

**Workshop report**

**Project UKCC22**

**Adapting to the Differential Social Impacts of Climate Change in  
the UK**

**October 2008**



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**Dissemination status**



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## EXECUTIVE SUMMARY

According to the Stern Review on the 'Economic Impacts of Climate Change' which "*The impacts of climate change are not evenly distributed – the poorest countries and people will suffer earliest and most*" (Stern, 2006).

'Adapting to the differential social impacts of climate change' was the focus of a workshop, held on Tuesday 30<sup>th</sup> September 2008 in Birmingham as part of SNIFFER Project UKCC22, which aims to:

- To identify the social impacts in the UK which are forecast to increase under climate change projections;
- To identify the differential impacts, for example, based on exposure and sensitivity and the capacity to adapt;
- To identify adaptation measures that will need to consider these differential social impacts.

Presentations were given by:

- (i) Dr. Helen Chalmers, CAG Consultants, who summarised the findings of the literature review, which will be published in 2009 and examines the range of social impacts of climate change, who is likely to be most vulnerable, and the type of strategic adaptation actions that can be taken to address social vulnerability to climate change; and
- (ii) Kate Darch, Gloucestershire Rural Community Council, who explained the work of the Village Agents, who supported vulnerable people in Gloucestershire, during and after the flooding in the summer of 2007.

During the morning, delegates mapped existing action that is being taken, which will help address the social impacts of climate change, and build the resilience of those people who are most vulnerable to climate change. This will inform the social vulnerability adaptation framework within the final report.

This exercise also identified a number of gaps and priorities for further action and investigation. Five of these were explored in more detail, and will inform four case studies, which will provide more detailed insights into key issues, as well as practical illustrations of how vulnerability to the social impacts of climate change can be considered within adaptation policy and practice. The four case studies will focus on:

1. Identifying ways to build resilient communities through decision-making and empowerment
2. Identifying ways to overcome the conflicts, and maximise the synergies between adaptation and mitigation in relation to agriculture/the built environment
3. Identifying effective ways of communicating climate change to vulnerable people
4. Investigating current requirements on business, and the viability of SME business loans to require climate-proofing of business

The final report and the four case studies will be published during January 2009 and will be available at: [www.sniffer.org.uk](http://www.sniffer.org.uk)

## 1. INTRODUCTION

### 1.1 Background to the workshop

This document reports on the SNIFFER workshop, held on Tuesday 30<sup>th</sup> September 2008 in Birmingham to examine 'Adaptation to the differential social impacts of climate change'. The workshop was held to inform project UKCC22, which is part of SNIFFER's Environmental Regulation Programme.

The project was conceived, and is being funded and managed by SEPA, following the Stern Review on the 'Economic Impacts of Climate Change' which recognised that "*The impacts of climate change are not evenly distributed – the poorest countries and people will suffer earliest and most*" (Stern, 2006).

The project's hypothesis is that climate change will widen existing inequalities, globally and locally, unless social impacts are actively addressed across the range of adaptation measures.

The project aims:

- To identify the social impacts in the UK which are forecast to increase under climate change projections;
- To identify the differential impacts, for example, based on exposure and sensitivity and the capacity to adapt;
- To identify adaptation measures that will need to consider these differential social impacts.

This *Workshop* report summarises the findings of the workshop held in September 2008. It should be read alongside the other project (UKCC22) documents:

- (i) A *Literature Review*, which was undertaken to explore existing evidence of the differential social impacts of climate change. The findings of this review are published in a separate document *Differential Social Impacts of Climate Change: Literature Review* (CAG Consultants, 2009) and were presented to delegates at the workshop.
- (ii) Four *Case Studies* about issues perceived as gaps and areas for further exploration by workshop delegates, namely: community empowerment and capacity building; the synergies between adaptation and mitigation; effective communication of climate change; rural employment; and decision-making and accountability processes. These issues were explored in more detail by CAG Consultants through additional research and interviews.
- (iii) The *Final Report*, which summarises all the research findings, and presents a *Social Vulnerability to Climate Change Adaptation Framework*. The Framework builds on the case studies and identifies the types of policy, management and operational, and social resilience and adaptive capacity building measures that can be taken at a national/regional, local and community level to address the differential social impacts of climate change.

