
REPORT

SOCIALLY JUST ADAPTATION TO CLIMATE CHANGE

Rachel Brisley, Jean Welstead, Richard Hindle and Jouni Paavola

An exploration of how far social justice is considered in local adaptations to climate change impacts across the UK.

The study was undertaken just as the UK Government increased its commitment to the adaptation agenda – at the same time as public-sector funding cuts reduced the scope and scale of climate change activities at the local level. Its findings are relevant for all bodies operating at this level whose climate change adaptation activities impact on vulnerable communities.

The study provides a wealth of insights into how social justice can be incorporated into adaptation planning. It was informed by:

- a literature review of the theoretical concepts of social justice and climate change adaptation;
- a survey of local authorities' climate change adaptation plans; and
- case studies of the Highlands, Islington and York to investigate how social justice is taken into account in local adaptation planning and implementation.

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EXECUTIVE SUMMARY

This study was undertaken as part of the Joseph Rowntree Foundation's wider research programme on Climate Change and Social Justice. It explores existing approaches to local adaptation and how these take account of social justice issues. The study focuses on planning and decision-making for adaptation measures at local authority level, in relation to heatwaves, flooding and coastal impacts. The recommendations are directed towards decision-makers and practitioners, to support the future development of just local responses to climate change.

Our approach in summary

To provide a context for the study, a broad review was undertaken of social justice in relation to adaptation, including local adaptation strategies and theory and practice from both social justice and climate change research. A survey of local authorities was used to assess progress on socially just adaptation. Three case studies were then conducted in the Scottish Highlands, the London borough of Islington, and York, to further investigate the degree to which climate-change adaptation practice takes social justice implications into account. Finally, a broader review was carried out of adaptation practice elsewhere, including the use of adaptation tools; recommendations were made to help decision-makers and practitioners plan and implement just adaptation responses.

What is socially just adaptation to climate change?

The study draws on Defra's definition of adaptation as meaning 'changing our behaviour to respond to both the projected and current impacts of climate change' and the UK Climate Impact Programme (UKCIP)'s categorisation of adaptation responses and decisions into:

- building adaptive capacity – creating the information, supportive social structures and governance as a foundation for delivering action
- delivering adaptation actions – actions that either help to reduce vulnerability to climate risks or exploit opportunities

The study argues that ensuring social justice in adaptation responses requires, first, an understanding of which groups are most vulnerable to climate-change impacts and, second, adaptation to ensure that their needs are met. Other research undertaken through the JRF Climate Change and Social

Justice programme, specifically the report by Lindley, *et al.* (2011), provides useful contexts and advice for identifying vulnerable groups through its social vulnerability and climate-change hazard mapping.

As Paavola (2011) explains, social issues related to adaptation are diverse and contextually specific and encompass both procedural justice (empowering communities to be involved in decision-making by overcoming a lack of social capital and institutional barriers) and distributive justice (the distribution of income, assets and opportunity, in particular where climate change impacts fall, and the benefits and costs of adaptive actions). Distributive and procedural justices are not independent of each other. If a group is not recognised and cannot participate in planning and decision-making regarding adaptation, its interests are unlikely to inform and be served by adaptation plans and decisions. Being disadvantaged in distributive terms can also create obstacles for recognition and for participating in adaptation planning and decisions. In this way, adaptation plans and decisions can aggravate inequality rather than reduce it.

Following the review of social justice and adaptation theory, eight principles were identified which provide a framework for just adaptation:

Just adaptation principles, as identified by the study team

- taking into account current and future climate change impacts
- understanding the different factors that contribute to vulnerability
- identifying the distribution of the vulnerable groups likely to be affected and recognising that vulnerability is dynamic and changes over time
- involving the communities most likely to be affected in developing and delivering plans and activities related to adaptation, and supporting community resilience longer term
- assessing the potential adverse implications of climate change for vulnerable groups and identifying targeted adaptation activities to address vulnerability
- developing responses which build adaptive capacity, support adaptation actions and consider both physical infrastructure and service delivery
- being aware of the trade-offs that can arise in striving to achieve socially just adaptation and minimising the negative impacts for vulnerable communities as far as possible
- considering and assessing all adaptation options to ensure that the most beneficial are taken forward (the UKCIP Adaptation Wizard identifies a range of options from doing nothing, through low-regrets to no-regrets and win-win)

Policy context for just adaptation

The UK is at the forefront of climate science and is the first country in the world to have built a risk-based approach into climate change legislation. The impetus for action to address climate change impacts in the UK came from the *Stern Review* (2006), which argues that adaptation measures are crucial for addressing unavoidable climate change impacts. The Climate Change Act 2008 has since been introduced, putting in place a process for assessing and managing the risks and opportunities associated with climate change in the UK. The first *UK Climate Change Risk Assessment* (CCRA) has recently been published (Defra, 2012), with the National Adaptation Programme due to be published in 2013. Other key policies include the introduction of adaptation frameworks and plans in Scotland and Wales, the Localism Act (2011) and

the *National Planning Policy Framework* (DCLG, 2012). Most UK and national policies make reference to the social justice implications of climate change and climate change adaptation, but these are generally focused on spatial vulnerability, such as that of vulnerable communities living in flood-risk areas, and the health impacts of hotter weather, particularly for older people. They do not, for the most part, consider wider aspects of social vulnerability, such as social isolation and a lack of social networks, or other aspects of social justice, including the extent to which communities are involved in taking the adaptation decisions that affect them.

Key responsible organisations for climate change adaptation are identified as Defra, the Devolved Administrations, the Environment Agency (plus the Northern Irish and Scottish equivalents and the emerging single environment body in Wales) and the NHS. Local authorities (LAs) have a key role to play, but action at this level is not solely their responsibility; it is important that housing and health organisations, as well as the emergency services and voluntary and community-sector organisations, contribute to just adaptation.

Local authority adaptation planning review

A key element of the research involved reviewing LA adaptation plans and the current state of adaptation planning in LAs based on the National Indicator (NI) 188 (Planning to Adapt to Climate Change) data, undertaken in spring 2011, and then comparing these with other research undertaken at the time in both the UK and the US and a more recent survey concerning the impact of localism on local commitments to climate change (October 2011).

The findings revealed a range and variety of plans in terms of content, detail and progress, but only very few in the Devolved Administrations. Social justice was not evident as a priority in adaptation planning and was definitely not an embedded characteristic. A recent survey of LAs suggested that addressing climate change remains a priority for just 35 per cent of all LAs in England (Green Alliance, 2011); it is likely that the proportion committed to just adaptation is much lower. Specific opportunities were identified for optimising adaptation, such as an increased focus on localism, local nature partnerships (LNPs), neighbourhood planning and funding mechanisms such as the Community Infrastructure Levy.

Just adaptation in practice

The case studies undertaken in the Highlands, Islington and York were used to gain greater insight into how climate change adaptation planning and implementation is taking social justice into account. All three LAs and other local bodies take their climate change responsibilities seriously and are keen to promote, plan for and implement just adaptation. Building adaptive capacity is well underway and already evident in corporate plans and strategies. However, this tends to be led by climate change/sustainability departments; there is less evidence that just adaptation is built into the plans and strategies of other council departments such as social services, other health, housing and social care bodies, or voluntary and community-sector bodies. All three LAs are working towards embedding adaptation across services, but only Highland Council has taken the step of integrating just adaptation into council decision-making processes. Public-sector funding cuts have impacted on the priority given to adaptation, particularly in Islington where resources for adaptation have been reduced. Across all three areas, there was little evidence of

planning for longer term future climate change impacts or building community resilience; the emphasis was on responding to immediate severe weather effects through emergency planning.

A key finding from the case-study research was the importance of targeted responses in addressing the needs of vulnerable communities. Trusted service delivery and advocacy organisations (both public sector and voluntary/community sector) are considered best placed to engage, inform and educate vulnerable groups. However, voluntary and community-sector groups are not regularly involved in local adaptation planning and there is still a need to build their appreciation of climate change as an issue. It is important that vulnerable communities and their representative bodies are involved in planning actions to achieve ownership, to ensure the agenda is taken seriously and procedural justice is facilitated. The community-planning pilot in Gairloch and Loch Ewe, Highland, provides a good example of this in action.

A wider review of case studies of climate change adaptation commissioned and reported by other bodies, such as UKCIP, revealed the following findings:

- A variety of adaptation approaches are evident across the UK. Ensuring such approaches take full account of and address social justice implications is crucial and can best be achieved through a mixture both of top-down strategies and plans taking into account social justice issues, and of bottom-up activities being adopted through a community-centred approach.
- While it is possible to draw together key principles that can provide a framework for just adaptation planning and implementation, it is clear that there are no blueprint solutions. Just adaptation is context-specific: tailored solutions should be developed appropriate to the particular climate change impacts and the community needs and opportunities that characterise specific localities.
- Multiple agencies have a role in just adaptation planning and implementation at the LA level, and there is a need for clarity of roles and responsibilities and collaborative working to maximise efficiency, avoid duplication and ensure clarity, particularly in communicating with the public and vulnerable communities.

In comparing practice with theory, it was evident that social justice is more embedded in some areas of working than others. Future climate change impact planning is evident through mechanisms such as Local Climate Impact Profiles and there is a reasonable understanding and identification of vulnerability, although practical action tends to be focused towards those who are spatially vulnerable or vulnerable for health reasons. Community involvement is most evident in Highland through the pilot approach to community adaptation planning: most responses tend to focus on building adaptive capacity rather than action, although there are some good examples of practical activity. Overall, there is limited awareness of trade-offs and the distribution of costs and benefits and how these can impact on vulnerable communities. A consideration of options has been built into adaptation planning, but this has not focused on outcomes for vulnerable communities.

Conclusions

Just adaptation is a complex concept and one which will take time to embed into policy and practice at all levels. Adaptation is not as straightforward to plan or deliver as mitigation: there are no specific metrics associated with climate change adaptation or targets to aim towards, and it cannot be seen to have

been achieved; it is a continuous, iterative process. Ensuring that adaptation is just in both distributive and procedural terms further adds to the complexity. Within this context, it is not surprising that the views around social vulnerability identified through research in other areas of JRF's Climate Change and Social Justice programme, such as Lindley, *et al.* (2011), are not yet embedded into mainstream adaptation planning and implementation.

Within the UK Government and the Devolved Administrations, climate change adaptation has risen up the agenda, but this is not reflected (in general) at a local level due to public funding cuts and a focus on immediate priorities. The roles and responsibilities of LAs and other local bodies should be clarified when the National Adaptation Programme is developed in 2013. This programme has the potential to specify the role that social justice concerns should play in adaptation planning and implementation. National priorities for just adaptation can only be achieved through local action. Given the constraints created by public funding cuts, more work needs to be done nationally and locally to share good practice and encourage commitment and action. Using the language of community risk and resilience, and potential immediate and longer term cost savings rather than long-term climate change impacts, should help ensure that this agenda resonates with LAs and other bodies operating at the local level.

Just adaptation is largely seen as the responsibility of climate change and sustainability departments within both LAs and bodies such as the Environment Agency that have legislative responsibilities. However, to truly embed social justice considerations into adaptation planning, it is important that organisations working with vulnerable groups, such as older people, children, people with health problems and those who may struggle to adapt to climate change or who live in high-risk buildings and locations, ensure that just adaptation is built into their risk and resilience planning. It is equally important that, as far as possible, service users are involved in the development of plans, policies and practices.

Just adaptation is an emerging concept and practice currently lags behind theory. Opportunities should be identified and maximised to increase the profile of climate change adaptation among LAs and other local actors, and to ensure that any adaptation is socially just. LNPs, through focusing on health and wellbeing, localism and neighbourhood planning, moving public health directors into LAs, and potentially funding opportunities such as the Community Infrastructure Levy, provide such opportunities. There are some excellent examples of just adaptation across the UK, but these are not yet mainstream or taken forward in all areas. As such, information sharing and knowledge transfer is crucial to understanding good practice and demonstrating what can be achieved, potentially through a virtual central point, such as the Knowledge Hub or LinkedIn. LAs could pursue collaboration with others through the Local Government Group (LGG), Climate Local and other avenues to ensure that they can make optimal use of the resources available by disseminating best practice to avoid 'reinventing the wheel' and enable learning from experience.

1 INTRODUCTION AND CONTEXT

This study is an integral part of the Joseph Rowntree Foundation (JRF)'s wider research programme concerning Climate Change and Social Justice.

Aims, approach and management of the study

Study aims

The specific aims were to:

- explore existing approaches to local adaptation and how these take account of social justice issues
- support the future development of just local responses to climate change by making recommendations for strategic decision-making on policy and practice interventions for practitioners working both in climate change and in other fields

The study focuses on planning and decision-making with regard to adaptation measures at local authority (LA) level. The intended audience for this report is local practitioners ranging from local authorities to health bodies, housing organisations, police and fire services, and voluntary and community-sector service providers. It should also inform the development of policy guidance at the level of the UK Government and the Devolved Administrations plus key relevant bodies such as the Environment Agency.

The study focuses on just adaptation responses to three types of climate change impact: heat waves, flooding and coastal impacts.

The approach in summary

The approach to the study consisted of three main stages:

- a review of policy guidance, social justice theory in relation to adaptation, and local adaptation strategies, plans and activities (January–May 2011)
- research in case-study areas to further investigate just adaptation in practice and to identify suitable approaches and tools (June–October 2011)

- the development of initial recommendations for practical guidance to help decision-makers consider social justice issues in adaptation (November–December 2011). JRF intends to produce a separate guide for practitioners at a later date

The review of UK policy guidance was updated in March 2012, following the publication of two particularly relevant documents: the *Climate Change Risk Assessment* (Defra, January 2012) and the *National Planning Policy Framework* (DCLG, March 2012).

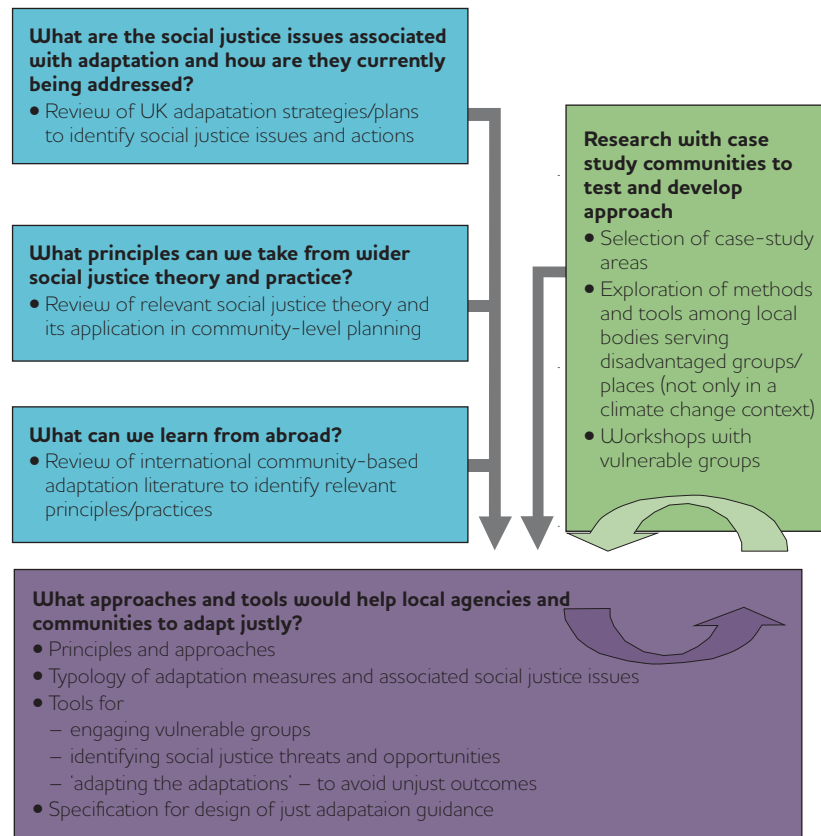
Project Advisory Group

A Project Advisory Group (PAG) was set up to support and oversee the study in May 2011. This comprised representatives from the City of York Council, the Department for Communities and Local Government (DCLG), Defra, the Environment Agency, Hampshire Council, the Scottish Government, the UK Climate Impacts Programme (UKCIP), University of Manchester, and Action with Communities in Rural England. The group had an advisory role, but was not responsible for endorsing the final report and the views contained within this report cannot be taken as representative of the views of PAG members.

Overall approach

The overall approach and the main inputs as agreed at the start of the study are set out in Figure 1.

Figure 1: The lines of enquiry and overall approach



Source: SQW, 2011

2 SOCIAL JUSTICE AND CLIMATE CHANGE ADAPTATION

This chapter provides an investigation of the concepts surrounding socially just climate change adaptation, drawing on relevant literature, including other studies within the JRF Change and Social Justice programme.

Within this chapter, we discuss the following concepts:

- climate change adaptation
- social vulnerability
- distributive and procedural justice
- delivering just adaptation

Climate change adaptation

The study draws on UKCIP's definition of climate change adaptation, which informs current thinking on adaptation strategy within the UK and at local authority level (see the box below). According to Defra, 'adaptation means changing our behaviour to respond to both the projected and current impacts of climate change'.

UKCIP typology of adaptation

Adaptation responses and decisions can be categorised as measures and strategies that contribute to either:

- **building adaptive capacity** – creating the information (researching, collecting and monitoring data, raising awareness) and establishing the supportive social structures (organisational development, working in partnership) and supportive governance (regulations, legislations, guidance) that are needed as a foundation for delivering adaptation actions

or:

- **delivering adaptation actions** – actions that help either to reduce vulnerability to climate risks or to exploit opportunities. These can include:
 - accepting the impacts and bearing the losses that result from these risks (e.g. by managing retreat as a result of sea-level rise)
 - offsetting losses by sharing or spreading the risks or the losses themselves (e.g. through insurance)
 - avoiding or reducing exposure to climate risks (e.g. by building new flood defences or changing location or activity)
 - exploiting new opportunities (e.g. by engaging in a new activity, or changing practices to take advantage of changing climatic conditions)

To foster just adaptation to climate change, it is necessary to understand who is vulnerable and at risk of climate change impacts.

Social vulnerability

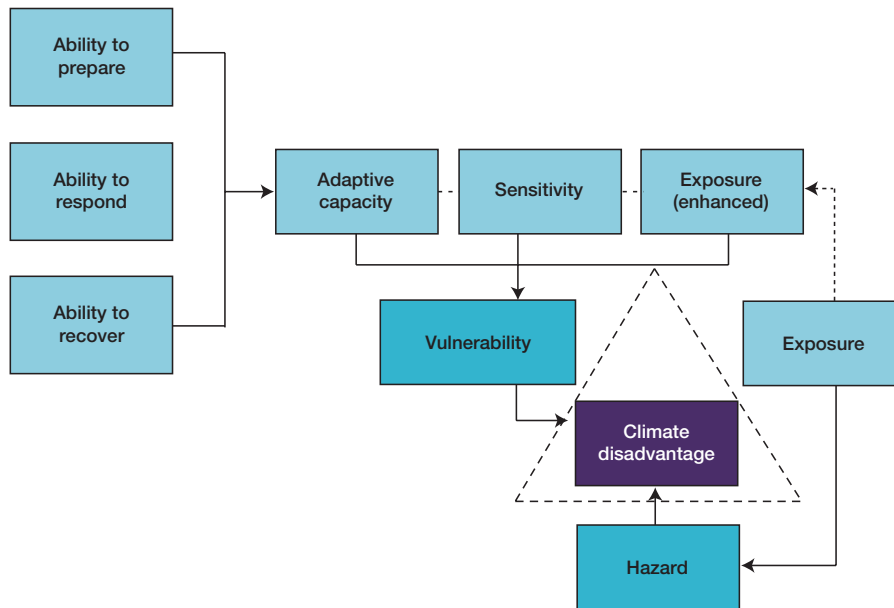
To foster just adaptation to climate change, it is necessary to understand who is vulnerable and at risk of climate change impacts. Lindley, *et al.*'s *Climate Change, Justice and Vulnerability* report, commissioned through the JRF Climate Change and Social Justice programme, is of particular relevance to adaptation planning as it explores the factors that make people more or less vulnerable to the impacts of climate change.

