and information as it passes through an organisation or from one organisation or community of practice to another. The aim here is to make more theoretically visible informal institutions and again opportunities exist for extending theoretical understanding of institutions and adaptation.

#### **Changes to Original Award**

There were no changes to the award holder(s), research staff or institution since the award commenced) up to 31.12.03. In 1 January 2004 the principal investigator moves to King's College, University of London. With ESRC agreement project finance and management will move with him.

#### **Research Staff**

None

#### **Publications**

Pelling, M 'Social capital, hazards and adaptation strategies of the vulnerable'. Adger, W.N, Mace, M.J. and Huq, S. (Eds.) Climate Change Vulnerability, MIT Press (in press).

Pelling, M 'Social capital and the micropolitics of vulnerability'. Presentation for the Open Meeting of the Human Dimensions of Global Environmental Change Research Community, McGill University, Montreal, published as proceedings on <http://sedac.ciesin.columbia.edu/openmtg/docs/Pelling.pdf>

#### **Engagement with Potential Research Users**

The report covers an eight month period of theoretical work. As such, dissemination is not appropriate at this stage. However, conversations with a number of research users have been undertaken and proven useful in providing an informal touchstone for the appropriateness and timeliness of the research and for reviewing methods for more formal research-user involvement during the latter stages of the project, as originally designed. Engagement with research-users has taken place in two ways. First, in taking advantage of opportunities to meet with research users as they arise. For example in a Zuckerman Institute, UEA three day conference on Justice in Adaptation to Climate Change where the PI was invited to present a paper. This provided an opportunity to discuss project concepts and direction with a number of research users in particular with senior staff with responsibility for climate change adaptation in DEFRA and DFID but also with representatives of international civil society organisations involved in climate change negotiations. Second, in December initial conversations were held to recruit participants for the field-study stage of the research (January – February 2004). Conversations were held with members of DEFRA, the Welsh Assembly and local farmers networks in Wales and the aims and direction of the research project discussed.

The outcome of these various discussions has not been to change the core direction of research or its aims. There has however been some reflection on data collection methodology. The balance of

workshops and individual interviews has shifted towards a preference on the part of participants for workshops and this has subsequently been built into the planning for methods.

In January and February workshops will be held with the Welsh Assembly, DEFRA and with two networks of Welsh farmers. From these initial workshops individual follow up interviews will be undertaken. The aim of the workshops is to provide a two-way flow of information with the research group providing background on adaptation theory and climate change science and creating a space for participants to reflect on what rapid climate change might mean to them, how formal and informal institutions have operated in the past to shape adaptation and how they may be useful or a hindrance in the light of the low probability but high impact threat of rapid climate change.

### **Contribution to Programme**

The overall aim of the new opportunities Programme in the Environment and Human Behaviour (EHB) Programme is to draw on existing theory and data archives to point towards areas for further research within a possibly expanded future EHB. Within this larger aim this project responded to calls for work exploring human vulnerability and adaptation to rapid climate change in the UK and Northwest Europe. In its first eight months the project has contributed to both these goals. Where gaps in theory have been identified, the potential utility of the literatures reviewed here to respond have been examined. In the remaining four months of the project field data will be gathered to ground test theoretically derived findings. Two broad areas where further research is required are:

- The need for a greater understanding of the social properties of systems that enable or constrain adaptation.
- The need for a more refined understanding and more empirical evidence for the operation of informal social networks in influencing the behaviour of organisations and social learning in building adaptive capacity.