**Figure 1: Agenda for 'Adapting to the differential social impacts of climate change' workshop**

**ADAPTING TO THE DIFFERENTIAL SOCIAL IMPACTS OF CLIMATE CHANGE**

**Tuesday, 30<sup>th</sup> September 2008 from 10.30-16.00**

The Custard Factory, Birmingham, Gibb St, B9 4AA  
<http://www.custardfactoryspaces.com>

**Agenda**

- 10.30 Arrival, registration and refreshments
- 11.00 **Welcome and background to the project**  
Vanessa Kind, SNIFFER  
Rebecca Walker, Scottish Environmental Protection Agency (SEPA)
- 11.05 **The differential social impacts of climate change**  
Helen Chalmers, CAG Consultants
- 11.20 **Building the capacity of vulnerable people to adapt to climate change**  
Kate Darch, Gloucestershire Rural Community Council
- 11.40 **Mapping existing adaptation approaches and identifying gaps**
- 12.40 Plenary
- 13.00 Lunch
- 14.00 **Identifying opportunities for building adaptive capacity**
- 15.15 Plenary
- 15.50 Next steps
- 16.00 Close

## 2. HEADLINE FINDINGS FROM THE LITERATURE REVIEW

Dr. Helen Chalmers from CAG Consultants summarised the key findings from their literature review, which will be published alongside the main project report in early 2009.

### 2.1 Climate change in the UK

According to the UKCIP (UK Climate Impacts Partnership) climate change scenarios, produced in 2002, the UK is expected to experience:

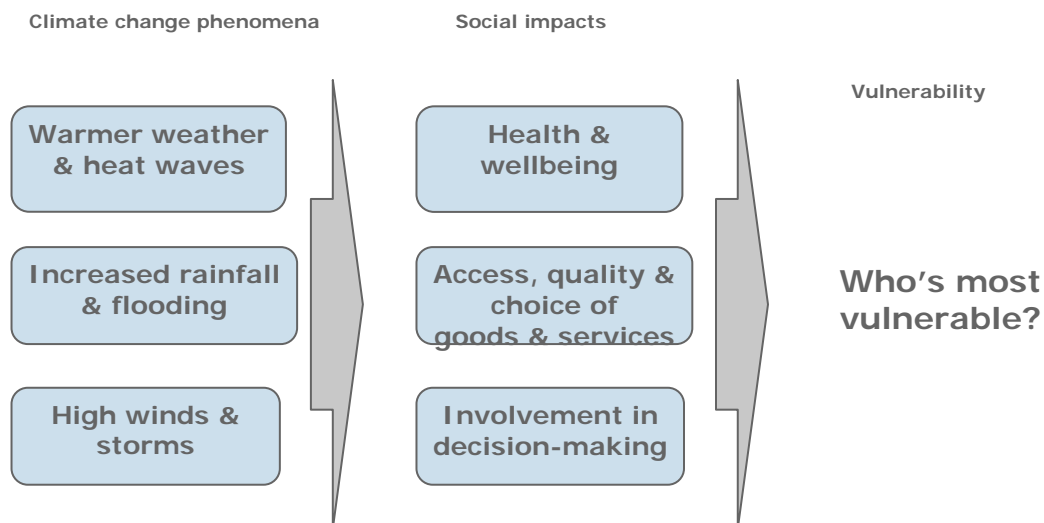
- The UK will get warmer temperatures - Global average temperatures have risen by 0.8°C since the late 19th century and are expected to increase by between 0.5 and 1°C by 2040
- Hotter and drier summers - with average temps due to rise by between 0.5 and 2°C by 2040, with up to 50% less precipitation in summer.
- Milder and wetter winters - warmer by between 0.5 and 1°C by 2040, with 30% more rain and a decrease in snowfall
- More extreme weather, such as heat waves, heavier winter precipitation and winter storms
- Sea levels will continue to rise - by as much as 80cm around the UK, with greater rises in south England than in western Scotland.

### 2.2 Social impacts of climate change

The literature review focused on the three main trends and extremes: warmer weather & heat waves, increased rainfall & flooding, and high winds & storms.

Social impacts defined using the International Association for Impact Assessment's definition and the Environment Agency's social appraisal criteria and themes (shown in figure 2).