The report argues that people's vulnerability to climate change is determined not only by their likely exposure to specific climate hazards and individual characteristics or sensitivity, but also by differences in their ability to cope with these. At the core of the argument is that individuals' or groups' vulnerability to climate change is influenced by their 'ability to respond to stresses placed on their well-being'. Wellbeing is linked to people's 'capabilities' and 'functionings': for example, a flood may prevent people from getting to work if they cannot get their children to school or, if their business is flooded and has to close, may have a knock-on effect in relation to their income and ability to manage their bills.

Figure 2 illustrates the overall conceptual framework showing how socio-spatial vulnerability contributes to climate disadvantage.

The report suggests that adaptation policy has tended to focus on personal and environmental factors in its understanding of vulnerability. For heat waves and floods, personal factors would include individual characteristics such as age and health, while environmental factors would include the physical characteristics of neighbourhoods and the location of buildings in relation to climate hazards. Although this does bring in the social context, adaptation policy has often omitted 'social conversion' factors. These cover those personal, environmental and social factors that determine how positive or negative events are converted into gains and losses in people's overall wellbeing. In terms of environmental factors, these include factors which increase people's exposure to risk, such as living in a high-rise building (heat waves) or in a basement flat (flooding). Social factors include social isolation and support networks (which can affect awareness of and responses to climate impacts), fear of crime (leading to people being afraid to go outside/open windows even when it is very hot) and institutional regimes (such as the tendency for over-heating care homes). These factors make a significant difference in terms of an individual or group's ability to prepare for, respond to and recover from specific climate hazards. Taking these factors into account requires adaptation policies to be sensitive to the social context and people's overall wellbeing in considering climate change impacts and responses.

Figure 2: Conceptual framework from *Climate change, justice and vulnerability* report



Source: Lindley, et al., 2011

The report also maps the coincidence of social vulnerability and climate change hazards in order to identify neighbourhoods that face 'climate disadvantage', being both vulnerable to climate change and likely to be impacted by it. The report demonstrates that urban and coastal communities face particular climate disadvantage. Key factors affecting levels of social vulnerability include: poverty and deprivation, numbers of new residents, people's mobility and access to services such as healthcare. These maps are a useful resource, which, when combined with local knowledge, could help practitioners to assess local social vulnerability in order to support just adaptation.

The report also recognises that social vulnerability is dynamic in nature. Individuals can move into and out of a vulnerable state several times during their lifetime as a result of changes in physical and social circumstances, for instance, pregnancy, ill health, decreasing or increasing income and living conditions. This dynamism adds to the importance of understanding and addressing social wellbeing, but also suggests that a socio-spatial vulnerability mapping approach can only provide insights into and snapshots of vulnerability at particular points in time. This is because personal circumstances, through which individuals become more or less vulnerable, are subject to frequent change.

Finally, the timescales involved in climate change adaptation planning may range across generations and raise issues of inter-generational justice. This report, however, focuses on intra-generational justice, for two reasons:

- Many justice issues pertaining to individuals and groups in one generation also pertain to inter-generational settings. Therefore, the issues addressed in the context of this generation are likely to be those faced by future generations as well.
- Those who plan for adaptation or implement adaptation plans have to justify their plans and actions to the individuals and groups currently living in affected communities, and they are more likely to be concerned about issues affecting existing rather than future generations.

Distributive and procedural justice

Social justice issues related to adaptation are both diverse and very contextually specific (Paavola, 2011). Any approach to adaptation will need to understand the nature and incidence of key climate change impacts, the sources and incidence of vulnerability in the community, the range of adaptation strategies that are potentially available and the obstacles and opportunities for actually using and implementing them. There will be no blueprint for any particular area or community; the characteristics of specific climate impacts and the differential effects they may have on a range of vulnerable communities will require different responses.

The key components of social justice relevant to adaptation responses are:

- **distributive justice** – the distribution of income, assets and opportunity, and in particular the distribution of benefits and costs of adaptive actions (Paavola, 2011)
- **procedural justice** – how to empower communities to overcome lack of social capital and institutional barriers in order to be involved in decision-making

Procedural and distributive justice in the context of climate change adaptation

- Distributive justice in this context is particularly concerned with justice in the distribution of costs and burdens of adaptation. In adaptation planning this will involve understanding and responding to the varying vulnerability of populations to differential climate change impacts and ensuring that all communities are effectively protected from their negative consequences. It will involve consideration of principles such as equity and fairness in how resources are distributed, as adaptation responses themselves will have distributional consequences – both positive and negative – for different groups.
- Procedural justice encompasses issues such as recognition, hearing, participation, and fair distribution of power (Schlosberg, 1999; Shrader-Frechette, 2002). In the context of adaptation planning, a critical issue will be whose voice is sought out and heard in planning and decision-making. Legitimacy of decisions, plans and actions rests on procedural justice, because it assures those whose interests are not endorsed by a particular decision that their interests have been considered and that they have a chance to count in other decisions.

Just adaptation planning can only be achieved with full understanding of who is currently or could become vulnerable; JRF's *Climate Change, Justice and Vulnerability* report (Lindley, *et al.*, 2012) is helpful in identifying such vulnerable groups. Failure to adapt justly could exacerbate the negative consequences of climate change impacts for vulnerable groups. Successful and just adaptation in turn benefits different groups by protecting them from adverse climate change impacts on a differentiated basis (UKCIP, n.d.).

A key issue for organisations in undertaking adaptation planning will be the balance between who pays for and who benefits from adaptation actions, and the legitimacy of the approach. This is a particular issue with regard to the national prioritisation of flood defence measures and the reduction in central government funding with the expectation that a larger proportion of resources will come from local budgets. In addition, increased insurance premiums and

difficulties in obtaining insurance in flood-risk areas reveal similar distributional justice concerns; these are explored further in O'Neill and O'Neill (2012), which is also part of JRF's Climate Change and Social Justice programme.

On top of the importance of planned public adaptation measures, it is also crucial that individuals can help themselves and that they have access to the appropriate information to enable them to do so. For instance, information on flood risk and on the impact it will have on obtaining insurance should be readily available for anyone considering buying a property. For those living in private and socially rented housing, however, there may be little opportunity to understand risk. Communities living in flood-risk areas require information on practical action to take if flooding occurs and on sources of support to aid recovery. Similarly, older people require information about the risks of overheating in the summer and recommended actions to keep cool. Achieving just adaptation, therefore, suggests the need to ensure that people are empowered by making information available to them so that they can make informed decisions to support autonomous adaptation.

Individual responses also extend to families and businesses taking independent or autonomous action to protect themselves from adverse climate change impacts. Such actions are not however likely to be sufficient to protect them from extreme events such as tidal surges or severe storms in an effective and equitable way (Zsomboky, *et al.*, 2011). One example is flood resilience measures: protective measures for individual properties may be inadequate should major flooding occur, affecting whole streets and communities. Government, collective or third-party action is often necessary to achieve socially just adaptation and to avoid any wider adverse social impacts of adaptation measures.

Adaptation to climate change will thus consist of a combination of individual and collective choices and actions, taken at different levels of decision-making in the context of present and predicted climate change impacts, other social concerns and priorities, and the existing institutional framework that generates a particular distribution of resources, wealth and power.

Involving vulnerable individuals and groups in adaptation planning is essential to ensure that resultant adaptation plans and practices are socially just. Procedures influence the legitimacy of decisions (Lind and Tyler, 1988). Guidance can be taken from the 'principle of proportionality', which means that everyone affected by a decision should have some power in the decision-making process. An individual's power should be in proportion to the stake that they have in that decision. Bell (2012) suggests that local communities should have more power earlier in the decision-making process, particularly for development decisions. He also argues for power to be distributed among communities in proportion to the individuals' personal stakes. As the least well off are likely to have the highest stake in many climate change policies, they should have the most power in their development. This may be hard to put into practice, but it is clear that vulnerable groups, including people facing poverty and disadvantage, and agencies working with these groups, should be at the centre of developing climate change adaptation strategies.

It is also important to appreciate that climate change can create new vulnerabilities. For example, individuals who suffer flood damage may not only lose their savings or possessions and be left with diminished income and assets, but they could also struggle to access adequate insurance cover in the future. This highlights the need to consider the dynamics of climate impacts and how they may affect communities over time.

Delivering just adaptation

Just adaptation is concerned with distributional issues and with whose voice should be heard in the decision-making process.

Just adaptation is concerned both with the distributional issues linked to the costs and benefits of adaptation in response to varying climate change impacts and vulnerabilities, and with the matter of whose voice should be heard in the decision-making process.

Other factors will also affect how far just adaptation in relation to climate change can be achieved in practice. Adaptation planning is influenced and constrained by its context. Building adaptive capacity means improving the evidence base to support the development of local adaptation strategies and plans (not just those issues delivered by LAs), and delivering adaptation requires addressing both the physical infrastructure, such as flood defences and overall development patterns, and the delivery of mainstream services, such as housing and social care provision.

Climate change policies within LAs have traditionally fallen within the remit of climate change/sustainability planning officers; some LAs base their climate change officers in the chief executive's department, showing corporate commitment to the agenda. Socially just adaptation planning needs to ensure that LA climate change adaptation strategies and spatial planning policies assess, identify and take account of socio-spatial vulnerability as detailed earlier in this chapter. However, it is equally as important that plans, strategies and services for vulnerable communities led by other services and organisations take account of climate change concerns. These issues are investigated in more depth later on in the report, particularly in the case studies.

A further key point is the need to distinguish between severe weather and climate change impacts, according to their temporal implications. 'Weather' concerns day-to-day conditions and extreme weather events which lead to the need for emergency responses, such as those required during the recent high winds in Scotland (January 2012) and the severe winter weather experienced across the UK in the winters of 2009–10 and 2010–11. While it is essential that local services are prepared for such extreme weather events and their impacts on vulnerable communities, what is also important is that policies, plans, service delivery and physical infrastructure are developed and implemented with an understanding of projected climate change impacts (and their differential effects on specific communities) that may not be realised for some time. Developing community resilience is an important consideration here.

Community resilience is a useful concept when considering just adaptation, but definitions of it vary. The Cabinet Office (2010) defines it as 'communities and individuals harnessing local resources ... to help themselves in an emergency', while Gilchrist (2009) argues that strong networks within communities result in the 'wider community building a "resilience", leading to a sense of wellbeing and greater quality of life'. This links to the idea in Chambers and Conway (1992) of a 'sustainable livelihoods' approach where 'a livelihood comprises the **capabilities, assets** and **activities** required for a **means of living**; a livelihood which is sustainable can **cope with and recover from stress and shocks**, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation'. Where the phrase 'community resilience' is adopted in this report, it should be interpreted in two ways: firstly, as communities being informed about and understanding local climate change risks and the impacts of these that they, the communities, are likely to suffer; and secondly, as communities being involved in the planning and implementation of responses to these impacts in order to support sustainable livelihoods.

In light of this, the box below contains suggestions of principles that should be followed to ensure socially just adaptation.

Just adaptation principles, as identified by the study team

- taking into account current and future climate change impacts
- understanding the different factors that contribute to vulnerability
- identifying the distribution of the vulnerable groups likely to be affected and recognising that vulnerability is dynamic and changes over time
- involving the communities most likely to be affected in developing and delivering plans and activities related to adaptation, and supporting community resilience longer term
- assessing the potential adverse implications of climate change for vulnerable groups and identifying targeted adaptation activities to address vulnerability
- developing responses which build adaptive capacity, support adaptation actions and consider both physical infrastructure and service delivery
- being aware of the trade-offs that can arise in striving to achieve socially just adaptation and minimising the negative impacts for vulnerable communities as far as possible
- considering and assessing all adaptation options to ensure that the most beneficial are taken forward (the UKCIP Adaptation Wizard identifies a range of options from doing nothing, through low-regrets to no-regrets and win-win)

Just adaptation approaches

CAG (2009a) suggested the following key approaches for building social resilience and developing adaptive capacity:

- community-centred adaptation, e.g. information, communication, skills development, infrastructure and support; community health and social network building
- communicating the risks of climate change, including targeted approaches for vulnerable groups, e.g. the Village and Community Agents project in Gloucestershire¹ and the Everybody's Talking about Climate Change campaign in Derbyshire and Nottinghamshire²
- community empowerment, community development and regeneration, e.g. the Transition Network movement³

These could be categorised in two ways:

- tailoring existing adaptation measures to the needs of vulnerable people
- considering adaptation within existing community development work, i.e. ensuring that those who already work with communities to reduce vulnerability are aware of the vulnerabilities posed by climate change and adaptation and can keep these in mind for their approaches

CAG (2010) also suggests a number of responses that LAs can adopt to ensure that social justice implications are considered, including:

- socially aware and climate-aware service planning
- climate-aware community development
- dissemination of advice to vulnerable people and their carers
- monitoring social impacts

-
- spatial planning policies which identify opportunities to involve communities more
 - greater interaction between top-down and bottom-up responses, supported by an inventory of local civil society organisations
 - using participation techniques and the arts to bridge the gap between policy-makers and the personal experiences of citizens

The degree to which social justice implications are currently embedded in adaptation planning and implementation is considered further in Chapter 5.

Relating the theory to reality

Public policy and particularly local priorities are currently driven by cost-efficiency, developing resilience and minimising/mitigating risk in a difficult economic climate and in the face of public-sector funding cuts. Climate change can be viewed as a long-term issue that local agencies – public, private and community/voluntary sector – do not consider they have the luxury to afford, at least in current circumstances. However, inaction now could lead to much higher costs in the longer term, as laid out in the *Stern Review* (2006). It is important to emphasise the strong economic rationale of early action to ensure that the adaptation agenda gets due consideration and appropriate priority in LAs and among other relevant bodies.

Climate change impacts affecting vulnerable groups, and adaptation to avoid such impacts, raise moral and social issues as well as environmental concerns, and need to be addressed accordingly. An important element of this research was into whether climate change adaptation, in terms of minimising future risks and maximising community resilience, is being considered by organisations and practitioners with a social rather than an environmental focus. In some circumstances, there may be an incompatibility between social and environmental goals; where economic growth is the priority, both may be compromised. There are examples of affordable housing built in less expensive flood-risk areas to meet housing needs which could not readily be satisfied elsewhere, despite adverse long-term climate change impacts. The potential for social distress if household insurance for flooding becomes unaffordable or unavailable is an important issue to consider long-term, as explained by O'Neill and O'Neill (2012). As such, social justice needs to be understood as one of a number of dimensions informing decision-making and action, which will need to be reconciled with economic and environmental issues as part of the overall drive to deliver sustainable development.

Conclusion

This chapter has brought together some of the key concepts which provide the theoretical context within which just adaptation planning can be developed and delivered. New research is providing a useful set of tools to help understand issues such as social vulnerability in relation to climate change. In addition, there is a deeper understanding of the causes and effects of distributional and procedural justice among both academics and, increasingly, public-sector policy and decision-makers.

Distributive and procedural justices are not independent of each other. If a group is not recognised and cannot participate in the planning and decision-making, its interests are unlikely to inform and be served by adaptation plans and decisions. Also, being disadvantaged in distributive terms creates obstacles for gaining recognition and participating in adaptation planning and decisions.

For this reason, adaptation plans and decisions can aggravate inequality rather than reduce it.

It is therefore important to examine to what extent adaptation plans and strategies acknowledge social justice considerations and their implications for differently situated affected groups. The absence of such plans and strategies also has implications for social justice because this situation could exacerbate adverse climate change impacts on the most exposed and vulnerable. Climate change impacts and the social justice implications of adaptation plans and strategies are not independent: egalitarian adaptation policy may not be just if exposures and vulnerabilities have unequal incidence. Failure to provide adaptation benefits to vulnerable and exposed groups, when other groups do receive such benefits, is likely to have negative impacts for social justice.

This theoretical perspective was used to inform the research approaches for the study, and adaptation practice was investigated in relation to the concepts discussed in this chapter.

3 NATIONAL AND LOCAL CLIMATE CHANGE ADAPTATION POLICIES AND ACTION

This chapter provides the policy context for our assessment of just adaptation in the UK. It highlights key UK and Devolved Administration policies concerning climate change adaptation (see Appendix I for a summary of these) and examines the degree to which these consider social justice.

The impetus for action in the UK has come in part from the *Stern Review* (2006), which insists that adaptation measures are crucial to deal with unavoidable climate impacts. Stern argues that the Government would need to act to remove barriers to adaptation. These barriers are identified as:

- uncertainty and lack of information
- missing and misaligned markets, e.g. where adaptation is a 'public good' which is non-rival (one person's consumption does not stop another person's consumption) and non-excludable (where the provider cannot stop non-payers using a good or service)
- prohibitive costs, i.e. costs that are too high to be taken on by individuals or organisations

The policies discussed in this chapter set the scene in terms of the extent to which policy and a supporting framework for adaptation planning has developed since the *Stern Review* (2006).

Policy context – UK and Devolved Administrations

Under the Climate Change Act 2008, the government has a statutory duty to assess the risks posed by climate change for the UK and to develop a

National Adaptation Programme. The Act also gives the government the power to require public authorities and statutory bodies (including utilities) to report on how they have assessed the risks of climate change to their work, and what they are doing to address these risks. Defra has also introduced a new approach, which allows deprivation to be considered when prioritising flood and coastal defences. One of the broad principles for policy appraisal, stated in *Appraisal of flood and coastal erosion risk management: A Defra policy statement* (Defra, 2009b), is to disaggregate costs and benefits to determine which sections of society are paying for and benefiting from different flood and coastal defence options.

As a consequence of the Act, the Adaptation Sub-Committee was established in 2009 to provide independent scientific, economic and social advice to inform the UK's adaptation programme. *Adapting to climate change in the UK – measuring progress* (Adaptation Sub-Committee, 2011) suggests that some sectors in the UK are near the limits of coping with the current climate and could struggle to deal with further changes. The report promotes the concept of an 'adaptation ladder to assess preparedness'; taking into account the question of whether the UK is becoming more or less vulnerable to current and future climate risks, the degree to which low-regret adaptation actions⁴ are being taken up and the extent to which long-term decisions are systematically accounting for climate risks. This provides a useful framework, but social justice is only highlighted in terms of spatial vulnerability and the health issues for older people caused by hotter temperatures; no other consideration of social vulnerability is included.

The *UK Climate Change Risk Assessment* (CCRA), published by Defra in January 2012, identifies risks and opportunities that climate change may present. The report indicates several issues that are of relevance to vulnerable communities, a number of which relate to health and wellbeing. Only limited attention, however, is given to the sorts of broader social justice issues highlighted in Chapter 2.

The *UK Climate Change Risk Assessment Government Report* (Defra 2012b) outlines actions already in place for addressing the risks identified in the CCRA and lays out the government's plans for the future. The key vehicle through which activities will be proposed to respond to the identified risks will be the National Adaptation Programme, due to be produced in 2013. In the CCRA, the concept of social vulnerability is recognised as a relevant factor in assessing the social consequences of climate change impacts; however, the term itself is not defined. The report focuses on the physical and mental health impacts of increased summer temperatures and increased flooding, rather than on the wider social impacts that climate change may cause. The main discussion around social vulnerability is provided in Annex B of the *Climate Change Risk Assessment Evidence Report*, which explores various definitions of climate and social vulnerability. It considers social vulnerability and adaptive capacity, describing 'vulnerability' as:

the extent to which a system is susceptible to, or unable to cope with, adverse effects of climate change including climate variability and extremes. It depends not only on a system's sensitivity but also on its adaptive capacity. Hence arctic alpine flora or the elderly may be more vulnerable to climate change than other components of our flora or population.
– Defra, 2012

The annex draws a number of conclusions concerning vulnerability to climate change, and suggests several categories of vulnerable people; however, it is not explicit in identifying priorities or providing further metrics for assessing

The key vehicle will be the National Adaptation Programme, due to be produced in 2013.

social vulnerability at UK level. The next CCRA may provide opportunities to incorporate more thinking on the metrics for social vulnerability and related responses.