Understanding of social adaptation to climate change has been dominated by a focus on directed, material adaptations. These are the use and influence of social systems on observable physical changes or changes in behaviour responding directly to climate change. An example would be the mobilisation of family members to support an injured relative following a disaster event. This is important work and is a necessary first step in mapping the contours of adaptation. However this is a limited worldview. A deeper engagement identifies three additional spaces for interaction between social systems and adaptive capacity. First where social systems play a role in indirect adaptations that do not in themselves seek to reduce climate change risk but that build resilience to the background risk or life. An example here would be to invest in education as a long-term strategy for enhancing a household or families access to human, social and financial capital. The contrast is with those marginalized households where education is not invested in building circuits of risk and vulnerability. Second, where adaptations are directed at climate change but the aim is not to make material interventions but rather to change the institutional architecture that constrains further opportunities for material change. A strategy to build a more effective set of social contacts or build the width or depth of existing social contacts with a view to increasing potential social capital would count as an adaptive strategy for an individual or organisation. Finally, indirect action that responds to background stress would be the most removed space for social systems to influence adaptive capacity. An example would be involvement in collective or representative decision-making, such as voting in local elections or an organisation's discussion groups. The project has opened up these three additional arenas for the social aspects of adaptation and aims to provide initial empirical evidence from the second period of research.

Theory on organisational management points to a lack of understanding surrounding the behaviour and influence of informal social networks in organisational performance. This observation coincides

with a gap in the literature on adaptation to environmental risk and climate change. Informal social networks are most often associated with negatives such as corruption, with little theoretical or empirical work seeking to identify or examine their positive potential in adaptation. Given that adaptation to future stress and shock will require unanticipated action informal networks may prove to be an essential element in rapid and effective local self-organisation for adaptation. The degree to which changes tied to informal networks can be reproduced and transferred through social learning also requires further work. Having identified this research need deductively the second period of research aims at providing initial empirical evidence.

### **Detailed Progress**

#### *(i) brief résumé of the development of the research since the start of the award*

Following the recruitment of a project RA work has passed through a number of stages. An initial meeting to define key concepts such as adaptation, risk, institution, organisation, formal, was attended by the project team of four. The meeting unearthed particular fuzziness around the concept of institution, and its use in management science, systems science and social theory. Discussions lead to the production of an internal working paper on the conceptualisation of institutions for the purpose of this project. Initial work also produced a definition for rapid climate change as an ‘unexpected and counterintuitive shock’. The project focus on organisational and institutional behaviour means the physical parameters of rapid climate change are less important than the broad character of the pressure felt by decision-makers.

Scoping reviews of the literature were undertaken, in part to familiarise the project RA with the context of the study in adaptation literature and climate change science. An internal working paper on adaptation was produced. A four month period of in depth literature review work was then undertaken by the project RA (reviewing work on social learning) and the PI (working on social capital). Almost daily meetings between the RA and PI with regular input from other project team members have resulted in a close working relationship stimulating the exchange of ideas. Internal working papers on social learning and social capital as they might be used to inform theory on adaptation to rapid climate change have been written. Internal working papers have formed the basis of presentations made at:

- Conference on Justice in Adaptation to Climate Change, Zuckerman Institute for Connective Environmental Research, University of East Anglia, September 2003
- Open Meeting on Human Impacts of Climate Change, McGill University, Montreal, September 2003.
- Environment and Human Behaviour programme meetings at the PSI.
- Environment and Human Behaviour programme, rapid climate change projects joint meeting, University of Birmingham, August 2003.

In December contact was made with potential respondents for ground truthing of theoretical work. Participants were drawn from DEFRA, the Welsh Assembly and Welsh farmers associations.

#### *(ii) if this is not the first progress report, main developments since the last report*

This is the first report.

#### *(iii) any difficulties encountered e.g. in staffing, access, data analysis*

No difficulties encountered.

#### *(iv) changes introduced or envisaged in the research objectives or methodology*

Following conversations with potential research participants, data collection will rely more on workshop discussion than individual interviews. This will strengthen the participatory research approach that was initially envisioned as part of the methodology.

(v) *an estimate of how far the original timetable will be met*

Theory work is following the original timetable. Some problems in arranging workshops for January and February may result in a more draw-out data collection period than planned for in the original project timetable, but as of 31.12.04 project is on stream to be completed by 8 May 2004.