**Figure 2: Framework for literature review**



Thirdly, the project has identified the factors that are likely to make people more vulnerable to the social impacts of climate change and has identified likely vulnerable groups.

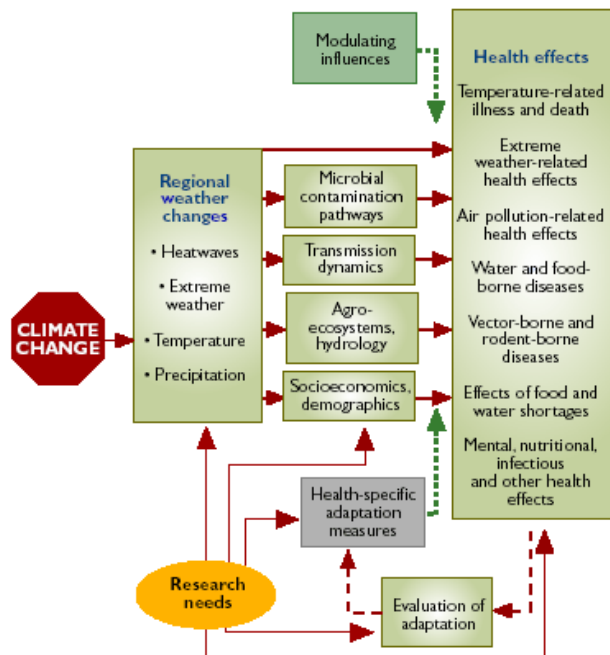
### 2.2.1 Physical health

The health impacts of climate change are well documented, with recent high profile reports such as the World Health Organisation’s report, the Department of Health’s literature review published earlier this year and Stern’s review, which included some discussion of health impacts.

This diagram (in figure 3) neatly summarises the range of direct effects on health, as well as providing a framework for explaining the indirect impacts on health e.g. through food and water access, as well as some of the feedback loops from wider environmental change which may affect human health.

Ultimately, climate change can cause deaths – for example flooding is estimated to have resulted in 6.8 deaths between 1990 and 2004. Heat stress claimed hundreds of lives during the 2003 heat wave and could cause up to 3,000 lives in SE England by 2012.

**Figure 3: Health effects of climate change (WHO, 2003)**



Health impacts include:

- Food and water borne disease and vector borne disease
- Respiratory problems – not just through air pollution in hot weather, but also through damp conditions following floods
- Skin related problems, including skin cancers

### 2.2.2 Mental health

The mental health impacts are often called ‘intangible impacts’, but can be very tangible to the people facing them. The Pitt review (2008) noted the traumatic effect on people, from the initial shock, to longer term distress manifesting itself through:

- depression and anxiety;
- exacerbated physical health problems;

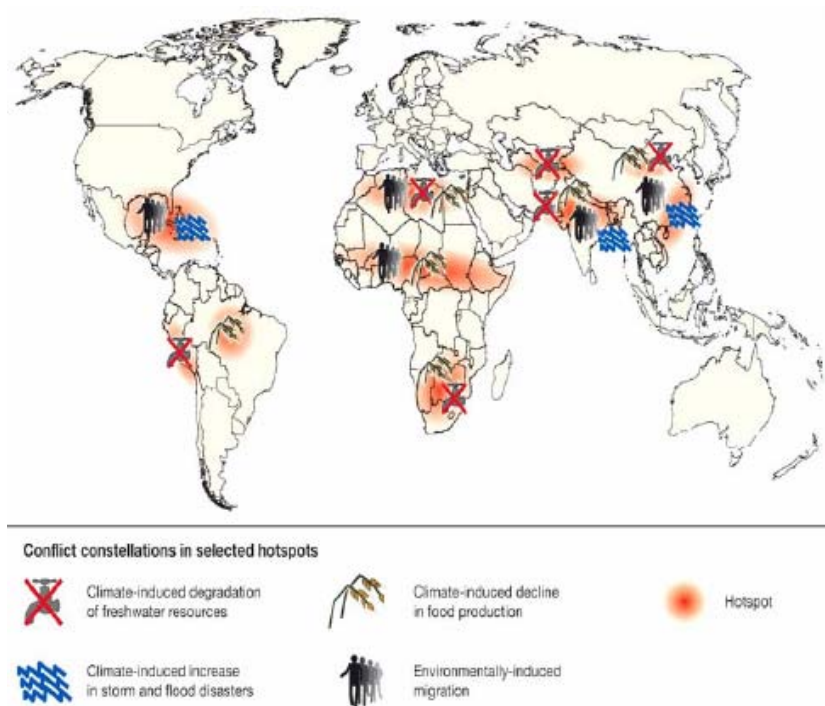
- relationship problems and marriage breakdown – a survey of 647 flood affected households reported 22% reported affects on relationships;
- sense of dislocation and loss of sense of place; and
- even suicide;
- but also fear of crime – for example, fear of people looting property and businesses during and after floods.