Cost–benefit analysis through the UK Government’s Adaptation Economic Analysis is being undertaken as a component of the CCRA. This will aim to estimate an overall value for adaptation costs and benefits to the UK economy, and will identify areas where adaptation would be particularly beneficial (e.g. by creating jobs). Once this is published as a report, it will be useful for understanding how the needs of vulnerable communities are balanced with potential economic (and environmental) gains. It is of considerable note that the UK is at the forefront of climate science and is the first country in the world to build this risk-based approach into legislation. The risk-based approach is also of particular relevance to social justice as it aligns adaptation policy more closely with social justice, as discussed in Chapter 2.

Given the likely health impacts related to a changing climate, the government has recognised the importance of making both emergency and strategic planning a priority for the NHS. Various plans have been introduced which, although not necessarily specific to climate change, provide the NHS with a response to climate-related emergencies. The Department of Health has already considered many of the risks identified in the CCRA through its *Climate Change Plan*. The department, together with the Health Protection Agency will shortly update its latest report on the *Health Effects of Climate Change* (Department of Health and Health Protection Agency, 2008). In addition, the most recent *Heatwave Plan for England: Protecting health and reducing harm from extreme heat and heatwaves* (Department of Health, 2010) details steps to improve both disaster/emergency responses (as a result of increases in the magnitude or frequency of extreme weather events) and strategic actions to ensure that the NHS is better adapted in the longer term to cope with climate change impacts. These plans and reports clearly understand the health impacts of climate change, but do not explicitly consider wider social vulnerability.

Northern Ireland does not yet have an over-arching adaptation plan or framework, although research has been undertaken by the Scotland and Northern Ireland Forum for Environmental Research, entitled *Preparing for a Changing Climate in Northern Ireland* (SNIFFER, 2007b), which includes a risk analysis and an adaptation strategy for each impact and identifies the public-sector bodies responsible for delivery. It is envisaged that an adaptation programme for Northern Ireland will ultimately be put in place. The Northern Ireland Climate Change Impacts Partnership (NICCIP) was established in 2007 to increase knowledge and understanding of potential impacts in Northern Ireland. Government departments will also be required to produce plans to be presented to the Northern Ireland Assembly setting out climate change policies in line with the Climate Change Act 2008 (along with the continuing statutory obligation to produce a risk assessment every five years). These policies and plans consider vulnerability only in terms of health.

In 2009, the Scottish Government published its *Climate Change Adaptation Framework*, as required by the Climate Change (Scotland) Act 2009. This aims to build Scotland’s resilience to climate change and highlights the need to consider social impacts when creating adaptation policy. Beneath the framework, ‘sector action plans’ have been produced which contain summaries of key issues faced by sectors (e.g. Business, Health, Built Environment, Water, Marine), along with planning information which will help strengthen resilience. The framework states that the Scottish and Local Governments must consider how social impacts may be most effectively addressed in adaptation measures, in order to ensure existing inequalities do not widen with climate change.

Earlier this year, Scotland's First Minister Alex Salmond was quoted in the press as 'calling for "climate justice" to be central to decisions on energy and development'.⁵

More recently, Defra's Adaptation Sub-Committee advised the Scottish Government in developing its first statutory adaptation programme for its 2011 report: *How Well is Scotland Preparing for Climate Change?* This provides recommendations for developing adaptation policy and practice, including the requirement that key decision-makers explicitly consider adaptation in long-term plans. The report recognises that Scotland has a number of social, economic and environmental characteristics that will increase its vulnerability to some of the damaging impacts of a changing climate. The report suggests that plans should promote effective social care and reduce the impacts on vulnerable groups, ensuring healthcare is sufficient during heat waves and floods.

Wales has its *Climate Change Strategy* (Welsh Assembly Government, 2010b), and *Climate Change Adaptation Delivery Plan* (2010a). The plan recognises that LAs must be at the heart of adaptation policy, as in many cases this is a spatial issue. In 2011, the Welsh Government issued *Preparing for a Changing Climate: Guidance for Implementing Climate Change Measures*, which indicates a five-step process that should be undertaken by key reporting authorities. The definition of the latter includes 'those authorities that are vulnerable to the projected impacts of climate change', and the guidance has a particular focus on health organisations and health impacts. Welsh policy details an explicit commitment to acknowledging and embedding social justice, but examples again tend to focus on vulnerability in terms of spatial location and health.

National and local responsibilities

The climate adaptation responsibilities of various bodies are summarised in the CCRA *Government Report*. Defra, the Devolved Administrations and the Environment Agency are responsible for the majority of environmental issues whilst the Department of Health (and equivalents in Devolved Administrations) plus the NHS are responsible for climate change impacts on health and social care (further detail is provided in Appendix II).

Other agencies at the national level

The Environment Agency is responsible for protecting and improving the environment in England and Wales, protecting communities from the risk of flooding and managing water resources. Since September 2011, the Environment Agency has become Defra's principal partner in delivering the government's climate change adaptation programme, which replaces much of the work previously undertaken by UKCIP. The Environment Agency is working with sub-national climate change partnerships (CCPs) to identify local priorities and actions, with the CCPs supported by Defra funding until March 2013. Collectively, the CCPs constitute Climate Change UK. In addition, the Environment Agency will commence work on a number of themes at national level to ensure climate change adaptation is mainstreamed. These themes cover: business and services, infrastructure, built environment, health and wellbeing, natural environment, forestry and farming, and local government.

Environment Agency flood-defence spending is heavily targeted at deprived areas and planning controls to help protect the quality of environments. The Environment Agency maintains river defences according to economic,

environmental and legal criteria or where 'stopping maintenance would cause an unacceptable flood risk', but has no specific agenda with regards to social vulnerability.

The Environment Agency and Defra published the *National Flood and Coastal Erosion Risk Management Strategy* in 2011 which was required by the Flood and Water Management Act 2010 and a recommended output from the *Pitt Review* (inquiry into the 2007 floods). The strategy is intended to ensure that government, the Environment Agency, LAs, water companies, internal drainage boards and other organisations that have a role in flood and coastal erosion risk management all understand each other's roles and co-ordinate how they manage these risks. The strategy is largely concerned with existing flood risk rather than potential climate change impacts.

The Scottish Environmental Protection Agency (SEPA) and the Northern Ireland Environment Agency (NIEA) also play similar roles. SEPA, for instance, works with other organisations to help manage flood risk in Scotland and to encourage sustainable flood management. NIEA puts a strong emphasis on its environmental monitoring role, providing indicators on climate change impacts in the *State of the Environment Report* (NIEA, 2008). In Wales, the Welsh Government is currently in the process of establishing a single environmental body which will bring together the functions of Countryside Council for Wales, the Environment Agency Wales and the Forestry Commission Wales.

In Scotland, Adaptation Scotland (formerly the Scottish Climate Change Impacts Partnership) was established to 'increase the resilience of organisations and infrastructure in Scotland to meet the challenges and opportunities presented by the impacts of climate change'.

There are a number of public, private and not-for-profit organisations with responsibility or authority for adaptation planning and actions that operate between the national and local levels. These include the NHS, regional water companies, Network Rail, Highways Agency, regional electricity distribution companies, emergency services, religious communities, housing associations and non-governmental organisations. They may plan for adaptation to varying degrees in light of the climate change impacts central to their operations or key concerns. They will also undertake adaptation measures, to be delivered locally.

UKCIP helps organisations to adapt the way they work in order to deal with the impacts of a changing climate. Since 1997 it has been providing resources to help organisations to understand what changes to the climate might mean for them, as well as offering guidance on how to prepare for these changes. UKCIP works with stakeholders in the public, private and voluntary sectors to develop resources that can enable robust, evidence-based adaptation.

UKCIP Adaptation Wizard set out guiding principles to inform effective adaptation, and its defined characteristics of 'good adaptation' include some consideration of social justice, for example the principles to 'identify and engage your community' (procedural justice) and to 'avoid actions that foreclose or limit future adaptations or restrict the adaptive actions of others' (distributive justice). However, the guidance does not, at present, specifically consider disadvantaged or especially vulnerable communities. UKCIP's adaptation work will be taken forward by the Environment Agency in the future as part of the UK National Adaptation Programme.

Local agencies

All LAs in Scotland and Wales, and all unitary and district councils and National Parks in England and Scotland, are essentially planning authorities, and the

planning system is crucial for adapting the built environment to allow for climate change. In addition, unitary and upper-tier authorities are designated as lead local flood authorities, while lower-tier authorities have the role of risk management authorities with regards to flooding. The DCLG in England recently published its *National Planning Policy Framework*, which sets out an overall presumption in favour of sustainable development and contains specific policy guidance with regards to 'Meeting the challenge of climate change, flooding and coastal change'. This guidance identifies the need for mitigation, minimisation of vulnerability and provision of resilience to impacts arising from climate change, and also emphasises the need for new development to be planned 'to avoid increased vulnerability to the range of impacts arising from climate change'. In addition, directive guidance is provided to avoid inappropriate development in areas at risk of flooding and to ensure that new development does not increase flood risk elsewhere. It also notes that 'local plans' should take account of climate change and, controversially, where flood risk is expected to increase and affect the sustainability of existing development in the long term, LAs should seek 'opportunities to facilitate the relocation of development, including housing, to more sustainable locations.'

The planning system is crucial for adapting the built environment to allow for climate change.

Planning Policy Scotland (Scottish Government, 2010b) states that the design of new development should include features that provide effective adaptation to the predicted effects of climate change. *Planning Policy Wales* (Welsh Assembly Government, 2010c) highlights the importance of planning for the consequences of climate change, stating that 'climate change will have potentially profound environmental, economic and social justice implications and failure to address it will make planning for sustainability impossible'. Northern Ireland's *Planning Policy Statement 15: Planning and Flood Risk* (Northern Ireland Government, 2006) adopts a precautionary approach to development and land use, which takes account of climate change and supports the wellbeing and safety of communities.

The Localism Act 2011 (which covers England, with some specific provisions covering Wales) does not contain any specific guidance regarding climate change or climate change adaptation, but its overall ethos of passing control back to local levels, coupled with reforms to the planning system, will have an impact on the delivery of climate change adaptation planning and implementation. Specifically, local communities in England can shape new development by coming together to prepare 'neighbourhood plans' through town and parish councils or in 'neighbourhood forums'. Neighbourhood plans provide an opportunity for local communities to plan for community climate change adaptation at a very local level.

The split of responsibilities in two-tier councils will also affect wider strategic planning and responses on mainstream service delivery. The upper-tier authorities will deal, for example, with education and social care, with the lower tier dealing with spatial planning and housing. In addition, as part of the current restructuring of the NHS, public health directors will now sit within LAs as opposed to the NHS, providing a good opportunity for greater collaboration and co-ordination between health, social services and more climate change impact-related services such as planning, housing, sustainability and environmental health.

Housing providers have no defined responsibilities for climate change adaptation, although social housing providers have a role in delivering Decent Homes legislation and the Code for Sustainable Homes. However, individual housing associations are adopting innovative approaches to ensure that adaptation responses are being implemented. For example, Octavia Housing has recently received funding from the Technology Strategy Board to investigate how best to adapt homes to resist the effects of climate change, such as flooding and overheating.

Climate Change Commitments

In signing the Nottingham Declaration, LAs pledge both to 'systematically address the causes of climate change and to prepare their community for its impacts'. Over 300 English LAs and other organisations (such as fire and rescue services, national park authorities and primary care trusts) have signed the declaration. Following consultation with LAs, the Local Government Association (LGA) is working with the Nottingham Declaration partners to develop a more locally relevant replacement mechanism, Climate Local, through which LAs can express commitments to climate change both locally and nationally, and seek support for climate change objectives. The new web resources will be available on the LGA website from September 2012 and will provide an opportunity to consider social justice implications in climate change adaptation.

Scottish and Welsh LAs have their own versions of the declaration. All 32 of Scotland's LAs have signed up to Scotland's Climate Change Declaration (2008), committing them to adapt to climate change and to work with communities to support their responses. In December 2011, all council leaders in Scotland were formally contacted by the Convention of Scottish Local Authorities's Climate Change Task Group, with the request that their local authority complete an annual report for the fourth year of Scotland's Climate Change Declaration. All 22 unitary authorities in Wales, as well as the fire and rescue services and national park authorities, have signed the Welsh Commitment to Address Climate Change (2007), entitled *Changing Climate: Changing Places*. The latter includes no specific reference to social justice implications.

Conclusion

From the policy review, the following key findings have emerged:

- While the UK Government has stated that adapting to climate change is a high priority which requires a step change in terms of both awareness and action, it also views climate change adaptation as primarily a local issue. Central Government's role will first and foremost comprise support and encouragement for local bodies (including local government, business and communities). The rationale behind this view is that actions are thought to be most effective when tailored to local circumstances. These include differences in anticipated impacts and, in particular, the challenges and priorities of local populations. This also fits with the more general stated aim of the UK Government, to shift control away from the centre.
- Most UK and national policies now make reference to the social justice implications of climate change and climate change adaptation, but these usually focus on spatial vulnerability, such as communities living within flood plains, rather than on a broader understanding of community resilience and social vulnerability, and potential implications for all susceptible groups. Procedural justice in particular is less well explored, perhaps because the spatial issues are seen to some extent as 'fixed' and as requiring technical rather than social solutions.
- Where wider vulnerability is taken into account, this tends to be very much focused on health (e.g. implications of heat waves for younger/older people and those in ill health), with less thought given to those who are socially vulnerable for other reasons, such as low income or lack of social networks. The CCRA takes a more considered approach, particularly in Annex B of its *Evidence Report* concerning social vulnerability. The main body of the

assessment focuses mainly on health in identifying vulnerability. Broader concepts of wellbeing and the effects of climate change on people's functioning and capabilities need to be considered for understanding and addressing social vulnerability.

The Localism Act 2011, the *National Planning Policy Framework* and national planning policy will place more onus on LAs to promote climate change adaptation. However, they have conflicting priorities and limited resources; ensuring that climate change adaptation is recognised as a priority will be challenging.

- As noted above, LAs do not have sole responsibility for climate change adaptation policy and action at the local level. The Environment Agency's new role will encompass identifying and implementing solutions for adapting to climate change (as will that of Adaptation Scotland, SEPA and NIEA). Other agencies, such as health service providers, housing bodies and voluntary and community organisations, should also be taking account of the agenda. Co-ordination across LA departments and across LAs in two-tier areas will be required, spanning their responsibilities for climate change/sustainability, spatial and emergency planning, engineering, housing and social services. LAs will also need to work together to address cross-border issues with other agencies and sectors in order to develop integrated responses to support their communities.
- LA climate change adaptation plans are at the heart of this study. They play a pivotal role in adaptation planning, while acknowledging the importance of understanding the roles of all stakeholders responsible for climate change adaptation at the local level, as well as how these interrelate. In the next chapter, further information is provided on the survey of LAs with climate change adaptation plans, which was undertaken to assess how they address social justice. The tools currently available to assist in climate change adaptation planning and implementation are also considered.

4 LOCAL AUTHORITY ADAPTATION PLANS

A key element of the research was to review LA adaptation plans and the current state of adaptation planning in LAs, based on NI 188 (Planning to Adapt to Climate Change) data. The review's findings were then compared with the results of a survey undertaken by the LGG in August 2010, which sought to explore how LAs are tackling climate change (including mitigation as well as adaptation), their capacity and the support they need. It should be noted that this review was undertaken in spring 2011 and that some LAs may therefore have made additional progress since the time of writing.

We recognise that local authorities are no longer required to report on NI 188, following the abolition of the NI performance framework. However, until recently this provided a good lever for local action, and ensured that LA officers involved in performance management, in addition to those working directly on climate change and sustainability matters, were aware of climate change adaptation.

In order to provide a more recent context for the work, the review of NI 188 data and comparison with the LGG survey are followed by a summary of the research and analysis undertaken in the Green Alliance's *Is localism delivering for climate change?* report (2011), which further examines LA commitment to the climate change agenda.

Current state of adaptation planning in local authorities

We found that many LAs have considered potential impacts, threats and opportunities, but few have developed comprehensive adaptation strategies.

Table 1: NI 188 levels achieved by local authorities in England, 2009/10

Region	Level 0	Level 1	Level 2	Level 3	Total
East Midlands	4	7	32	1	44
East of England	4	19	28	1	52
London	3	20	6	4	33
North East	0	4	5	3	12
North West	9	16	14	2	41
South East	10	40	24	0	74
South West	3	14	25	0	42
West Midlands	7	17	9	0	33
Yorkshire and The Humber	1	18	3	0	22
Total	41	155	146	11	353
Percentage	12%	44%	41%	3%	100%

Source: Defra, 2009/10

One hundred and fifty LAs in England had adopted NI 188 by 2009, and this had doubled by 2010 as detailed in Table 1. But only 11 had achieved Level 3 status in 2009/10.⁶

Methodology

All LAs who were assessed as Level 2 or Level 3 in 2009/10 were contacted directly to discover if they now had a plan and, if so, whether it could be viewed for this study. We also contacted all LAs in Scotland, Northern Ireland and Wales (where NI 188 was never applicable). In addition, we posted a notice on the 'communities of practice' forum inviting any LAs not contacted directly to submit their plans.

The results are shown in Table 2. We were able to identify a total of 34 completed local adaptation plans in England, a much higher figure than the 11 suggested by the out-of-date NI 188 data, but still a very small proportion of all LAs. We also identified one sub-regional adaptation plan produced by LAs in West Yorkshire and included this in the review.

At the time of the review we were only able to identify one completed adaptation plan in Scotland, and none in Northern Ireland or Wales. This may have been because Wales has a nationwide climate adaptation framework, while Northern Ireland LAs do not have planning powers. In Scotland, it was found that nine LAs had completed Local Climate Impact Profile (LCLIP) studies, which are often the precursor to producing adaptation plans. Scottish LAs were also involved in the development of sector adaptation plans.

We originally intended to review a representative sample of 36 local adaptation plans drawn from across the UK, to test the extent to which social justice issues are considered, and to search for best practice examples. In fact, as highlighted above, we only managed to identify 36 local adaptation plans in total that were complete at the time of the review.

Despite a smaller total population size than anticipated, the 34 local adaptation plans for England (all of which we reviewed, along with the single plan from Scotland and the sub-regional plan) were broadly representative of LAs in England, by both geographic spread and rural/urban split, with a slight bias towards areas of deprivation.

Table 2: Status of local authority plans, based on response to SQW review, 2011

Country	Region	Complete	In progress	No plan	Not known*	Total
England	East Midlands	3	3	3	35	44
	East of England	6	2		44	52
	London	3		1	29	33
	North East	4	2	1	5	12
	North West	2	1		38	41
	South East	7	1		66	74
	South West	5	2	3	32	42
	West Midlands	3			30	33
	Yorkshire and the Humber	1			21	22
	England total	35	11	8	300	353
Northern Ireland			1	1	24	26
Scotland		1	5	1	25	32
Wales			2	4	16	22
Total		36	19	14	365	433
Percentage of all authorities		8%	4%	3%	84%	100%

Source: SQW, 2011

*Of which, 177 were contacted directly but did not respond. The remaining 188 were LAs in England with Level 0 or Level 1 on NI 188 recorded at 2009/10. We considered it unlikely that these LAs would have developed a complete plan by 2011 and therefore did not contact them directly.

Findings

Types of adaptation measures

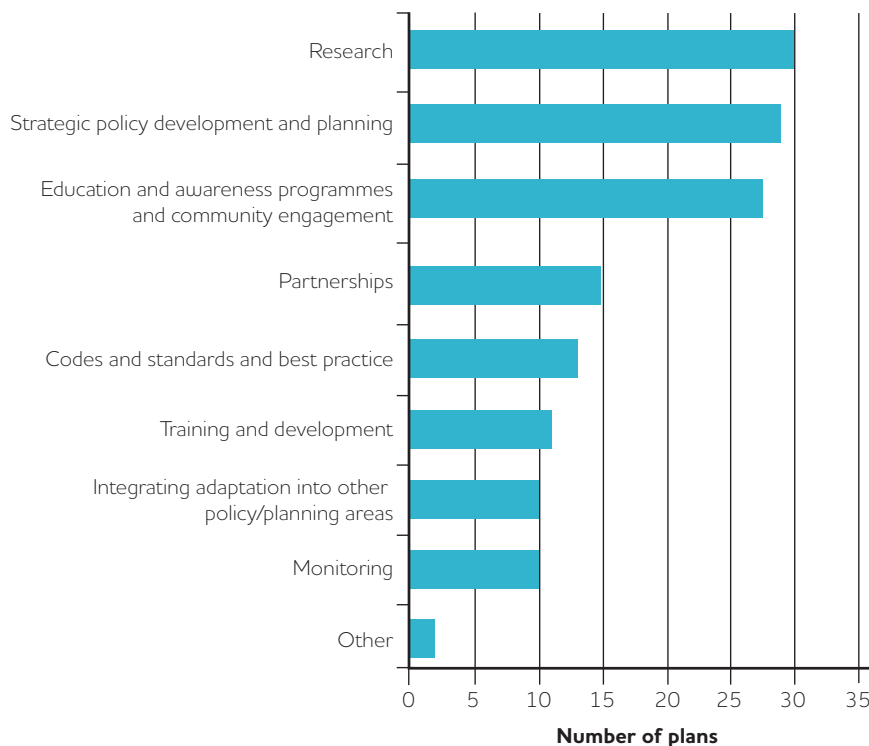
The ability of LAs to respond and the nature of their responses is affected by their status and delivery responsibilities. Unitary authorities are responsible for all LA functions – housing, waste, education, libraries, social services, transport, and planning – while fire and police services are organised at the county or regional level. In areas with two-tier local authorities (counties/shires and districts/boroughs), waste management, education, social services, transport and libraries are covered at the upper level, alongside fire and police services, with lower-tier local authorities responsible for housing, waste collection and spatial and emergency planning.

LAs in two-tier areas clearly need to work together to respond to climate change impacts. As owners and managers of the public realm and public buildings, they should co-ordinate in many areas, including spatial/land-use planning, housing and building control, green space provision, and flood risk management. Alongside these, they will need to address the implications for education, social services, transport and other services, which need to be resilient to climate change/risk.

Figure 3 sets out the results of our review of LA adaptation plans, in relation to the capacity-building measures adopted. It is notable that research activities and, to a lesser extent, strategy and policy development and planning were by far the most common measures, which would suggest that most LAs are still at an early stage in addressing climate adaptation issues, and that they feel that more research is required to help understand impacts and vulnerabilities.

Most LAs are still at an early stage in addressing climate adaptation issues.

Figure 3: Measures to build adaptive capacity identified in 36 local authority adaptation plans, reviewed by SQW, 2011



Source: SQW, 2011

Capacity-building measures were more prevalent than direct actions to adapt. Among the direct actions (shown in Figure 4), the most common related to water and drainage management, perhaps in response to the *Pitt Review*, which found that surface-water drainage issues had contributed to the impacts of the 2007 floods.

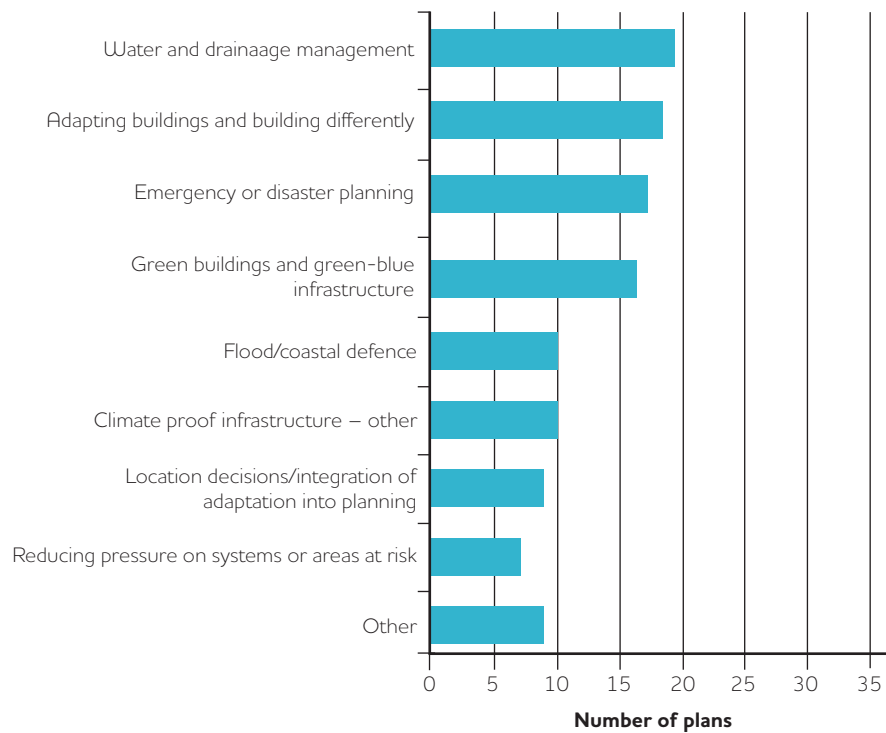
We were able to compare our findings with those from the survey undertaken by the LGG in 2010, despite the use of some different categories. The LGG survey found that the most common measures undertaken included:

- sustainable urban-drainage work (57 per cent)
- minimum flood-resilience criteria for new developments in flood-risk areas (53 per cent)
- contingency plans for the wider community (52 per cent)
- contingency plans for vulnerable people (52 per cent) in the case of heat waves, flooding or other environmental crises

Eighty-five per cent of LAs had increased the officer time spent on adaptation in the last two years (2008–10); 45 per cent had increased it ‘greatly’.

It should be noted that most of the plans reviewed focused on the first part of the UKCIP typology – i.e. actions to build capacity, raise awareness and research the impacts of climate change – rather than on adaptation actions to address immediate impacts. This was also the case in the American local climate change plans reviewed by Tang, *et al.* (2010), in which the quality of different aspects of plans was scored. The key finding was that ‘awareness’ received the highest score.

Figure 4: Delivering adaptation action – measures identified in 36 local authority adaptation plans, reviewed by SQW, 2011



Source: SQW, 2011

Most adaptation plans reviewed did not clearly prioritise adaptation measures or provide details of resourcing. Some plans had identified all measures as ‘high priority’. Others referred to measures being undertaken within existing resources, or to seeking external resources, but did not quantify the resources required.

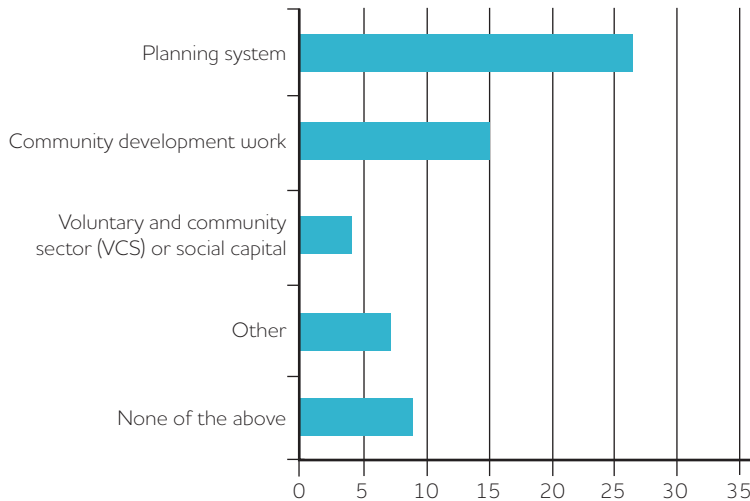
Approaches undertaken by local authorities

The approaches that were adopted in LA adaptation plans were reviewed: the results are shown in Figure 5 below. Addressing climate change through the planning system was the most popular approach, mentioned by three-quarters of the sample. Fifteen of the thirty-six documents also cited the use of community development approaches.

The plans were searched to establish whether LAs had specifically referred to social justice, or whether other terms that might indicate social justice had been considered. The results are shown in Figure 6.

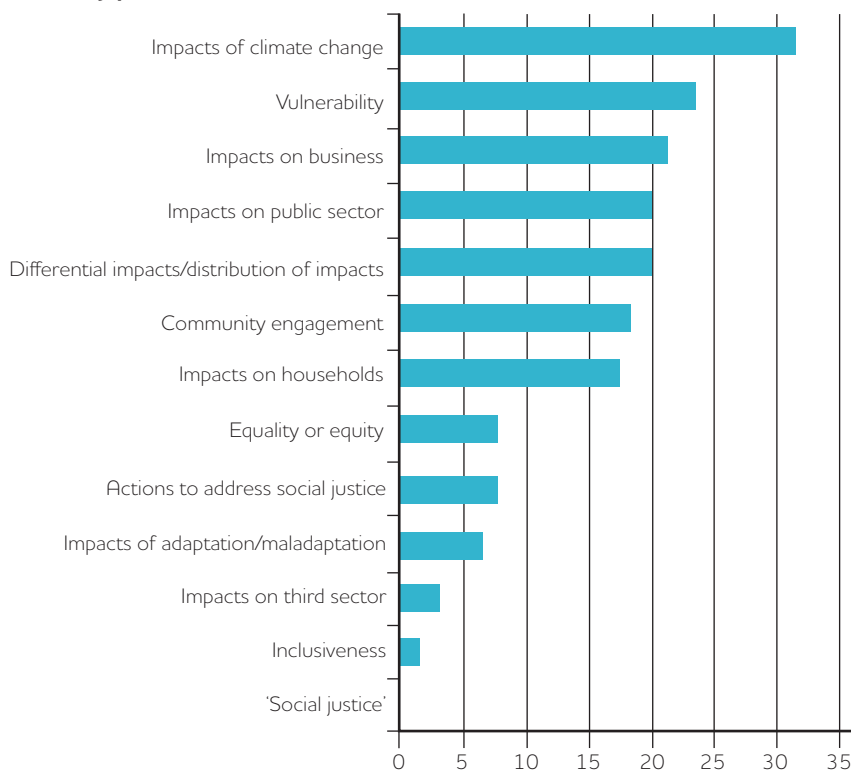
The analysis shows that most plans considered concepts of vulnerability (24 of 36) and the impacts of climate change on business (21). Over half of the plans we reviewed also considered differential impacts on different groups of people, the distribution of these, and community engagement. Only a small number of plans mentioned equity/equality (7) and inclusion (1); none addressed ‘social justice’ specifically using that term.

Figure 5: The approaches taken by local authorities to implement adaptation (based on a review of 36 local authority plans reviewed by SQW in 2011)



Source: SQW, 2011

Figure 6: What social justice issues were considered or addressed in 36 local authority plans?



Source: SQW, 2011

Our sample of 36 plans in the UK was not large enough to stratify; for example, to test whether there was a difference in approach to social justice between areas showing higher and lower levels of deprivation. This could be a useful issue to explore in the future, if the exercise were repeated when LAs have completed their adaptation plans. In the absence of a large sample, NI 188 data was reviewed to explore any patterns in relation to deprivation, geographical coverage and urban/rural split.

From the 2009/10 NI 188 data, it is evident that the East Midlands was furthest advanced in adopting adaptation plans. Three-quarters of LAs in the region were at Level 2 or Level 3 in 2009/10. The highest proportion of LAs with a Level 3 plan was in the North East; London had a higher number (four, to the North East's three). Yorkshire and Humber had the lowest share: 86 per cent of LAs were only at Level 0 or Level 1 by the end of 2009/10.

No particular patterns were identified in relation to deprivation. At the end of 2009/10, the most deprived LAs were more likely to be at Level 1 and had a lower proportion of plans that had reached Level 2 compared with the national average. However six of the eleven LAs that had attained Level 3 were in the most deprived 20 per cent of England, suggesting no overall relationship between deprivation and level.

Similarly, there was no clear relationship between the urban/rural status of LAs and NI 188: there were no rural LAs at Level 3 by the end of 2009/10, although a relatively high proportion had reached Levels 1 and 2.

Interestingly, the review of climate change action in the US undertaken by Tang (2010) revealed the following findings:

- Government (state) mandates to adopt a climate change plan significantly increased plan quality at the local level.
- Regulatory requirements enhanced local plans.
- Political will and community wealth were not significant predictors of local climate change policy.
- Recent experience of severe climate events did not improve plan quality but appeared in fact to affect it negatively.

Key messages

From our review of 36 LA adaptation plans, and comparing the findings with other research undertaken by the LGG and by Tang on climate change plans in the US, we highlight the following findings:

- Most adaptation plans follow Tang's (2010) three critical components of planning: first setting out the science, then identifying likely impacts on the local area and risks to service areas, and finally proposing actions to address these risks.
- Two types of adaptation responses and decisions are evident: those aiming to *build adaptive capacity* (by creating information, supportive social structures and the governance arrangements needed to then deliver adaptation actions) and those aiming to *deliver direct adaptation actions* that help to reduce vulnerability to climate risks or explore opportunities. We found many examples of building adaptive capacity through research, but few direct actions. Direct actions tended to focus on water and drainage management, which appears to be a response to the *Pitt Review*. This suggests that LAs have still to find the appropriate balance between the strategic and the operational functions of the plan.
- Many LAs were found to be only at the start of the process of thinking about and planning for adaptation in the long run (notwithstanding the fact that these LAs are ahead of the majority across the UK). Consequently, most adaptation plans were fairly new (some of those we reviewed were only in draft form) and, as identified in the NI 188 data, most LAs do not yet have a complete plan. It may be that as the practice of adaptation planning in LAs matures, plans will become more specific, focused and informed. Since national indicators have been abolished, however, it will be difficult to

monitor progress at the level of the country as a whole and it is possible that momentum could be lost.

- The 36 adaptation plans reviewed are diverse in approach (although there are some shared features such as the use of UKCIP typology and projections). This is because no official template exists on how to complete an adaptation action plan and each plan addresses local priorities and risks. Some of the plans could be broadly characterised as high level with few detailed actions; some with rather 'woolly' aims and objectives, leaving the reader confused as to what if any specific adaptation measures might be taken as a result of the plan. Others present a range of detailed actions with less over-arching strategy.
- We also had difficulty identifying adaptation plans in the Devolved Administrations, although we are aware that these are under development, for example by Highland Council (more information is provided in the next chapter on case-study findings). This may be because of the different governance arrangements within devolved nations (e.g. Northern Ireland councils do not have responsibility for planning powers and Scotland has a sector-based approach), or it may be because the Devolved Administrations did not have N188 as a driver.
- With regard to social justice, it appears there is some way to go. Some LA plans did not differentiate impacts at all, and saw residents as a single group with common needs and issues relating to adaptation. Others referred to the vulnerability of residents only in the context of spatial vulnerability, e.g. highlighting those living in flood plains.

The current situation

As the situation changed with the abolition of NI 188 during the research period, SQW also reviewed more recent data concerning LA commitment to climate change, contained within the Green Alliance's report of October 2011, *Is localism delivering for climate change?*

The research found that, for approximately two-thirds (65 per cent) of responding LAs, climate change is less of a priority than previously. Thirty-seven per cent were deprioritising climate change or stated that it had never been a priority, 28 per cent were streamlining their focus to reducing emissions on their estate, while shunning wider environmental issues. The remaining 35 per cent stayed firm in their commitment to climate change and considered that localism provided an opportunity to increase their efforts.

The study also found that local authorities and civil society organisations were currently experiencing a 'partnership vacuum' and that partnerships are considered essential for tackling climate change due to the multiplicity of interests involved and collaborative working required. In addition, the report states: 'Civil society perceptions that local authorities are turning inwards underline the evidence of local authorities narrowing their work on climate change to an internal focus or ceasing it altogether.'

The study findings and analysis are not, however, wholly negative. Several relevant areas of encouraging local progress are highlighted, specifically:

- The refreshed Nottingham Declaration provides 'a mechanism for councils to demonstrate their commitment to continued action on climate change' and enables them 'to sign up to locally appropriate targets and goals' (Department of Energy and Climate Change and LGG, 2011).

- Local enterprise partnerships (LEPs) and enterprise zones have been established. While their exclusive aim is to secure local growth, 29 of the LEPs include low carbon/climate change within their objectives, recognising the economic opportunities these agendas can bring. There is less evidence of climate change adaptation, which is probably perceived as having less of a role in driving economic growth than development of the renewables sector.
- Local Nature Partnerships (LNPs) were announced in June 2011 and present opportunities to ensure that a higher value is placed on the natural environment, including the provision of green infrastructure, which can assist with adaptation to future climate change risks such as flooding and higher temperatures. These partnerships are also intended to ensure that the natural environment is better valued and harnessed in order to maximise economic and social wellbeing outcomes, with a clear focus on adaptation.
- Neighbourhood plans provide an opportunity to progress climate change adaptation at a very local level. The research reviewed the LAs at the forefront of neighbourhood planning and found that many prioritise environmental issues and are developing energy and sustainability plans.

A key finding was that the reduction in climate change priority within LAs and difficulties in promoting this agenda are more a result of public-sector funding cuts than localism. The important issue is how LAs have reacted to these cuts. Cutting climate change actions, responsibilities and resources may appear to be a quick 'win' in terms of addressing budget deficits, but some LAs are assessing the opportunities brought by the need to address climate change in ways which will take advantage of revenue opportunities and address long-term risks and costs. This perspective depends very much on corporate leadership and, to a large degree, on individuals with the tenacity to commit to long-term objectives when the pressure is only for immediate cuts.

With regard to the above, the economics of just adaptation has an important role in contributing towards and justifying adaptation planning. Just adaptation requires resources in terms of staff time and for the development and installation of physical measures; this needs to be balanced with the costs that could result from a failure to adapt. Stern-type arguments can be used to highlight the negative Gross Value Added (GVA) impacts that may result if climate change adaptation responses are not developed, and many LAs have commissioned their own 'mini-Stern' reports, which enhance the local evidence base as well as harnessing greater corporate commitment to the agenda. For example, the total economic costs of the summer 2007 floods in England were estimated to be around £3.2 billion (Environment Agency, 2010) within a possible range of between £2.5 billion and £3.8 billion. Overall, about two thirds (£2.12 billion) of total economic costs were incurred by households and businesses. Impacts on public health (including school education) accounted for about 9 per cent (£287 million) of economic costs. Interestingly, £260 million of this comprises the cost of mental-health concerns associated with flooding, based on estimates of people's willingness to pay to avoid exposure to the distress it causes.

Summary

This chapter has provided an overview of LA adaptation planning across the UK at March 2011, with results focusing on England due to the absence of plans in the Devolved Administrations. The findings revealed a range and variety of

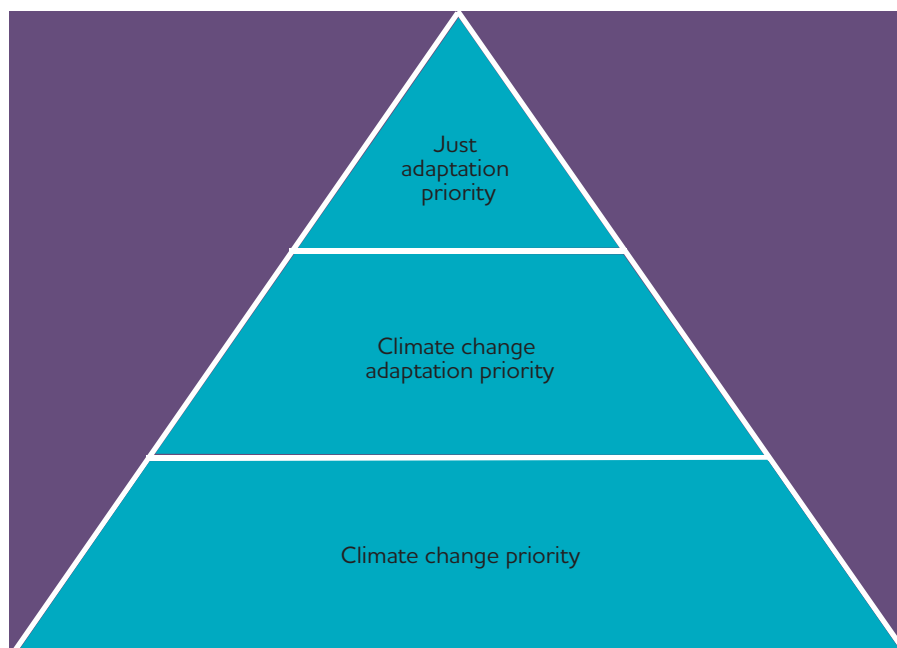
The economics of just adaptation has an important role in justifying adaptation planning.

plans in terms of content, detail and level of progress, in part due to the lack of prescription in the guidance. Public-sector funding cuts have led to a reduction in priority given to climate change adaptation, as revealed by a recent report produced by the Green Alliance. It is possible that the removal of the national indicator NI 188 has contributed to this lower profile.