### 2.2.3 Safety and crime

Extreme weather, such as heat waves and flooding can cause social unrest and conflict. For example, the riots in Oldham in 2001 have been linked to warm night time temperatures; restricted access and shares of bottled water supplies caused some tension amongst communities during the flooding in Gloucestershire in 2007, and there are several examples of looting of abandoned properties following storm and flood damage.

However, the biggest impact on the UK is likely to come from migration due to climate-induced conflict. The IPCC 4th Assessment Report recognises that those people who are most at risk and vulnerable to climate change are those in sub-Saharan Africa and developing countries where rising sea levels, desertification and shrinking water supplies are expected to create 150 million environmental refugees by 2050. Civil unrest and international instability will also affect food and other commodity trade to the UK, see figure 4.

**Figure 4: Climate change-induced conflict**



#### **2.2.4 Access to, quality and choice of goods and services**

Climate change will also affect access to, and quality of natural resources and basic human rights in the UK.

- Declines in rainfall will reduce river flows, yields and ground water resources, putting additional pressure on water supplies.
- While we may be looking forward to more wine growing and fruit production in the UK, our food supplies are likely to be considerably affected by projected decreases in crop yields in the tropics and sub-tropics – for example, crop yields in SSA and parts of Asia are projected to decrease by up to 20% by 2020 under medium-range climate change scenarios.
- The integrity of our homes, other buildings and critical infrastructure needed for quality of life is threatened. 2 million properties are at risk from flooding in England and Wales, and nearly 100,000 homes and businesses are at risk in Scotland. Higher temperatures can cause damp, while high wind speeds can damage homes.
- Shifting to a low carbon economy may create thousands of jobs, but climate change will affect people's safety at work and access to education and training. E.g. 107,000 pupil days were lost across central and northern England during the summer floods in 2007.
- The example of Walham switching station in Gloucestershire highlighted the vulnerability of our energy supplies.
- Changes in climate and extreme weather conditions will also affect built and natural recreation and tourism amenities, as well as our natural environment.

#### **2.2.5 Poverty, inequalities and participation**

The poor, largely in the developed world, will be most affected by environmental change, but also in the UK. Research by the Environment Agency and SNIFFER has shown that deprivation is often linked with aspects of poor environmental quality such as flood risk and existing poor air quality.

Climate change will exacerbate existing poverty and inequalities between the rich and poor – as the rich are able to buy their way out of trouble, those living in poverty, with low income and resources are tested by extreme weather. The elderly, children and women are particularly vulnerable because of poor health, low immunity and their roles in the family.

Those who are most affected are more likely to be excluded from decision-making, and have less capacity to be involved.