Social justice was not evident as a priority in adaptation planning and was certainly not an embedded characteristic. Figure 7, below, shows a three-fold classification: the LAs for which climate change remains a priority (35 per cent of the total, according to the Green Alliance research); those for which climate change adaptation is a priority; and those where just adaptation is prioritised. While we have not attempted to estimate the proportions at the upper levels of the pyramid, these are undoubtedly much lower than the 35 per cent that still consider climate change a priority. As such, there is considerable progress to be made before just adaptation is demonstrably embedded in LA planning and practice.

Increasing the number of LAs and other organisations at the peak of the pyramid can only be achieved through increasing education and awareness and providing tools to facilitate just adaptation. Public-sector funding cuts are likely to continue, and solutions other than additional public funding need to be investigated to ensure that just adaptation is given more priority. More collaborative working with other relevant agencies, such as health and housing organisations, emergency services and civil society organisations, will be needed, including pooling resources and joint planning. There will also need to be work to help other service providers and community organisations to understand the relevance of climate change to their overall work. In addition, the Green Alliance research identified a number of key opportunities that could be exploited (along with others) to increase opportunities to progress just adaptation. These include: the refreshed Nottingham Declaration; new revenue streams; the duty to cooperate via the Localism Bill; LNPs; and neighbourhood planning. We suggest that in addition to these, the Community Infrastructure

Figure 7: Hierarchy of LA priorities for climate change, adaptation and just adaptation



Source: SQW, 2011

Levy provides an opportunity for investment in adaptation responses such as flood defences and green infrastructure.

Finally, economic costs need to be taken into account in promoting and undertaking adaptation planning. Mini-Stern reports at the LA level provide a good evidence base; extending these to give more consideration to the costs and benefits of the quality of life could increase commitment to just adaptation.

5 JUST ADAPTATION IN PRACTICE

This chapter largely focuses on the findings from three case studies – of Highland, Islington and York – but also provides a wider perspective of just adaptation in practice from a review of a range of case studies (commissioned, for instance, by UKCIP) across the UK.

Case-study purpose and methodology

The purpose of the case studies was to assess more closely how climate change adaptation planning and implementation takes social justice into account. They look at three very different areas that are subject to differing climate change impacts, and are at different stages in their adaptation planning. They were not intended to be representative of all LA areas, but to investigate examples of adaptation practice in different settings, and to look at different understandings of social justice and at how it might be applied and incorporated in local strategic approaches.

The case studies were selected by developing and agreeing a set of criteria with the PAG. The criteria included: type of climate change impact, levels of deprivation, urban/rural location, progress with climate change adaptation planning and the degree to which social justice had been taken into account in adaptation planning. It was agreed that at least one example should be from a Devolved Administration. The initial long-list was drawn from areas with adaptation plans in place, as it was felt that there would not be much to report from areas at an earlier planning stage. The fact that the case-study areas are more advanced than average in their adaptation planning and implementation should be taken into account in considering the conclusions drawn from this exercise. In addition, all three areas have unitary authorities, and it should be easier to take a more integrated approach where all LA functions are being delivered by one organisation. Integration may prove more challenging in a two-tier system, particularly with the separation of social services and planning/housing functions.

A mixed method approach was adopted for the three case studies, using the following research techniques:

- a review of background literature, e.g. local climate change strategy, adaptation plan, community strategy, local development plan documents
- consultations with key stakeholders, including LA climate change/sustainability, housing and planning officers, primary care trust representatives, voluntary and community organisation representatives
- a focus group with advocacy groups representing vulnerable communities

Challenges encountered

Although all the stakeholders contacted were interested in just adaptation and keen to see it promoted and implemented, securing their commitment to take part (particularly in focus groups) was difficult. Work pressures stemming from funding cuts (impacting on both public and voluntary/community organisations) were cited as a reason against participating: urgent day-to-day matters took priority over the longer term agenda of climate change. As a result, only York held a focus group with representatives from vulnerable groups; in Islington, this was replaced by visits to projects supported by the Climate Change Adaptation Fund, and in Highland, by feedback from a series of community workshops.

Key findings

Common messages from the case studies can be used to develop lessons for other areas. The findings from each of the case studies are reported against the following thematic headings:

- climate change context
- assessing the risks
- climate change adaptation planning and activities
- mainstreaming socially just adaptation
- learning and sharing good practice
- conclusions

Climate change context

Table 3 summarises the immediate and projected climate impacts identified for the three case study areas and local geographic and socio-economic characteristics. It shows that while climate change projections are broadly the same across each of the three areas, they will have differential impacts depending upon the existing climate, local geography and local conditions. These different circumstances and impacts need to be taken into account in planning for and implementing adaptation responses.

Table 3: Case-study climate change impacts and population characteristics

	York	Highland	Islington
Key climate change impacts – now and projected*	<p>Predominant climate impact and basis for inclusion: fluvial flooding. Pluvial flooding also likely to be an issue.</p> <p>Future climate change projections:</p> <ul style="list-style-type: none"> ● increase in summer temperature ● decrease in summer rainfall ● increase in winter temperature ● increase in winter rainfall ● increase in storminess ● increase in rainfall intensity 	<p>Predominant climate impact and basis for inclusion: coastal flooding.</p> <p>Future climate change projections:</p> <ul style="list-style-type: none"> ● increase in summer temperature ● increase in winter temperature ● decrease in summer rainfall ● increase in winter rainfall ● rise in sea levels of about 40cm by the end of the century 	<p>Predominant climate impact and basis for inclusion: heat waves and the Urban Heat Island effect.</p> <p>Future climate change projections:</p> <ul style="list-style-type: none"> ● increase in summer temperature ● decrease in summer rainfall ● increase in winter temperature ● increase in winter rainfall ● increase of extreme weather
	Key characteristics – population geography	<p>Population characteristics</p> <p>Majority of the population within urban area, with remainder in surrounding villages and rural areas. Range of communities in terms of deprivation – overall, above national average. Imbalanced population with a large proportion of either old or young and less in the middle.</p> <p>Geography</p> <p>Prone to flooding from the rivers Ouse, Derwent and Foss. Has an extensive (and mostly effective) network of flood defences. Serious flooding in 2000, 2007 and 2008.</p>	<p>Population characteristics</p> <p>Rural location with some very remote settlements at considerable distance from amenities. Range of communities in terms of deprivation, with high levels in some of the more remote areas. High proportion of older people – by 2031, it is projected that 16.5% of the population will be over 75%.</p> <p>Geography</p> <p>Long coastline, vulnerable to extreme weather conditions, such as storms and cold weather. Both coastal and rural-facing issues of coastal and fluvial flooding hazards (and landslides); heat wave impacts in the past have resulted in fires on rural land.</p>

Source: SQW

*Projections were sourced from UKCIP and LCLIPs.

Assessing the risks

Each of the case study LAs appreciated the importance of having risks robustly assessed in order to provide an evidence base for the development of any future adaptation planning and to inform the development of practice. It was

also recognised that understanding current risks and weather patterns was essential for helping plan emergency responses. The types of activities that have been undertaken to assess risks include CCRA, LCLIPs and strategic flood risk assessments. However, there was less evidence of future risks being built into current plans.

The York and North Yorkshire Sustainability Officers Group secured Regional Improvement and Efficiency Partnership funding to employ two climate risk assessment officers to produce a CCRA for the city, built on the previously developed LCLIP produced in 2010. The CCRA was informed by interviews and workshops with officers from a range of council departments, including City Strategy (covering physical infrastructure services), Communities and Neighbourhoods, and Health and Social Care. The city's *Strategic Flood Risk Assessment*, published in 2010, identified certain types of development (rather than communities) as being vulnerable to climate change. These are categorised as highly vulnerable (covering locations such as basement dwellings, caravans, mobile homes and park homes) and more vulnerable (hospitals, residential institutions such as care homes, student accommodation, prisons and non-residential developments used for health services, such as nurseries and educational establishments).

Highland Council also produced an LCLIP in 2011 (informed by weather events reported in the media from 2001 to 2008), which was resourced, in part, by student placements to address LA resource constraints. Cold winter weather was identified as the predominant hazard in Highland over the last decade. Highland Council's climate change adaptation strategy includes an action plan, which contains actions for different services and information on progress to date. An agreed action was to map the opportunities and threats of climate impacts in Highland and identify the most vulnerable individuals, communities and sectors. Highland Council is also involved in an EU INTERREG IVB Northern Periphery Programme project, Clim-ATIC (Climate Change – Adapting to the Impacts, by Communities in Northern Peripheral Regions), which focuses more positively on opportunities, particularly for tourism, resulting from climate change.

Community-focused work in Highland also involved individuals undertaking their own needs assessments, helping them to explore vulnerable areas of their lives, such as their homes and accessibility, and to identify what they could do to help themselves. Such an approach, rather than providing top-down solutions that may not be appropriate, helps build capacity and empowers local communities, demonstrating procedural justice in action.

Islington Council worked with NHS Islington to produce a chapter on climate change as one of the key 'Risk Factors and Wider Determinants' in the Joint Strategic Needs Assessment (JSNA) for 2010/11. Only a few such documents in the UK explicitly recognise climate change. The JSNA presents a detailed list of groups which will be particularly affected by climate change and what their existing and future needs could be, to help inform more effective and targeted service provision. It does not specify the particular actions that either the LA or the NHS should be taking forward, but it does point to the need for further exploration of the impact of climate change-related events on health, specifically mental wellbeing and mental illness.

Each of the LAs consulted (and their local partners) noted the potential to identify areas where vulnerable communities are located using geographic information systems, but were aware that vulnerability is dynamic, not permanent. In York, some agencies have lists of people who self-identify as vulnerable, e.g. utility companies, GP surgeries and social services. York Primary Care Trust is interested in obtaining more information on the spatial location of current and future climate risks, which could be compared with the known

locations of vulnerable people held by the NHS. Highland has mapping as a goal in the action plan for its climate change adaptation strategy, and Islington has identified vulnerable groups through its JSNA with the NHS and is keen on mapping vulnerable communities as far as this is possible.

Definition of vulnerable communities

Communities which are particularly vulnerable to climate change, as identified by documentation and consultations with key stakeholders in the three case-study areas, are summarised in Table 4. All three areas highlighted the following groups as being vulnerable to climate change impacts: older people, people suffering from chronic illness (physical and mental), people who are unable to adapt their behaviour, people who are over-exposed to risk, and people living in poor housing. This suggests a good understanding and recognition of social vulnerability, which goes beyond the spatial vulnerability and health focus of many of the national policies and strategies discussed in Chapter 3. Interestingly, only Islington identified children as being particularly vulnerable; all three areas highlighted older people. People living in remote rural areas were identified only in Highland, due to the geography of the area. Finally, only York identified transient communities as vulnerable, given the council's recent experience of working with travellers to develop adaptation responses.

Table 4: Identification of groups vulnerable to climate change in the three case-study areas

Vulnerable Group	York	Highland	Islington
• Older people (especially those over 75 years old), whether living on their own or in a care home	✓	✓	✓
• Children and young people who are more vulnerable to high levels of ozone and fine particles which increase in concentration with higher temperatures			✓
• People suffering from chronic and severe illness (including mental illness)	✓	✓	✓
• People who are unable to adapt their behaviour (including those with Alzheimer's disease, with a disability or bed-bound; babies and very young people)	✓	✓	✓
• Disabled people living alone	✓	✓	
• Individuals with outdoor jobs		✓	✓
• People who are over-vulnerable (e.g. living in a flood risk area, in temporary accommodation such as a caravan, in a top-floor flat (where overheating is a potential threat) or homeless)	✓	✓	✓
• People living in poor housing which is less resilient to flooding	✓	✓	✓
• People living in remote rural areas		✓	
• People for whom English is not their first language	✓		✓
• People on low incomes, with insurance risks, etc.	✓	✓	
• Transient communities such as gypsies and travellers, short-term renters.	✓		

Source: SQW, 2011

Climate change adaptation planning and activities

Before considering social justice implications, we reviewed the types of climate change adaptation planning and implementation that have been undertaken or are underway across the three areas.

Earlier in the report, we drew a distinction between adaptation responses that aim to build adaptive capacity (creating information, supportive social structures and governance that are needed as a foundation for delivering adaptation actions) and adaptation actions that help to reduce vulnerability to climate risks or explore opportunities. We consider it equally as important to identify which climate change adaptation activities are piecemeal or focused on emergencies, and which are concerned with embedding climate change adaptation planning into the mainstream.

Table 5 highlights the types of adaptation responses that were reported.

Table 5: Key adaptation response types

	Building adaptive capacity	Delivery of adaptation actions
Temporary/one-off actions	<ul style="list-style-type: none"> • Community involvement in scheme design, leading to greater local ownership of whatever response is given (all LAs) • Dedicated temporary LA Climate Change Officer (Islington) • Information/awareness-raising services including Energy Doctor and Cool-It presentations (Islington) 	<ul style="list-style-type: none"> • Demonstration projects – focus on urban greening to absorb heat (Islington) • LA Dedicated Adaptation Fund (Islington) • Emergency Flood Risk Fund in 2000 (York)
Mainstreamed activity	<ul style="list-style-type: none"> • LA climate change adaptation strategies and action plans, climate change frameworks, strategic flood risk assessments, climate change impact profiles and climate change risk assessments, local development framework core strategies directing development away from flood-risk areas, requiring sustainable drainage systems and encouraging greater tree cover (all LAs) • LA Cross-departmental Adaptation Board (Islington) • NHS & LA JSNA – impact of climate change on health; potential to include mapping of vulnerable groups (Islington) • Corporate strategies and plans such as climate change frameworks, strategic flood risk assessments, climate change impact profiles and CCRA's (all LAs) • Community Adaptation Planning (Highland) • Flood Plan for Travellers' Site (York) • Emergency planning responses to address risk of flooding in areas likely to be affected (York and Highland) 	<ul style="list-style-type: none"> • Permanent flood defences (York and Highland) • Specific individual actions related to adapting to flooding, e.g. older people's homes having sockets installed above normal height, and housing association properties with temporary bridges (York) • Action to adapt council housing to flood risk – provision of flood guards and installation of alarm systems (Highland)

Source: SQW, 2011

From the above, it is evident that significant activity is being mainstreamed in relation to building adaptive capacity, particularly in terms of strategies and plans.

We now provide further detail concerning the progress made with regard to building adaptive capacity and delivering adaptation activities.

Building adaptive capacity

Corporate policies and strategies

In terms of building adaptive capacity, a number of plans and policies were identified in York:

- The Corporate Plan, Sustainable Community Strategy, Local Development Plan Core Strategy and other planning policies and Climate Change Framework and Climate Change Action Plan all include requirements concerning climate change and adaptation, but these are largely driven by the LA's Sustainability Team. There is varying commitment to socially just adaptation, with a greater focus on property and physical vulnerability. The City of York Climate Change Plan (responding to the above risk assessment) includes a section on adaptation. However, the council is keen to engage with the local community concerning the social justice implications of climate change adaptation in order to inform the future delivery of the plan. A refreshed plan is due in 2013, which will take social justice into account.
- Since the completion of the above strategies and plans, the City of York Council has adopted, as part of its *Climate Change Framework for York*, a target to ensure that the city, by 2050, adapts communities and businesses for the likely impacts associated with climate change, which will be delivered from 2010 to 2013 through the *Climate Change Action Plan for York*. It has also incorporated tackling climate change into its corporate risk register and is now working with key officers to embed any current or future risks into relevant service-level plans. *York Climate Change Risk Assessment* recognises the impact of climate change on vulnerable groups and includes recommended adaptation responses; for example, the need for care workers and services to be able to reach vulnerable people in their own homes.
- NHS North Yorkshire and York's Sustainable Development Plan includes a focus on addressing the health impacts of climate change. The Primary Care Trust's climate change commitments in relation to addressing impacts and emergency responses are focused towards vulnerable people, particularly older people, people with disabilities and those with chronic illnesses.
- York's *Local Development Plan Core Strategy* includes supportive policies such as directing development away from flood-risk areas, promoting green infrastructure and requiring the use of sustainable urban drainage systems and setting targets concerning run-off.

Highland has the following policies and strategies in place:

- Adapting to Climate Change 2010, which provides a framework for adaptation responses for Highland Council, is a high-level strategic plan, with five different categories for actions. With regard to social justice, the plan does not refer to differential impacts between different groups or the distribution of impacts, but it does refer to vulnerability, equality/equity and community engagement (e.g. there is a good discussion of socio-economic impacts of climate change based on research undertaken by the Scotland and Northern Ireland Forum for Environmental Research (SNIFFER)). As part of the SNIFFER research, we are also aware of ongoing research with local vulnerable communities, using specifically designed community engagement tools.

- Highland Council has created a long-term coastal development plan, which takes account of climate change impacts. Consultees expected proposals from developers and decisions for future development on the coast to start to take climate change into account as a result of this plan. This should result in fewer separate proposals for dealing with the threat of the encroaching sea for those places at risk.
- Highland's Climate Change Strategy includes requirements to develop a community adaptation pilot process to encourage local communities to build resilience to the effects of climate change, and issue guidance to ensure that vulnerable people are protected. In addition to these corporate approaches, there is a current pilot project, considered an example of particularly good practice, which highlights procedural justice in action – this is summarised in the box below.

Gairloch Community Pilot, Highland

Gairloch is a rural community with a high number of older people. The community is very isolated – the nearest hospital is around 70 miles away, for instance – so many of the residents feel vulnerable. With the help of the council, community members are exploring how climate change will affect them. Highland Council is encouraging the community of Gairloch to set up working groups, e.g. a commerce group, to look at existing structures and plans and at how these might incorporate adaptation. It is a step-by-step approach to exploring the issues and includes activities to assess the vulnerability of different sections of the community. Adaptation Scotland is also involved in the pilot.⁷ The aim of the project was to support and encourage the communities of Gairloch and Loch Ewe to create a 'community-led climate change adaptation action plan' (Highland Council, 2010b). The intended outcomes of the pilot include: to raise awareness and develop individual actions to meet specific needs; to increase Highland Council's knowledge, e.g. on impacts of climate change on rural communities; and to develop a tool kit which could later be used by other communities. If successful, the project will be extended to other areas in the Highlands. The Highland Environmental Forum, a sub-group of the Highland Community Planning Partnership, has signed a joint regional declaration to start to address climate impacts. A key priority is the effect of climate change on land use.

Source: SQW, 2011

Islington's relevant corporate policies and strategies:

- Islington's climate change adaptation strategy provides a framework for adaptation work at the Council. The current strategy states that it will be comprehensively updated every three years and that performance against it will be reviewed twice a year. An equalities impact assessment sits alongside the strategy. The adaptation strategy is complemented by the *Adaptation Action Plan 2011–14*, which includes a specific action to 'target vulnerable groups and the wider community'.
- The Local Development Plan Core Strategy also has the objective of preparing for climate change and coping with the effects. This includes a requirement for applications for all new developments to demonstrate that they are considering climate change in the design. Developments should minimise overheating, e.g. by orientating buildings and using solar shading

to minimise solar gain, by using natural ventilation, and by incorporating sustainable urban drainage systems. The Council's open space and green infrastructure strategy is to be brought forward as a supplementary planning document.

- The *Adaptation Action Plan 2011–14* also contains five planned actions to try to help ensure that the most vulnerable groups in Islington are protected from the impacts of climate change. Some are short-term; for example, a one-off health intervention project through the Energy Doctor resource. Others are to be completed over a longer timescale, such as the collection of qualitative data on the major impacts on vulnerable groups.