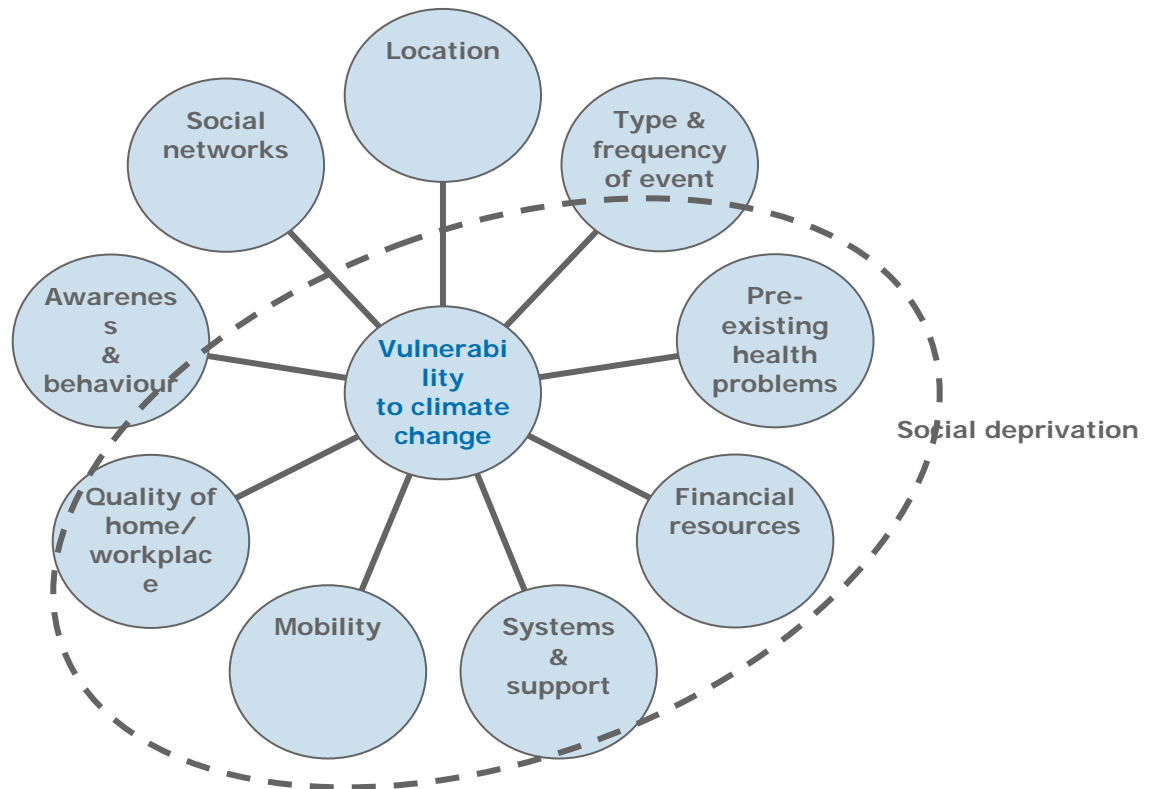
### **2.3 Vulnerability**

The people who are likely to be most vulnerable to climate change are those people:

- living in places at risk;
- who are socially deprived (poor health, income, housing, mobility); and who are

- disempowered by lack of awareness, adaptive capacity, support and services, and involvement in decision-making.

**Figure 5: Factors affecting vulnerability to climate change**



- **Location:** High temperatures are more likely to affect southern England and south Wales. All regions are likely to get wetter winters, but those living in floodplains and coastal areas will be particularly at risk from flooding, while winter depressions and storms are likely to increase, particularly in southern England.
- **Type & frequency:** Flooding will affect people differently to heat, and the type of flood, its speeds, timing, duration and other factors will affect the effects of a flood.
- **Health:** People who are already ill are likely to be particularly sensitive, particularly those with heart and lung-disease, cardiovascular and respiratory problems, cerebrovascular conditions, diabetes and severe mental illness.
- **Finance:** Money can often buy you out of risk, risk resistance (e.g. flood protection measures), or insurance against the risk. The ABI estimate that 35% of people in very low income households do not have any insurance, and 44% only have contents insurance.
- **Access to services and social networks:** can significantly protect your health, as well as providing wider support through friends, family and neighbours.

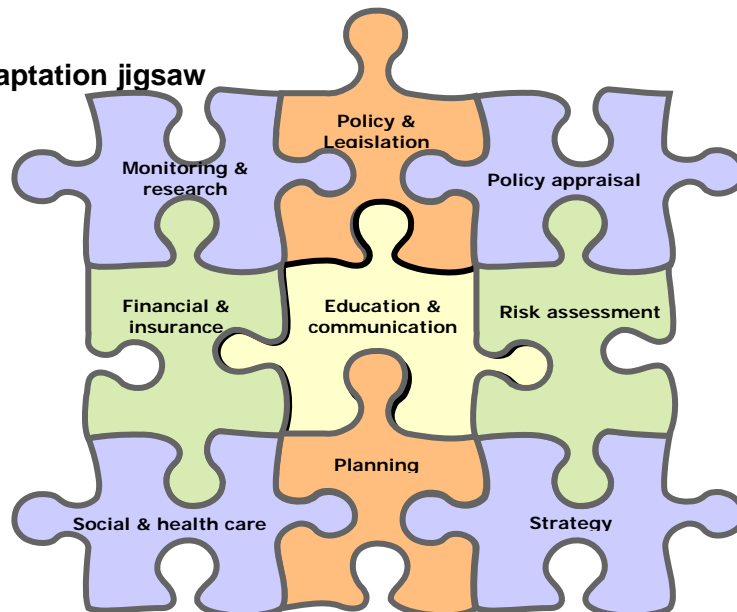
- **Access to personal or public transport:** can help you reach safety, but also put you at risk.

Many of these factors are considered aspects of social deprivation.

## 2.4 Adaptive responses

- **Policy:** International, EU and UK policy is starting to recognise social impacts and their differentiation. E.g. England, Scotland and Wales' draft adaptation frameworks' recognise social vulnerability and social justice issues, but offer little in terms of specific responses.
- **Policy appraisal tools:** such as SA, SEA, SIA, HIA and EqIA offer tools to identify social impacts and vulnerable groups. The Adapting to Climate Change Programme will be working with the Better Regulation Executive to see how they consider the effects of climate change.
- **Risk assessment:** provides another useful framework. The UK Government will carry out a national risk assessment and will expect public bodies to undertake their own. Local Climate Impact Profiles are being piloted by local authorities in England, Scotland and Northern Ireland as a way of mapping the impacts of historical weather events to inform future service planning.
- **Organisational strategies:** and business continuity plans should provide a framework for identifying social impacts on staff, customers, stakeholders, suppliers and communities.
- **Planning:** and local government provides a raft of mechanisms for ensuring local plans identify and address social impacts.
- **Social and health care:** provides both preventative, resilience building and aftercare.
- **Financial mechanisms and the role of insurance:** were highlighted in both Stern's and the Pitt Review – as ways of compensating for, or spreading the risks.

Figure 6: Pieces of the adaptation jigsaw



Copies of the slides will be available at [www.sniffer.org.uk](http://www.sniffer.org.uk)

### **3. SUPPORTING VULNERABLE PEOPLE IN GLOUCESTERSHIRE**

#### **3.1 Village Agents**

Kate Darch from Gloucestershire Rural Community Council summarised the experience of the Village Agents Project.

A Village Agent is a person recruited locally to bridge the gap between community and statutory/voluntary organisations by:

- acting as facilitators in the provision of high quality information to older people
- promoting access to services
- carrying out a series of practical checks
- identifying unmet need within communities
- working around 10 hours per week (although this is often up to 25 hours)

#### **3.2 Gloucestershire Floods 2007**

- July 2007 witnessed the worst flooding to hit Gloucestershire in living memory with many communities in Tewkesbury and the Cotswold districts completely cut off.
- Many areas flooded that had never been affected before, people became vulnerable who were not previously thought to be at risk.
- Emergency Services stretched to absolute capacity.
- After the initial rain had stopped, thousands of homes including Cheltenham, Gloucester and rural areas alike were left without running water for almost two weeks and many initially without power.

#### **3.3 After the floods**

- Mental and emotional impact is still apparent. Village agents in a position to identify those in need and to signpost to relevant agency.
- Identifying funding opportunities. In a position to be able to identify those who would qualify for funding and grants, local authority, Warm and Well, charitable organisations to prepare for future emergencies and to improve quality of life and peace of mind.
- Flood Guide - Emergency guide produced by Glos County Council to inform people of what to do, includes other information on general preparation for any emergency.
- Communication and Consultations improved.
- Village Agents consolidated their position as integral parts of the community when they helped to identify the elderly and the vulnerable within affected parishes

#### **3.4 Into the future**

Village Agents are involved with:

- Raising Awareness with vulnerable people – Training, distributing leaflets, attendance at county events.
- Raising awareness with the key players in the community – Parish Councils, older peoples groups, church groups.
- Consolidating as a link between local authorities and the rural communities.
- Linking with the Environment Agency and the local Primary Care Trust on initiatives such as ‘flood boxes’

#### **4. MAPPING SOCIALLY RESPONSIVE ADAPTATION ACTIONS**

##### **4.1 The task**

Delegates were divided into five groups, comprising of a mixture of representatives from different types of organisations (e.g. regulators, policy makers, health and local authorities), and from different UK countries (i.e. England, Northern Ireland, Scotland and Wales).