Information provision

Information provision is a key element of building climate change adaptive capacity in terms of education and raising awareness among practitioners and the general public. There are numerous activities being undertaken across the three areas, but several common messages were highlighted during the case-study research as being crucial to ensuring effective communication and conveying the correct messages. These are summarised below:

- A mix of different media approaches is important for 'getting the message across', recognising that older people, in particular, may not have access to the internet or mobile phones (so there will always be a need for printed media) – and climate impacts can result in power cuts. Multiple hits from different media sources may maximise impact, but it is also important to ensure that the message is managed and the tone is appropriate. Some examples were provided of local people being scared by messages concerning the threat of flooding, which had the adverse effect of making local communities think that flooding is inevitable, resulting in reduced personal responsibility to 'do their bit'.
- Practitioners were aware that more needs to be done than simply assuming that 'adaptation is provided for all' without taking into account how adaptation activities may impact on/be received by different groups. While processes are in place to provide information concerning weather emergencies, anecdotal evidence from individuals (in York) of lack of support/advice has indicated that individuals have been badly affected by climate change/severe weather events. Tailored solutions need to be developed for specific communities.
- Some 'harder-to reach' communities, such as older people, disabled people living alone and transient communities, are likely to respond better to information provided by trusted service providers (public and voluntary/community sector) rather than blanket leafleting or cold calling, which may be ignored. Front-line workers such as care providers, Age UK, housing officers and Meals on Wheels should all be able to provide information on climate change and severe weather to ensure that communities are not negatively impacted by flooding or heat waves and are aware of actions they themselves can take to adapt to the changing climate. While it could easily be overlooked, it is also important to address behaviour change for those working with vulnerable people, who have a direct impact on their immediate environment. A recent study by Lancaster University on the operational practice of care homes found that there was still a common discourse that 'old means cold', and that the 'fear of the cold' was embedded in practice, even in high temperatures. 'There tends to be an automatic assumption to keep the place hot, whereas this can sometimes be particularly damaging to health in the summer' (Community health worker, Islington Council).

- Case study consultees also highlighted the importance of service providers being aware of other related services, and referring between themselves.
- Across the three case studies there were some examples of particularly innovative information provision/awareness raising of climate change issues which could be considered as examples of good practice for action elsewhere. These are illustrated below:

Referral Services, York

Age UK's First Call 50+ provides a single number that older people can contact to obtain referrals to a number of services, including fire safety and advice concerning severe weather.

The Hotspots campaign involves the council working with local advocacy organisations and the NHS to identify vulnerable people and ensure they have access to appropriate services and advice related to energy efficiency, benefit 'health' checks and home fire safety checks.

Highlands & Islands Equality Forum Roadshow 2011

In February and March 2011, a series of workshops was delivered to raise awareness among organisations of the implications of climate change, and especially to highlight the issues relevant to vulnerable groups for the Highlands & Islands Equity Forum (HIEF) and the Scottish Council for Voluntary Organisations (SCVO) so that they can better represent these groups.

Islington Council's 'Energy Doctor' programme

This programme had a primary focus on fuel poverty and winter warmth. However, in summer 2011, it was extended to provide home-based (mostly behavioural) advice on overheating.⁸ The programme of summertime Energy Doctor home visits was (like the winter programme) focused on residential estates with a high level of deprivation, and the service was prioritised – in line with council-wide priorities – for delivery to vulnerable people, notably those over 75 years old, those with cardiovascular and respiratory diseases, and low-income families with children under 5 years old. The very young and the very old tend to have the most difficulty with thermo-regulation. Many of the clients are not just vulnerable, but are also easily confused and find it hard to remember guidance/advice provided.

Cool-It presentations, Islington

Islington Council developed a presentation pack and, in 2011, a total of four sessions were delivered as a pilot – two to members of a group of heart and stroke sufferers, and two to groups of elderly people. The sessions covered building issues (including orientation, ventilation, windows, solar reduction and air flow), different products and practical interventions (such as thermal linings and fans), and health implications (such as the importance of hydration, what type of clothing to wear, etc.).

Source: SQW, 2011

Tools to support climate change adaptation

The use of tools across the case-study areas was investigated to understand what approaches were being used and how effective they were.

- The City of York Council intends to use its CCRA to identify required actions and prioritise these to decide which should be progressed first. An awareness campaign will then be rolled out across the city to promote tools, such as those developed by UKCIP, for use by partnerships and advocacy organisations within the local strategic partnership and to strengthen and further develop appropriate adaptation responses.
- The key tool used by Highland Council is the pilot community planning approach at Gairloch and Loch Ewe detailed in the box on p. 46. The intended outcomes of the pilot were to raise awareness and develop individual actions to meet specific needs, increase Highland Council's knowledge concerning the impacts of climate change on rural communities, and develop a tool kit, which could later be used by other communities. If successful, the pilot will be extended to other areas of the Highlands.
- Islington Council has put in place a range of tools to help ensure that adaptation responses are designed and delivered, and that they clearly recognise the social justice considerations and implications of their actions. These consist of:
 - a cross-departmental adaptation board, used to disseminate messages about adaptation measures on a regular basis and ensure that adaptation issues were taken into consideration throughout the LA
 - Adaptation Strategy Equalities Impact Assessment, which specifically investigated the impacts for those that live in poverty
 - Islington Joint Strategic Needs Assessment
 - good practice guides, provided online and in hard copy to give information on sustainable design for planners, developers and interested residents or businesses. These include *Green Roofs and Walls*, *Sustainable Drainage Systems*, *Climate Change Adaptation* and *Biodiversity in the Built Environment*.

Adaptation Activities

The main adaptation activities that have been undertaken in York and Highland are emergency responses developed for flooding. These include the development of cross-departmental and cross-organisation emergency procedures (such as evacuating communities), and provision of flood defences, floodgates and temporary bridges. Previous floods in York have also seen a number of travellers lose their homes. The James Street site is vulnerable to river flooding, in response to which the council has improved flood defences and developed a specific flood plan for the site, in conjunction with the travellers.

Excessive heat and the impacts of the Urban Heat Island effect are the key climate impacts for which adaptation responses are being developed in Islington. An 'adaptation fund' was established in 2009 (now closed) to fund demonstrations supporting adaptation and to fund highly conspicuous and easily replicable projects, as a means of raising awareness. These ranged from a 'dry planting' garden, to green roofs and walls, sustainable urban drainage systems and permeable paving. A significant amount of further work has been carried out across the borough in a wide range of categories to develop adaptation responses to climate change. This includes: installing a brise soleil (a structure used in hot climates to protect a window from the sun) on the third floor of the council's municipal offices, which on average reduces the temperature by 0.9°C; a £2m 'Greening the Grey' programme to decrease non-permeable surfaces in the borough and expand green space in order to reduce the impact of increasing temperatures; use of passive and smart technology in Highbury Grove School's improvement programme funded by 'Building Schools for the Future', to help buildings support adaptation measures

(green roofs, solar shading); changing management and planting patterns and conserving resources in the Borough's parks.

Table 5 shows evidence in all three council areas of building adaptive capacity at LA corporate level and in 'physical' service areas, and of the delivery of climate change adaptation activities. However, there is less evidence of climate change adaptation being embedded in service delivery across *all* service areas and in organisations other than the LA, particularly in those concerned more with social justice than climate change, although there is clear commitment to move towards this.

Examples provided of adaptation in service delivery, within and without LAs, include:

- NHS North Yorkshire and York's sustainable development plan, with detail on addressing the health impacts of climate change.
- City of York Council's corporate commitment to addressing climate change, with the Sustainability Team striving to ensure that adaptation planning is better embedded in corporate policy and implementation. Specific activities include the development of the CCRA, involving officers from all departments including health and social care.
- Islington's focus on embedding adaptation in council services, supported, previously by a dedicated Adaptation Officer, Adaptation Fund and the cross-department Adaptation Board; the latter was intended to ensure that adaptation issues were embedded in all departments of the council. An Equalities Impact Assessment of the Adaptation Strategy was undertaken as it was recognised that climate change would have an impact on services, resulting in changes to what these services comprise, along with changes to how they are delivered. In addition, it was recognised that impacts on services would most affect vulnerable residents, who are likely to rely heavily on the services that the council provides.
- The JSNA undertaken by the council and NHS Islington has resulted in a climate change strategy which highlights the need for further exploration of the impact on mental wellbeing of events about climate change, to be undertaken by both bodies.

Engaging vulnerable communities in the development of adaptation responses

Overall, it appears that vulnerable groups have to some degree been engaged in the development of strategic adaptation responses, for example through statutory consultation requirements in producing spatial planning policies. However, there is less evidence that operational responses have been developed in consultation with the vulnerable communities they affect. Specific exceptions include the community plan pilot in Highland (Gairloch and Loch Ewe) and the work in York with local travellers, both of which have engagement at their cornerstone and provide a template for good practice that could be adopted elsewhere. The City of York Council is keen to involve local communities, including those that are vulnerable, in refreshing its Climate Change Adaptation Plan.

In Islington, to date, there has been limited involvement of affected groups in adaptation planning. This has been deliberate, rather than an oversight – linked to both internal capacity and available timeframes. It was decided that the Adaptation Officer should focus instead on building 'resilient' council services. Community workers and the voluntary sector have been involved indirectly via applications to the Adaptation Fund and attendance at workshops on adaptation issues held within the Council's Green Living Centre, which no longer exists due to funding cuts.

Trade-offs between costs and benefits

Only one specific example illustrated the potential for mal-adaptation. This was cited by consultees in York who were concerned that the city's shortage of affordable housing and the new 'presumption in favour of sustainable development' (*National Planning Policy Framework*, DCLG, 2012) could lead to more (affordable) house-building on flood plains. The low-income individuals and families this would attract would be less able than other members of society to cope with the financial impact of flooding, for example, in terms of taking out insurance. Developers may also be less willing to invest in climate change adaptation features in affordable homes: additional investment could impact on their profit margins, which are affected by the high cost of land. The *National Planning Policy Framework* explicitly requires development to be directed away from high-risk areas, which should prevent these concerns being realised in new properties.

More widely within the JRF Climate Change and Social Justice programme, concern has been expressed regarding the mapping of vulnerable communities and how this data is communicated. In general, there are concerns that greater publicity and awareness of areas at risk of flooding could have an impact on residents' ability to access household flood insurance, which in turn could lead to falling house prices and social blight for those areas facing a particularly high risk of flooding.

Mainstreaming socially just adaptation

LAs in all three case-study areas were keen to mainstream climate change adaptation, and were aware of the importance of ensuring that this was high on corporate agendas and progressed through other departments (and organisations) taking responsibility for vulnerable communities, as well as those leading on climate change and sustainability matters. However, it was difficult to secure stakeholder engagement due to time pressures resulting from funding cuts, which have also contributed to a falling profile for climate change issues. The change in circumstances is exemplified by the situation in Islington.

Until recently, Islington was one of the leading boroughs in London for climate change adaptation policy and practice, with an impressive range of measures in place. Some of these remain, but the recent shift in political focus has decreased the commitment to and effectiveness of climate change adaptation work within the borough. However, the Islington Climate Change Adaptation Strategy, 2009–11 does include a commitment to analyse the likely impacts of climate change and associated risks in every council service over a ten-year period. Internally, while there has been a significant level of adaptation activity within the borough, it was felt that two years' work through a dedicated officer was not enough for the agenda to become firmly embedded; much time had to be spent explaining adaptation issues, both internally and to partner organisations. However, the LA places significant emphasis on social justice and distributional equity, acknowledging Islington's high income and wealth differentials.

The Sustainable Development Officer for Highland Council is in charge of implementing Scotland's Climate Change Act 2009, including climate change adaptation. Ultimately, however, following Scotland's climate change policy, the aim is to 'mainstream' climate change within the Council. This would make each of the seven services responsible for integrating adaptation into service plans. The Sustainable Development Officer currently facilitates the process, and the fact that the role sits within the Policy and Performance Unit of the Chief Executive's service has helped ensure that the different service departments take adaptation seriously. This senior management buy-in has had a positive impact in helping drive the agenda forward. The intention is to 'screen'

decision-making through the prism of climate change adaptation, meaning every single service paper/report/proposal has to consider its likely impact on adaptation. As a result, there is evidence of service-level plans starting to take climate change adaptation into account. However, ensuring this commitment is taken forward is challenging given current funding constraints:

The elected members in the council are supportive, so now there is the strength and justification to implement climate change adaptation. At the same time, funding constraints mean that although the Council has greater powers, it does not have sufficient funding to implement adaptation (e.g. flood alleviation). Capital funding that is available is either being spent on projects that have already been promised or on statutory projects. There is no money for additional projects, and this situation is expected to get worse in the next couple of years.

– Sustainable Development Officer, Highland Council, September 2011

The City of York Council is committed to the promotion of climate change adaptation and has been working with its local strategic partnership (LSP) to progress adaptation planning on a city-wide basis, still working to NI 188 guidelines. However, public funding cuts have led to a number of council officers being made redundant; together with the restructuring of the LSP, this has meant it is difficult to gain support for longer term agendas. Two regionally funded officers were seconded to the council to assist with CCRA work due to a lack of resources, but these positions are no longer funded. The predominant corporate priority is economic growth: Stern-type arguments on the potential for increased GVA, with early investment leading to long-term savings, are therefore promoted to ensure that climate change adaptation continues to be supported.

A further challenge to mainstreaming adaptation in each area and more widely, is the fact that it remains a misunderstood term, even among professionals and practitioners. Several professionals interviewed were keen to discuss addressing fuel poverty and maximising energy efficiency and renewable energy deployment. While important in terms of climate change, these are all mitigating rather than adaptive activities. There is a clear need for further education and awareness-raising to ensure understanding and commitment to the climate change adaptation agenda and its potential impact on social justice.

Learning and sharing good practice

Consultees from each case-study area were keen to learn from the activities of others and to promote their own learning. The City of York is an active player on the Yorkshire and Humber CCP, which has a strong focus on sharing best practice; York is keen to learn from the experiences of Kirklees (community flood plans) and Leeds, which are more advanced with this agenda. York also works very closely with the Environment Agency on flood risk assessment, planning and responses. Highland intends to spread its approach to community planning, piloted at Gairloch, across the district to other areas; and Islington's work towards mainstreaming just adaptation involved a demonstration designed to share good practice.

Chapter 4 discussed the evident variation in LA adaptation planning across the UK: greater sharing of good practice and knowledge transfer should help those further down the learning curve to build adaptive capacity and deliver adaptation activities which take into account the implications for social justice.

Conclusions

All three local authorities and other local bodies in Highland, Islington and York take their climate change adaptation responsibilities seriously and are keen to ensure that social justice implications are taken into account. Unsurprisingly, as evidenced by Islington Council, just adaptation responses have a higher profile and have gained greater commitment where LAs and other organisations give priority to climate change and equalities agendas.

Building adaptive capacity and embedding this in mainstream activities is well developed, particularly in plans and strategies such as Local Development Framework Core Strategies, Climate Change Risk Assessments, and Adaptation Plans; there is also some evidence of follow-up action. However, these processes still tend to be led by climate change/sustainability departments. There is less evidence that awareness of climate change adaptation is built into the plans and activities of those working with vulnerable communities such as housing departments, health and social care organisations, and voluntary and community-sector delivery organisations. The three case-study LAs are all working towards embedding adaptation across services; Highland now requires all formal council papers to consider their impact on adaptation. There is a need to keep joining up initiatives and adaptation planning through the mainstreaming agenda, especially with departments such as Social Care which work with many more individually vulnerable groups. We found that public-sector funding cuts have impacted on the priority given to climate change adaptation. If less importance is attached to climate change issues per se, it is likely, as Chapter 4 details, that socially just climate change adaptation will become even less of a priority. Longer-term and future-facing adaptation activities, are harder to understand than short-term emergency responses, and with more limited resources, it is proving difficult to prioritise activities and plans that do not have an immediate impact.

To ensure social justice is properly taken into account, vulnerable communities need targeted, not blanket, responses. Trusted service delivery and advocacy organisations are best placed to engage and inform vulnerable groups, but may also need to make connections in their own work to climate change concerns. The involvement of vulnerable groups and their representative bodies in planning activities is essential for achieving ownership and ensuring the agenda is taken seriously. The community-planning pilot in Gairloch and Loch Ewe provides a good example of this in action. Community adaptation plans need to be further developed and learning shared with other communities and authorities at all levels.

Technical solutions such as geographic information systems can lead to better targeting of areas in 'spatial risk'; all three case-study LAs were interested in mapping the overlay of physical and social vulnerability. Approaches that use social vulnerability mapping can be combined with local data and knowledge to support service-planning and are a way to facilitate discussion about the importance of considering and engaging with social vulnerability, rather than simply looking at numbers of properties at risk. However, it is important to be aware of disadvantages that can result from mapping. The potential to blight neighbourhoods, for example, if the data affects access to insurance and housing mobility should be considered, as well as the issues of changing vulnerability over time and data protection issues that can result from identifying specific vulnerable individuals.

Climate change adaptation has a high profile within Defra and the Devolved Administrations, particularly following the publication of the *UK Climate Change Risk Assessment* in January 2012, yet clear challenges are presented at local level. Public funding cuts have led to priorities being reduced to immediate

The three case-study LAs are all working towards embedding adaptation across services.

To achieve greater commitment, LAs and other local bodies should use the language of community risk and resilience.

issues rather than long-term concerns such as climate change. In addition, with the introduction of localism there has been a major shift in responsibilities. At national level, the risks to vulnerable groups in the climate change context are starting to gain recognition, but at the local level this process is still only in its infancy. More work needs to be done nationally and locally to share good practice and encourage commitment and action; national objectives cannot be achieved without local capacity to deliver.

In order to achieve greater commitment to the agenda, LAs and other local bodies should use the language of community risk and resilience. Stern's proposals and messages hold the potential for immediate cost savings and longer-term cost efficiency gains, too. A further message, which was highlighted at a JRF Climate Change and Social Justice Seminar in Wales in October 2011, is the need to recognise climate change as a moral and ethical issue; this should achieve greater resonance at all layers of governance.

It is important also to consider the roles of other authorities and agencies. Over the next few months, regional climate change partnerships (CCPs) will be funded by Defra to work with the Environment Agency to identify climate change priorities for each of the English regions, as a result of the Environment Agency's new role as Defra's principal partner in delivering the government's climate change adaptation programme. It is possible that, through this route, the Environment Agency will look further into issues of community resilience and the climate change adaptation responses focused on vulnerable communities. However, the work programme and priorities for CCPs will be very much determined by the regional partnerships.

The practice on the ground, when linked back to the social justice principles identified in Chapter 2, reveals that specific areas are more embedded than others with elements of social justice:

- Future climate change impact planning is evident through mechanisms such as LCLIPs.
- There is a reasonable understanding and identification of vulnerability, although practical action tends to focus on those who are spatially vulnerable or vulnerable for health reasons.
- Community involvement is most evident in Highland through the pilot approach to community adaptation planning.
- Responses tend to focus on building adaptive capacity rather than action; although there are some good examples of practical activity.
- There is limited awareness of trade-offs and the distribution of costs and benefits and how these can impact on vulnerable communities.
- A consideration of options has been built into adaptation planning, but this has not focused on outcomes for vulnerable communities.

Wider adaptation in practice

Appendix IV contains a detailed typology of adaptation responses, the potential social justice implications (both positive and negative) of each, suggested measures to ensure that the responses are just, and examples of good practice. The typology reveals a broad range of approaches for building adaptive capacity (risk assessment, spatial planning, emergency planning, information provision and climate change adaptation tools) and delivering adaptation activity (flood defences, urban greening, building adaptation, community-run initiatives and service delivery). Ensuring that such approaches take full account of and properly address social justice implications is crucial

and can best be achieved through a mixture of top-down strategies which take social justice issues into account, and of bottom-up activities adopted through a community-centred approach. While it is possible to draw together key principles that can provide a framework for undertaking just adaptation, it is also evident that there cannot be a single blueprint solution. Just adaptation is context specific and tailored solutions should be developed appropriate to the specific localities, to take account of their particular projected climate change impacts and community needs and opportunities.

In assessing need/risk with regard to future climate change implications and developing responses, vulnerable communities (including those who are socially vulnerable) need to be identified at an early stage and involved in all stages of planning and delivery. This can be achieved either directly or through voluntary/community organisations. The processes used to identify communities' needs should be reviewed frequently, as circumstances and representative groups will often change.