Each group was supported by a facilitator and tasked with:

- (i) introducing each delegate
- (ii) mapping existing actions
- (iii) identifying the linkages between existing actions
- (iv) identifying gaps and what else is needed
- (v) identifying at least 2 priorities for the future.

Existing adaptation actions which may help to build the resilience of those people likely to be most vulnerable to climate change, identified through the group sessions are detailed in the accompanying *Annex* report.

##### **4.2 Priorities for the future**

The five groups identified a range of priorities for the future. Similar priorities were grouped by the facilitators and subsumed into nine topics:

- Community empowerment and capacity building
- The synergies between adaptation and mitigation
- Communication and awareness
- Mapping decision-making and accountability processes which affect links between socio-economic and climate change drivers
- Working with business
- Transport
- Rural employment
- Planning
- Tourism

Delegates were then asked to choose a topic which they would like to discuss in more detail during the afternoon session.

## 5. IDENTIFYING OPPORTUNITIES FOR BUILDING ADAPTATIVE CAPACITY OF PEOPLE VULNERABLE TO CLIMATE CHANGE

### 5.1 The task

Delegates chose to discuss five of the nine topics, and were tasked with identifying the:

1. **Drivers** for developing the adaptation action e.g. What problem is it trying to address? What existing action is being taken, if any? What problems/gaps are there with existing action?
2. **Benefits**: Who would be the primary beneficiaries of this project?
3. **Opportunities**: What opportunities does it present? What other policy/local priorities will it help deliver? What are the connections with existing actions and priorities? What opportunities are there for collaboration?
4. **Learning**: How can we learn from the experience of others?
5. **Action**: What needs to happen to take this idea forward?
6. **Engagement**: Who should be involved?
7. **Resources**: What would be needed to develop this idea further? Which organisations/group members could help develop this further? What could CAG feasibly do to develop this further within 3 consultant days?
8. **Impact**: What impact would it have?
9. **Risks**: what are the risks of undertaking this work?
10. **Evaluation**: How would we know if it has worked?

The record of the discussions in each group are detailed within the *Annex*.

## 6. NEXT STEPS

### 6.1 Case studies

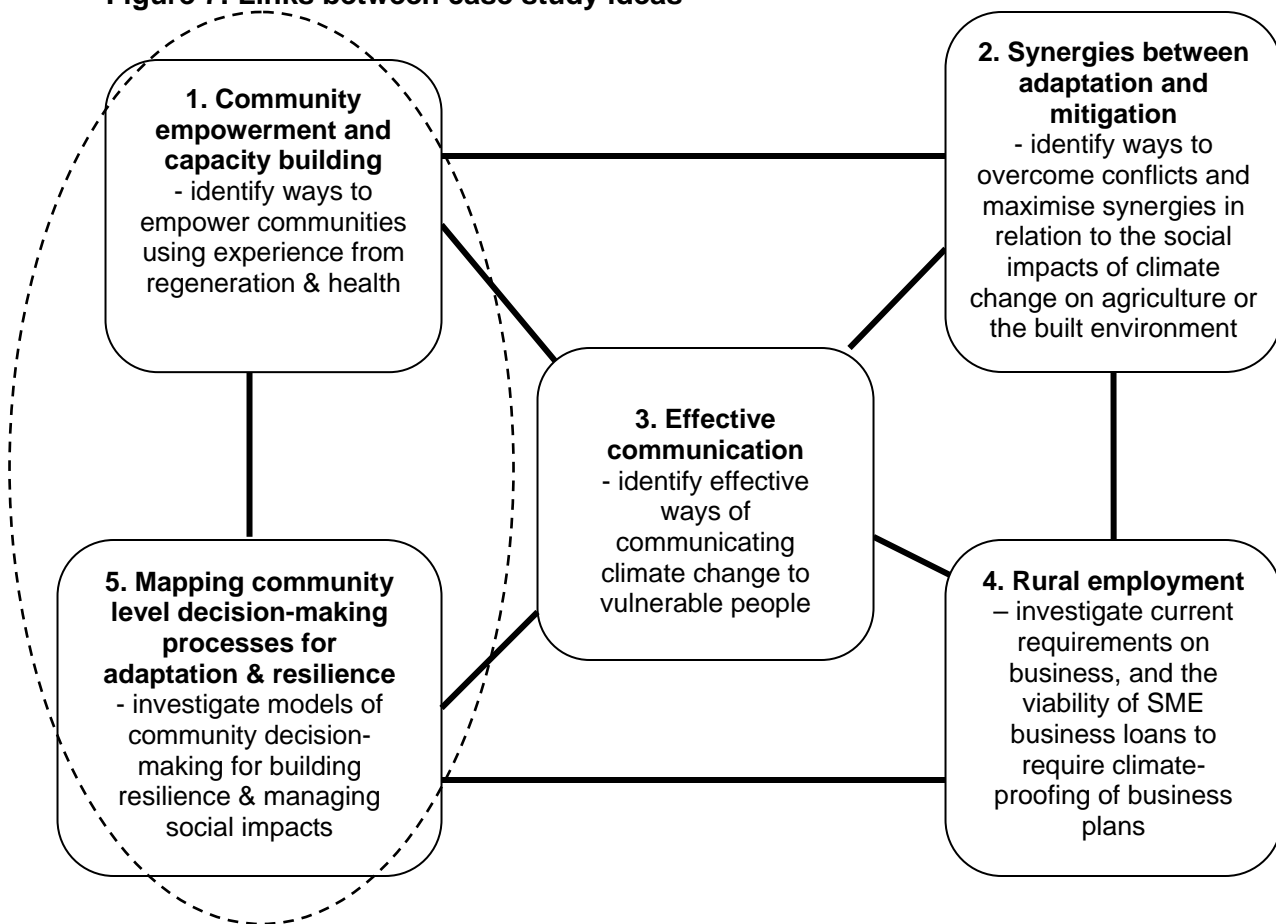
During October and November 2008, CAG Consultants will undertake four case studies to explore in more detail, how the differential social impacts of climate change could be considered within adaptation responses.

These case studies are intended to provide useful insights and practical illustrations to help those reading the final report, to understand what actions they, and their organisations, could take and how. Three consultant days have been allocated for each case study (to be undertaken between 13<sup>th</sup> October and completed by 7<sup>th</sup> November 2008). Two consultant days have been allocated to enable Rachel Crozier to support each case study with 0.5 days support for each.

The focus of these four case studies has been informed by the outputs of the workshop, and suggestions by the delegates, with the final decision being made by the project steering group.

There are clear links between the proposals from each of the five groups, see figure 7.

**Figure 7: Links between case study ideas**



In particular, there are strong links between case studies 1 and 5, with both looking at ways of empowering communities to become more resilient to the social impacts of climate change through decision-making (case study 5) and wider methods of engaging with vulnerable people (case study 1) at a community level. We therefore suggest merging these two case study ideas.

**(new) Case study 1: Building resilient communities through decision-making and empowerment**

CAG would investigate ways of working with communities that are vulnerable to climate change, for example through community-level decision-making, engagement and community empowerment by exploring:

- (i) ways of empowering vulnerable communities and building their adaptive capacity through community-level decision-making
- (ii) ..building on existing examples of community empowerment and community-level decision making from other sectors e.g. regeneration and health
- (iii) existing experience of building adaptive capacity amongst communities vulnerable to climate change, looking at one example, e.g. around coastal flooding.

This would involve some web-based research, together with short phone discussions or interviews with key people involved in community level decision-making for climate change adaptation.

There are also clear links between case studies 1 and 5 and 3 – with communication forming part of the ways to engage with, and build the resilience of people vulnerable to climate change. However we think there is merit on focusing on communication as a separate case study.

## **6.2 Report and publication**

Each case study be written up as a separate short report (maximum 4 pages), to be included within the appendices of the final report. In addition, we will create a short summary (maximum half A4 page) which will be integrated and linked to the main text within the final report.

The final products from this project are

- (i) a stand alone *Literature Review*;
- (ii) this *Workshop Report* and accompanying *Annex* and presentation slides
- (iii) four *Case Studies*;
- (iv) a *Final Report* – identifying the differential social impacts of climate change in the UK, and how these impacts will need to be considered by adaptation measures;

The final documents will be published and launched in early 2009.