Strategic approaches such as plans, strategies and spatial plans must ensure an inclusive approach to consultation. Those responsible for information provision, such as the Environment Agency, must be aware of the needs of their target audience, including vulnerable communities. They must ensure that information is disseminated in an appropriate (not scaremongering) manner, and through a range of media in different languages, according to the make-up of the local community.

Socially just climate change adaptation planning should take higher priority at the LA level and give more consideration to the implications for service users and changing needs and vulnerabilities. For instance, a greater focus could be placed on climate change adaptation through neighbourhood management and community development, to prepare for potential situations and events, such as a flood.

Examples have been identified that can be adopted elsewhere to optimise just adaptation. LAs need an automatic process for considering climate change adaptation; screening all LA decisions/proposals/reports through a climate change adaptation filter could provide such a route. (Appendix III provides a list of suggested plans and strategies that could be 'just adaptation proofed'.) This approach is currently being implemented in a number of LAs including Hampshire Council and Highland Council.

It is evident from the table in Appendix II that multiple agencies have a role in climate change adaptation planning and implementation at the LA level and that there is a need for clarity of roles and responsibilities and collaborative working. This would maximise efficiency, avoid duplication and ensure greater clarity, particularly to the public and vulnerable communities. This is of crucial importance for emergency planning, as revealed by the reviews into the 2007 floods and case-study evidence, but also needs embedding in longer-term preventative work of other services. Such collaborative working should also include the sharing of information and referral between agencies.

The typology includes a consideration of various 'tools' that can be used to assist with the development of just adaptation responses. Appendix V includes a more detailed review of tools and suggests that, given that there are so many approaches already established, it would be helpful to refine existing tools to ensure they encourage just adaptation and incorporate the issues in emerging approaches such as Climate Local. If older tools are superseded by new developments then it is essential that just adaptation principles are embedded, in order to direct future planning and action.

Multiple agencies have a role and there is a need for clarity of roles and responsibilities and collaborative working.

Summary

This chapter provides an overview of the three case studies conducted to examine just responses to adaptation at the local level, and sets out a detailed account of the main findings. Concluding comments show that each of the three areas has a good understanding of and commitment to just adaptation, but delivery and mainstreaming has proved challenging, particularly within the current climate of public-sector funding cuts. The three areas cannot be considered representative of all LA areas across the UK, but they were selected to provide examples of different socio-economic and geographical contexts where some progress has been made towards just adaptation. We believe they are further advanced in this area than the majority of LAs, and that the issues highlighted, in terms of lack of priority and funding, are likely to be felt more keenly elsewhere.

A wider review of adaptation practice was also undertaken; the resulting typology of adaptation responses and their social justice implications is set out in Appendix IV. Three key points emerged from this exercise: (i) the importance of context (as revealed by the sheer range of responses currently being developed) – there can be no standard blueprint for action; (ii) the importance of first identifying and second involving vulnerable communities at all stages of adaptation planning and practice; and (iii) that good practice examples are evident across the UK but should be better promoted and shared with other LAs and local partners to aid knowledge transfer and shared learning.

6 CONCLUSIONS AND RECOMMENDATIONS

This final chapter provides a summary of the overall conclusions and recommendations. These are directed towards the target audience for the study – essentially local practitioners with responsibility for climate change adaptation and ensuring social justice, and UK and national government departments.

Just adaptation is complex

Terminology presents difficulties, as 'climate change adaptation' is not currently a widely understood term (often confused with 'mitigation', even by professionals) and 'just adaptation' even less so. It became evident that even within recent Defra publications, 'social justice and social vulnerability' tends to be narrowly interpreted as related to spatial vulnerability (e.g. of people living in flood-risk areas) and personal health issues (such as older people being more at risk of increased temperatures), rather than fully embracing its wider meaning in relation to people's ability to cope with climate change and the effects of distributive and procedural justice issues.

Recommendation 1: The need for social justice implications to be taken into account in climate change adaptation planning should be communicated at all levels from the UK Government and Devolved Administrations through LAs and other local bodies down to local communities. The National Adaptation Programme provides a real opportunity to progress this agenda.

Recommendation 2: Professionals and practitioners concerned with climate change and social justice need to be fully aware of climate change adaptation and how it differs from climate change mitigation. Education at these levels is essential before the wider issue of raising awareness with the general public and vulnerable communities is tackled.

In essence, just adaptation is a complex concept and one which will need time to be embedded into policy and practice at all levels. Climate change adaptation is more difficult to implement and measure than mitigation because it has no specific (accepted) associated metrics or targets to work towards. Similarly, adaptation can never be completed; it is a continuous, iterative process requiring on-going refinements to respond to climate change impacts (current and projected). Ensuring that adaptation is just in both distributive and procedural terms adds to the complexity. While procedural justice is relatively straightforward to understand and is largely accepted in public policy and practice, distributive justice is complex. Unintended differential impacts can result for vulnerable communities if adaptation is not planned with a full understanding of their (changing) needs and opportunities.

Taking account of social justice in policy and practice

The recently published UK CCRA and planned publication of the first UK National Adaptation Programme later this year are evidence that, within the UK Government, climate change adaptation is prioritised. This national priority, however, is not well reflected at the local level due to public-sector funding cuts and the drive for LAs and voluntary and community organisations to focus their resources on immediate concerns rather than long-term risks.

As climate change as a whole has decreased in priority and adaptation is generally seen as the 'poor relation' to mitigation, it is likely that far fewer than the 35 per cent of LAs identified as still being committed to climate change (Green Alliance, 2011), are committed to just adaptation. If this is the case for LA departments with responsibility for climate change, then it is even less likely that organisations with more of a social justice focus, such as voluntary and community organisations, will have the resources or capacity to add climate change adaptation planning to their current responsibilities.

Yet, in England particularly, the introduction of the Localism Act 2011 and the *National Planning Policy Framework* has placed more onus at the LA level to take forward climate change adaptation, all the while reconciling this with other at least partly conflicting priorities and limited resources. Simply put, national objectives for just climate change adaptation cannot be met without appropriate action at the local level. The roles and responsibilities of LAs and other local bodies should be clarified when the UK National Adaptation Programme is developed in 2013. While planning and delivery is necessarily largely a local endeavour, it needs to be milestone and co-ordinated by central government. The National Adaptation Programme also offers the potential to specify the role that social justice concerns should play in adaptation planning and implementation.

Recommendation 3: LAs and other local organisations should look to capitalise upon opportunities for just adaptation through mainstream service planning and corporate risk management as well as in new ways such as localism and neighbourhood planning. Opportunities include the transfer of public health to LAs, emerging partnerships such as LNPs and funding streams such as the Community Infrastructure Levy.

The study has identified that there are specific opportunities to optimise just adaptation, through new mechanisms such as LNPs, new funding streams and neighbourhood planning. Those organisations that remain committed appreciate and promote the economic arguments that justify making adaptation a bigger priority.

Throughout the study, the importance of appropriate language has been highlighted particularly where the prevailing view is that climate change is a long-term environmental issue rather than an immediate priority. Highlighting the potential risks to health, quality of life and also (long-term) cost is likely to have more resonance and ensure that the issue is taken seriously by policy-makers, practitioners and local communities in the current fiscal environment. The perspective that climate change is as much a moral and social issue as an environmental concern should be promoted widely. In communicating the importance of the agenda, the use of case studies and stories from areas that are developing just adaptation responses should be widely circulated.

Recommendation 4: Climate change adaptation should be promoted in terms of risk, community resilience, ethics and cost efficiency if it is to be taken seriously and made a priority within LAs and other local organisations.

Recommendation 5: Just adaptation is as much a moral and social concern as an environmental issue; it should be built into the risk assessment and management practices of all organisations working with vulnerable communities.

Mainstreaming and embedding just adaptation

Socially just adaptation plans need a supportive national and local policy context, but also a serious commitment at all levels, especially locally. LAs and other organisations which place a strong policy imperative on climate change adaptation and equalities issues will then determine supportive priorities for resource allocation and the delivery of appropriate actions, such as Highland Council's commitment to developing responses through community adaptation planning. Socially just adaptation planning requires more strategic priority at LA level, and also needs to be better embedded across services, specifically those focused on working with potentially vulnerable groups; not just in those working on physical infrastructure development and asset management. It also needs to go beyond emergency planning to encompass wider considerations of risk management and community resilience in service delivery. Opportunities have been identified that can be capitalised upon to promote just adaptation. Screening all LA decisions/proposals/reports through a climate change adaptation filter is an effective way of achieving an automatic route through which just climate change adaptation is considered.

Recommendation 6: Just adaptation needs to be better embedded across all LA departments through their service planning and delivery. Screening all LA decisions/proposals/reports through a just adaptation filter could provide an automatic route through which this is considered.

Recommendation 7: Government departments also need to continue to work collaboratively to ensure that their policies and programmes are 'social justice proofed' regarding climate change adaptation. Government departments need to lead by example in their activities addressing the needs of vulnerable communities, as well as by facilitating/enabling LAs to pursue just adaptation.

From the study findings, it is evident that to truly embed social justice considerations in adaptation planning, there is a need for organisations that work with vulnerable service users to ensure that climate change adaptation is built into their risk and resilience planning. If this were achieved, socially just adaptation responses would be more likely to be developed. This should be fostered by greater collaborative working across departments/organisations and, perhaps, by more of a 'portfolio' approach in which relevant officers could work together on the just adaptation portfolio.

Recommendation 8: LAs and other organisations should consider the perspective from which just adaptation responses should be developed and identify the lead organisations and department/local champions, while ensuring that these issues are considered both cross-departmentally within LAs and with other organisations.

The above conclusions further support the contention in the report that undertaking climate change adaptation at the local level and ensuring that adaptation responses are socially just is not solely the responsibility of LAs or their specific departments.

Theory and practice

Chapter 2 provided a review of current theory concerning socially just adaptation. From this we identified a set of principles that should be adopted to ensure just adaptation:

- A Taking into account current and future climate change impacts (considering intergenerational issues).
- B Understanding the different factors that contribute to vulnerability.
- C Identifying the distribution of vulnerable groups likely to be affected and recognising that vulnerability is dynamic and changes over time.
- D Involving the communities most likely to be affected in developing/delivering related plans or activities.
- E Assessing the potential adverse implications of climate change for vulnerable groups and providing targeted adaptation activity to address vulnerability.
- F Developing responses which include both building adaptive capacity and supporting adaptation actions, and consider both physical infrastructure and service delivery.
- G Being aware of the trade-offs that can arise in striving to achieve socially just adaptation and minimising the negative impacts for vulnerable communities as far as possible.
- H Relating to the above, considering and assessing all the options that could be implemented to ensure that the most beneficial approaches are progressed taking into account current and future climate change impacts.

Source: SQW, 2011

To conclude, we discuss the degree to which practice, as evidenced through our research, addressed these principles. This builds on Chapter 5's analysis of the case studies.

Taking into account current and future climate change impacts (Principle A)

Climate change is largely accepted at a political and public policy level, although not necessarily by the general public; climate change projections are used in the UK both nationally and at the LA level to assist in planning and decision-making. LCLIPs are commonly developed and climate change risk assessments, frameworks and plans have been widely adopted. However, in terms of practice, action on the ground often focuses on emergency planning related to current severe weather effects, rather than on building adaptive capacity and undertaking adaptation activities to address future projected climate change impacts. In addition, scepticism regarding future climate change impacts remains in some quarters, which impacts on adaptation planning and delivery.

Identifying, understanding and involving vulnerable communities (Principles B–E)

From the review of policy and the survey of local authorities and case studies, it is evident that social justice is being taken into account to some degree in the development and implementation of climate adaptation policy and practice. However, this mainly constitutes distributional justice issues and is often either narrowly focused in terms of the spatial location of vulnerable communities (particularly those living on flood plains) and the number of properties affected, or concentrates solely on increased temperature and the impacts this can have on health. There is less widespread acknowledgement or recognition of broader conceptions of social vulnerability, in terms of a person's ability to cope with changes in climate and their overall wellbeing. It is suggested that this agenda should be promoted and taken forward through organisations working with vulnerable communities, in order to ensure that their policies and practices incorporate adaptation responses; climate change/sustainability professionals should also ensure that their strategies and plans take into account local social justice issues.

The involvement of vulnerable groups in planning activities is essential, in order to achieve ownership and ensure the agenda is taken seriously. The case-study research found a particularly successful community-based approach to ensuring that both distributive and procedural social justice is embedded in adaptation planning: the community planning pilot in Highland (Gairloch and Loch Ewe). A strong integrated policy context including a focus on community planning can provide essential leverage to enable action, and community adaptation plans need to be further developed and learning shared with other communities and authorities at all levels.

Recommendation 9: In assessing need/risk with respect to future climate change implications and developing responses, vulnerable communities (including the socially vulnerable) need to be identified early on and involved in all stages of planning and delivery to ensure just responses. This can be either directly or through voluntary/community-sector advocacy organisations. Trusted service delivery and advocacy organisations are best placed to engage and inform vulnerable groups, but they may themselves need to engage with the issues more fully before they can play this role.

Recommendation 10: Adaptation plans led by communities, or developed between public or voluntary/community organisations and local communities, should be taken forward and learning shared with other communities and local agencies at all levels.

It is essential that policy-makers and practitioners recognise the specific requirements and needs of vulnerable communities and develop targeted rather than blanket responses. Adaptation for all is not appropriate where some groups are disproportionately impacted. Tailored adaptation responses should be developed for different groups, for example, by working with travellers to implement flood defences and evacuation procedures for their sites, and by providing information through different media, which is accessible to disabled people and to those for whom English is not their first language.

Recommendation 11: Policy-makers and practitioners must recognise the specific requirements and needs of vulnerable communities and develop targeted responses.

Developing responses which include both building adaptive capacity and supporting adaptation actions, and considering both physical infrastructure and service delivery (Principle F)

Adaptation plans that have been developed to date at LA level have a much greater focus on building adaptive capacity than on identifying and undertaking adaptation actions. While it is necessary to build capacity, educating to ensure greater understanding among decision-makers and in communities, this should then be developed into actions. Adaptation planning is itself a continuous process – it can never be considered as finished.

Recommendation 12: More forward looking, and wider ranging, thinking is needed, recognising that many current actions are often insignificant or inconsequential compared to the scale of the challenge, and many are focused on emergency planning or emergency responses. In addition, such plans need to be developed on a collaborative basis with other organisations which have more wide-ranging responsibilities regarding the promotion of social justice and minimisation of social risk.

Being aware of the trade-offs and options assessment to ensure just adaptation (Principle G and Principle H)

Theoretical perspectives highlight the need to be aware of differential impacts among vulnerable communities and of 'trade-offs', for example, between providing housing at affordable cost and building in unsuitable locations such as those that are prone to flooding. The affordability and accessibility of insurance is a key element of such 'trade-offs', which needs to be addressed at a national level: managing risks cannot simply be left to communities where systemic issues are involved. Social justice and insurance is investigated in another study undertaken as part of the JRF Climate Change and Social Justice Programme (O'Neill and O'Neill, 2012).

Recommendation 13: The potential for 'trade-offs' between costs and benefits among vulnerable communities as a result of adaptation planning and action must be understood and assessed in developing and delivering responses. This is important at all levels and should be incorporated into national adaptation plans as well as those at the local level.

Interestingly, the issue of trade-offs between who pays for and who benefits from action was not raised at all through the case-study research or through a broad review of case studies elsewhere. In spite of this, it will be an issue in determining priorities where trade-offs are decided at national level. The main issues with regard to local social justice were whether adaptation was happening at all and, if it was, whether any specific focus was applied on vulnerable communities. This may be because the delivery of the whole agenda is still in its infancy. It is, however, an important area and should be considered thoroughly in the development of the UK National Adaptation Programme and in adaptation plans at the local level.

The study has revealed that collaborative working is of key importance to ensure that just climate change adaptation is firmly embedded and mainstreamed. This is particularly important where numerous different agendas and perspectives are involved and resources are severely constrained. Many agencies have a role in climate change adaptation planning and implementation at the LA level; collaborative working is important to maximise cost-effectiveness and efficiency, share information and avoid duplication. There is also, however, a need for roles and responsibilities to be clarified and made more explicit for the benefit of the public and vulnerable communities.

Recommendation 14: Collaborative working is important to maximise cost-effectiveness and efficiency, share information and avoid duplication. But there is also a need for clarity of roles and responsibilities (for example, in relation to flood risk management) which needs to be made more explicit for the public and vulnerable communities.

The assessment of tools reported in Appendix V suggests that those tools that already exist to ensure social justice issues are taken into account should be refined, rather than new tools developed. A number of principles were identified to guide the development of just adaptation tools. JRF is intending to build on these principles and commission additional work to help develop just adaptation guidance.

Recommendation 15: Tools should be developed which are tailored to their purpose and target. They should enable the user to understand the nature and incidence of key climate change impacts, the sources and incidence of vulnerability in the community, the range of available adaptation strategies and the obstacles and opportunities for using and implementing them.

And finally . . .

From the examples cited throughout the report, it is clear that a range of just adaptation activities are underway in a range of different localities, with differing projected climate impacts. While it is possible to draw together key principles that can provide a framework for undertaking just adaptation, there are no blueprint solutions. Climate change adaptation is a continuous and never-ending process and unlike mitigation, which has been more widely adopted, it has no specific targets to work towards, making progress harder to measure.

The study found a widely varying standard of adaptation planning. Making it easier for LAs and other bodies to learn from each other's experiences, potentially through a virtual central point, such as Communities of Practice or LinkedIn, could help address this issue. LAs could pursue collaboration with others through the Local Government Group, Climate Local and other alternative avenues to ensure that they can make best use of resources available. Disseminating best practice would help avoid 'reinventing the wheel' and enable learning from experience.

Recommendation 16: Climate change adaptation is a continuous process and there is a widely varying standard of adaptation planning. This issue should be addressed through facilitated learning between LAs and other bodies and the transfer of best practice. Climate Local should provide a channel for considering and promoting just adaptation, and the Environment Agency and DEFRA should ensure that just adaptation is embedded in the implementation of the UK's National Adaptation Programme.

NOTES

- 1 Village and Community Agents project in Gloucestershire; see <https://www.villageagents.org.uk/index.asp>
- 2 Everybody's Talking about Climate Change campaign in Derbyshire and Nottinghamshire; see <http://www.everybodys-talking.org/>
- 3 Transition Network movement; see <http://www.transitionnetwork.org/>
- 4 Low-regret adaptation actions are those where moderate levels of investment increase the capacity to cope with future climate risks. Typically, these involve over-specifying components in new builds or refurbishment projects. For instance, installing larger diameter drains at the time of construction or refurbishment is likely to be a relatively low-cost option compared to having to increase specification at a later date owing to increases in rainfall intensity (World Bank, 2012).
- 5 BBC News Scotland Politics. (16 January 2012). 'Alex Salmond in climate justice call to world leaders'; see <http://www.bbc.co.uk/news/uk-scotland-scotland-politics-16584424> [accessed 29 May 2012]
- 6 Of which 177 were contacted directly but did not respond. The remaining 188 were LAs in England with Level 0 or Level 1 on NI 188 recorded for 2009/10. We considered it unlikely that these LAs would have developed a complete plan by 2011 and therefore did not contact them directly.
- 7 See <http://www.sccip.org.uk> [accessed 29 May 2012]
- 8 There is still some debate over whether the insulation provided by Energy Doctors for retaining winter warmth (slowing heat loss) is also beneficial for summer cooling (slowing heat gain).
- 9 Good practice example cited by UKCIP; see <http://ukcip.org.uk/case-studies>
- 10 Burning of old growth on heather moors to encourage new growth for grazing.
- 11 Sustainable Cities: Options for Responding to Climate Change Impacts and Outcomes (SCORCHIO). University of Manchester; see <http://www.ukcip.org.uk/government/local-authorities/case-studies> [accessed 29 May 2012]
- 12 SNACC is funded by EPSRC under the Living with Environmental Change Programme (LWEC) and is part of the Adaptation and Resilience to a Changing Climate (ARCC) Coordination Network; see <http://www.bne.uwe.ac.uk/cep/snacc> [accessed 29 May 2012]
- 13 This is a good practice example case study cited by UKCIP; see <http://ukcip.org.uk/case-studies>
- 14 Ibid.
- 15 Evidence provided from the case study conducted as a part of this study and also a good practice case study cited by UKCIP.
- 16 Also a good practice case study cited by UKCIP.
- 17 Use of storytelling may be a powerful tool as a starting point, e.g. 'how will poor people living in low-lying areas escape a flood?' (Amundsen, *et al.*, 2010)

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APPENDIX I: SUMMARY OF RELEVANT POLICIES

The list that follows in Table 6 summarises the coverage of policies and other relevant documents produced by the European Union, the UK Government and Devolved Administrations.

Table 6: Summary of relevant policies

Policy plans and documents	Author	Year	Geography	Key requirements re: climate change adaptation?	Issues for social justice	Requirements on LAs
EUROPEAN UNION <i>Adapting to Climate Change: Towards a European Framework for Action</i>	European Commission	2009	European Union	<p>Due to the regional variability and severity of climate impact, most adaptation measures will be taken at national, regional or local level. However these measures can be supported and strengthened by an integrated and co-ordinated approach at EU level.</p> <p>The objective of the EU's Adaptation Framework is to improve the EU's resilience in dealing with the impact of climate change. The framework will respect the principle of subsidiarity and support overarching EU objectives on sustainable development.</p>	<p>In the social domain there is mounting evidence that those who have fewer resources are more vulnerable to climate change effects. It is vital for the success of adaptation policies that they distribute the burdens equitably, and that the impact on jobs and on the quality of life of low-income groups is taken into account.</p>	<p>Phase 1 will focus on four pillars of action:</p> <ul style="list-style-type: none"> • building a solid knowledge base on the impact and consequences of climate change for the EU • integrating adaptation into EU key policy areas • employing a combination of policy instruments (market-based instruments, guidelines, public-private partnerships) to ensure effective delivery of adaptation • stepping up international cooperation on adaptation. For Phase 1 to be a success, the EU, national, regional and local authorities must co-operate closely

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Table 6 continued

Policy plans and documents	Author	Year	Geography	Key requirements re: climate change adaptation?	Issues for social justice	Requirements on LAs
UNITED KINGDOM						
<i>Stern Review</i>	Nicholas Stern	2006	United Kingdom	Looked at the economics of climate change and associated costs. Argued that adaptation measures were crucial in dealing with unavoidable climate impacts. Argued that the government would need to act to remove barriers to adaptation. These barriers include uncertainty and lack of information, and missing and misaligned markets.	A financial safety net may be required for the poorest in society, who are likely to be the most vulnerable to the impacts and least able to afford protection (including insurance).	Focused on action at government level rather than providing guidance specifically for local authorities.
Climate Change Act	HM Government	2008	United Kingdom	Introduced into legislation a process for assessing the risks associated with climate change for the UK, alongside emissions targets. Requires: <ul style="list-style-type: none"> • a UK Climate Change Risk Assessment (CCRA) every five years, with the first CCRA to report to parliament in January 2012 • a National Adaptation Programme to be reviewed every five years, with the first Programme to be published in 2013 	Requires the government to undertake further research and strategic planning that could consider social justice, including the use of the UKCCRA and NAP.	The government has the power to require public authorities and statutory undertakers (including local authorities and utility companies) to report on how they have assessed the risks of climate change to their work, and what they are doing to address these risks.

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Table 6 continued

Policy plans and documents	Author	Year	Geography	Key requirements re: climate change adaptation?	Issues for social justice	Requirements on LAs
UNITED KINGDOM continued						
<i>Appraisal of Flood and Coastal Erosion Risk Management: a Defra Policy Statement</i>	Defra	2009	United Kingdom	One of Defra's broad principles for policy appraisal is to disaggregate costs and benefits in order to determine which sections of society are paying and benefiting from different flood and coastal defence options.	The statement is specifically intended to ensure that poorer sections of society are not subsidising wealthier beneficiaries.	There is no statutory duty to provide flood and coastal defences, only permissive powers to provide defences for local authorities and government agencies.
<i>How Well Prepared is the UK for Climate Change?</i>	Adaptation Sub-committee of the UK Committee on Climate Change	2010	United Kingdom	Identifies five priority areas for action: <ul style="list-style-type: none"> • strategic land use planning • adapting national infrastructure to climate change impacts • designing and renovating buildings • managing natural resources sustainably (e.g. improving environmental networks so that species can adapt and move in response to changes in climate conditions) • emergency planning 	Advises the government that it should ensure that its climate adaptation policies limit the uneven distribution of climate change impacts across regional and social scales, and protect the most vulnerable to climate change. In particular, it suggests that emergency planning will involve ensuring effective social care and reducing impacts on vulnerable groups.	Action by local authorities, public sector agencies, businesses and individuals will be essential to ensure that the UK is preparing adequately for a changing climate. Local authorities should focus their efforts on increasing their resilience to current and future climates. They can do this by building an understanding of their vulnerability to current and future climates and embedding adaptation into their risk management functions.

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Table 6 continued

Policy plans and documents	Author	Year	Geography	Key requirements re: climate change adaptation?	Issues for social justice	Requirements on LAs
UNITED KINGDOM continued						
<i>Climate Change: Taking Action – Delivering the Low Carbon Transition Plan</i>	HM Government	2010	United Kingdom	The actions being taken by government departments to adapt to the most serious climate change impacts.	Acknowledges that some of the most vulnerable groups to climate change will be the ones least able to adapt. Proposes that further research is needed on impacts on the most vulnerable people in society. Suggests that the impacts on children in particular need to be addressed.	Specifically targeted at government departments, not local authorities
<i>Improving the Resilience of Critical Infrastructure to Disruption from Natural Hazards</i>	Cabinet Office	2010	United Kingdom	Sets out proposals for a 'cross-sector systematic programme to improve the resilience of critical infrastructure and essential services to severe disruption by natural hazards'.	Includes a section entitled 'Social Requirements for Resilience' which states that the programme will look at the disproportionate impacts on vulnerable groups from disruption as a result of natural hazards.	Again focused at the national level rather than towards local authorities. The Cabinet Office is also developing tools to support community resilience that can be used locally

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Table 6 continued

Policy plans and documents	Author	Year	Geography	Key requirements re: climate change adaptation?	Issues for social justice	Requirements on LAs
UNITED KINGDOM continued						
<i>Protecting Health and Reducing Harm from Extreme Heat and Heatwaves</i>	National Health Service	2010	United Kingdom	Steps to improve both disaster/emergency responses as a result of increases in the magnitude or frequency of extreme weather events, and strategic actions to ensure that the NHS is better adapted in the longer term to cope with climate change impacts.	Particular actions to help deal with vulnerable patients and population groups such as the elderly at times of heatwave are described in the plan.	Continue to work in partnership with local authorities and social care services to identify vulnerable populations and geographical areas in order to target long-term planning and interventions.
<i>Adapting to Climate Change in the UK – Measuring Progress</i>	Adaptation Sub-Committee	2011	United Kingdom	This suggests that some sectors in the UK are near their limits in coping with the current climate and could struggle to deal with the effects of climate change on water resources and development patterns, for example. The report promotes the concept of an 'adaptation ladder to assess preparedness', taking into account whether the UK is becoming more or less vulnerable to current and future climate risks; the degree to which low-regret adaptation actions are being taken up; and the extent to which long-term decisions are systematically accounting for climate risks.	The report provides a useful framework, but social justice is only highlighted in terms of the health issues from higher temperatures for older people, and spatial vulnerability; no other consideration of social vulnerability is included.	While specific concerns are identified in relation to spatial planning, recommendations from the report are targeted at the national level, particularly with regards to the UK Climate Change Risk Assessment and the National Planning Policy Framework.

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Table 6 continued

Policy plans and documents	Author	Year	Geography	Key requirements re: climate change adaptation?	Issues for social justice	Requirements on LfAs
UNITED KINGDOM continued						
National flood and coastal erosion risk management strategy	Environment Agency and Defra	2011	England	<p>The strategy's overall aim is to ensure that flooding and coastal erosion risks are well-managed and co-ordinated, so that their impacts are minimised.</p> <p>The strategy is intended to ensure that the government, the Environment Agency, local authorities, water companies, internal drainage boards and other organisations that all have a role in flood and coastal erosion risk management understand each other's roles and co-ordinate how they manage these risks.</p>	The strategy is largely concerned with existing flood risk rather than potential climate change impacts.	Explains new roles for county and unitary authorities as Lead Local Flood Authorities to manage local flood risk (e.g. from surface water run-off, groundwater, and rivers or streams that are not main rivers). LLFAs must plan how flood risk will be managed in their area.
						<p>District councils (Risk Management Authorities) have powers to manage flooding from ordinary watercourses (rivers or streams that are not considered to be main rivers). They may arrange for this management work to be carried out on their behalf by other organisations.</p> <p>Work to tackle coastal erosion (and also the risk of sea flooding) is done by district or unitary councils in collaboration with the Environment Agency. They are known as Coastal Erosion Risk Management Authorities. They also have powers to protect land against coastal erosion and to control third party activities on the coast.</p>

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Table 6 continued

Policy plans and documents	Author	Year	Geography	Key requirements re: climate change adaptation?	Issues for social justice	Requirements on LAs
UNITED KINGDOM continued						
Climate Change Risk Assessment	HM Government	2012	United Kingdom	<p>The CCRA provides evidence and analysis intended to enable UK administrations to:</p> <ul style="list-style-type: none"> understand the level of risk posed by climate change to the UK compare the risks posed by a changing climate with other pressures on the government prioritise adaptation policy assess the costs and benefits of adaptation actions <p>The UK CCRA Government Report outlines actions already in place to address the risks identified in the CCRA and outlines the government's plans for the future. The key vehicle, through which activities will be proposed to respond to the identified risks, will be the National Adaptation Programme (NAP) due to be produced in 2013.</p> <p>This is supported by a detailed Technical Report that includes an Annex further exploring issues associated with social vulnerability</p>	<p>Social vulnerability is recognised as a relevant factor in assessing the social consequences of climate change impacts, with significant discussion provided in Annex B.</p> <p>This explores various definitions of climate and social vulnerability referring to recent literature and brings in consideration of adaptive capacity and social conversion factors.</p> <p>However the main body of the CCRA report largely refers to vulnerability in terms of spatial and health characteristics.</p>	<p>The CCRA and supporting documents present a comprehensive evidence base for local authorities that has been further extended through the provision of information packs at Climate Change Partnership level. However, in terms of recommendations and requirements for LAs, these are likely to be provided by the National Adaptation Programme to be produced later in 2013.</p>

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Table 6 continued

Policy plans and documents	Author	Year	Geography	Key requirements re: climate change adaptation?	Issues for social justice	Requirements on LAs
UNITED KINGDOM continued						
<i>National Planning Policy Framework</i>	Department for Communities and Local Government	2012	United Kingdom	The government's objective is that planning should fully support the transition to a low-carbon economy in a changing climate, taking full account of flood risk, coastal change, and water supply and demand considerations.	In the section on 'Meeting the challenge of climate change, flooding and coastal change', there are several references to areas that are vulnerable rather than communities, but in reference to the Exception Test (where development may be permitted in flood risk areas), there is specific reference to the vulnerability of the users of such developments (noting that vulnerability is not defined).	Local Plans should take account of climate change over the longer term including factors such as flood risk, coastal change, water supply, and changes to biodiversity and landscape. New development should be planned to avoid increased vulnerability to the range of impacts arising from climate change. When new development is brought forward in areas that are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including the planning of green infrastructure. Inappropriate development in areas at risk of flooding should be avoided by directing development away from the areas with the highest risk, but where development is necessary, it should be made safe without increasing flood risk elsewhere.

(continued overleaf)

Table 6 continued

Policy plans and documents	Author	Year	Geography	Key requirements re: climate change adaptation?	Issues for social justice	Requirements on LAs
UNITED KINGDOM continued						
'Adaptation Economic Analysis' (part of Climate Change Risk Assessment)	HM Government	TBC	United Kingdom	The analysis is in response to the Stern Review, which highlighted the need for more evidence on the costs and benefits of adaptation to the UK economy. It aims to estimate an overall value for adaptation costs and benefits to the UK economy, as well as identify areas where adaptation would be particularly beneficial (eg because adaptation actions create jobs).	This should take into account social justice in terms of identifying where jobs are being created, and whether these will benefit the communities likely to be impacted by climate change and adaptation responses.	Not yet reported.
SCOTLAND						
Climate Change Adaptation Framework	Scottish Government	2009	Scotland	Aimed at building Scotland's resilience to climate change, in three ways: <ul style="list-style-type: none"> improving understanding of the impacts of climate change equipping stakeholders with the skills, tools and support mechanisms to help them adapt helping to integrate adaptation into wider regulation and public policy 	The Scottish Government and local government must consider how social impacts may be addressed most effectively in adaptation measures, to ensure any existing inequalities do not widen with climate change.	Scotland's communities will often be in the front line in responding to the impacts of climate change, and local authorities are ideally placed to lead the community response to climate change. With knowledge of local values (social, environmental, historical and cultural), industries and landscapes, local government allows adaptation actions to be tailored effectively to the localised impacts of climate change. Local authorities can also work in partnership with their broader community of local estate managers, employers, community leaders and planning partners to prepare for a changing climate.

(continued overleaf)

Table 6 continued

Policy plans and documents	Author	Year	Geography	Key requirements re: climate change adaptation?	Issues for social justice	Requirements on LAs
SCOTLAND continued						
Sector Action Plans	Scottish Government	2009	Scotland	<p>Example actions within the Sector Action Plans (SAP) include:</p> <ul style="list-style-type: none"> improve the level of business-friendly information provided via the Scottish Enterprise Business Gateway website about the likely implications of climate change to businesses, including signposting Adaptation Scotland services account managers to provide advice and/or signposting to Adaptation Scotland services to growing companies, in relation to adaptation and mitigation measures encourage the private sector to provide specific adaptation training for tourism businesses support climate change adaptation objectives during the negotiations for the EU Common Agricultural Policy post-2013 	<p>Example: Health SAP acknowledges that vulnerable and socially deprived people will be most susceptible to increased vulnerability.</p>	<p>Adaptation to the impacts of climate change is often most effectively implemented at a local level, as the impacts and consequences may vary considerably by area or community. A local approach will be enhanced through broader support for capacity building, sharing of best practice and supporting policy.</p>

(continued overleaf)

Table 6 continued

Policy plans and documents	Author	Year	Geography	Key requirements re: climate change adaptation?	Issues for social justice	Requirements on LAs
SCOTLAND continued						
Sector Action Plans continued						
<i>How Well is Scotland Preparing for Climate Change?</i>	Adaptation Sub-Committee of the UK Committee on Climate Change	2011	Scotland	<ul style="list-style-type: none"> support the development of woodland expansion and habitat and green networks. <p>There are 12 Sector Action Plans: agriculture, biodiversity, built environment, business, emergency and rescue services, energy, forestry, health, marine, spatial planning and land use, transport, and water.</p> <p>Advises that in developing its first statutory adaptation programme, the Scottish Government should:</p> <ul style="list-style-type: none"> set clear adaptation outcomes and evaluate the effectiveness of policy enable the uptake of low-regret adaptation actions (where the socio-economic costs are relatively low and the benefits increase in line with the impacts of climate change) ensure key decision-makers explicitly consider adaptation in long-term plans strengthen adaptation in some critical policy areas ensure effective working with the UK National Adaptation Programme 	<p>Scotland's population is ageing and elderly people are more vulnerable to the impacts of extreme weather.</p> <p>There are a number of health challenges in Scotland, which are more pronounced in deprived areas. These will increase the vulnerability of certain communities to extreme weather.</p>	<p>Single Outcome Agreements in Scotland (between the Scottish Government and Community Planning Partnerships) include the following target outcome as one of 15 to be achieved over the next 10 years: 'We reduce the local and global environmental impact of our consumption and production'. Specific actions that will be undertaken by the government include:</p> <ul style="list-style-type: none"> establishing a Climate Change Fund 2008–2011 to support community action publishing Scotland's Climate Change Adaptation Strategy to ensure an effective response to the unavoidable impacts of climate change, in order to safeguard our communities and protect Scotland's long-term environmental and economic prosperity

(continued overleaf)

Table 6 continued

Policy plans and documents	Author	Year	Geography	Key requirements re: climate change adaptation?	Issues for social justice	Requirements on LfAs
WALES						
<i>Changing Climate, Changing Places</i>	Welsh Local Government Association (WULGA) Environment Agency Wales Countryside Council for Wales UK Climate Impacts Programme	2008–11	Wales	<p>The project aims to make communities in Wales more resilient to the impacts of climate change and improve the capacity of Welsh local councils to address the consequences.</p> <p>The participating authorities and project partners are working together to:</p> <ul style="list-style-type: none"> • develop better ways of planning for adaptation, including for individual service areas • understand what those impacts may be, their level of risk and appropriate responses • share data and information to inform decision-making, policy and practice • make sure that the people and groups they work with are aware of the adaptation agenda and their role • identify gaps in the research and knowledge needed to inform future work 	<p>Pilot approach focusing on community resilience and risk assessment with the intention of embedding climate change adaptation planning into individual service areas, including social services.</p>	<p>As a result of the project the following recommendations should help to create the conditions for local authorities to build capacity and understanding, and develop a response to adaptation:</p> <ul style="list-style-type: none"> • signpost support • focus the national adaptation 'conversation' on the scale of key adaptation risks • build Wales' capacity to understand the costs versus the benefits of a precautionary approach and no/low regrets to adaptation in key policy areas • issue guidance on the corporate processes, internal governance and structures needed to tackle adaptation and provide training and support on adaptation to local authorities • update national policy • give further consideration to regional and national support structures for adaptation, and the relationship with spatial planning processes

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Table 6 continued

Policy plans and documents	Author	Year	Geography	Key requirements re: climate change adaptation?	Issues for social justice	Requirements on LAs
WALES continued						
Climate change strategy	Welsh Assembly Government	2010	Wales	<p>The approach involves:</p> <ul style="list-style-type: none"> • building up an evidence base about risks • mainstreaming or embedding adaptation within organisations and communities • communicating the need for adaptation and equipping decision-makers at all levels with the necessary tools and information <p>The evidence is to build on a scoping report published in 2000, <i>Changing Climate, Changing Choices</i>.</p>	<p>The strategy includes as one of its aims 'mainstreaming adaptation to build capacity within organisations and communities', and has an explicit commitment to embedding social justice in climate change policy development and adaptation. Sector adaptation plans have been developed covering five sectors, including health and communities (social justice, equality issues and local government).</p>	<p>The framework recognises that local authorities must be at the heart of adaptation policy due to the fact that it is often a spatial issue.</p> <p>Their primary role is to raise awareness and act as leaders by addressing the impacts of climate change in their own delivery of services.</p>

(continued overleaf)

Table 6 continued

Policy plans and documents	Author	Year	Geography	Key requirements re: climate change adaptation?	Issues for social justice	Requirements on LAs
WALES continued						
Adaptation delivery plan	Welsh Assembly Government	2010	Wales	<p>Five key areas are identified for adapting to climate change:</p> <ul style="list-style-type: none"> ● natural environment ● infrastructure ● communities ● health ● business and tourism 	<p>Action 19b – Support and enable community and third sector projects that help their communities adapt to climate change.</p> <p>Expected outcome:</p> <ul style="list-style-type: none"> ● Community projects have case studies they can learn from. ● Communities have opportunities to share experiences and learn from others. <p>Action 19c – Support equalities and human rights organisations to identify and understand the social justice implications of climate change adaptation.</p> <p>Expected outcome:</p> <ul style="list-style-type: none"> ● At least two third sector organisations improve their understanding of how climate change affects their work and develop an approach to addressing the issues that others can learn from. 	<p>Whilst there are 24 actions, with LAs having requirements on many, there is no specific requirement for LAs on Action 19c</p>

(continued overleaf)

Table 6 continued

Policy plans and documents	Author	Year	Geography	Key requirements re: climate change adaptation?	Issues for social justice	Requirements on LAs
WALES continued						
<i>Preparing for a Changing Climate</i>	Welsh Government	2011	Wales	<p>Guidance for implementing climate change adaptation measure. A five-step process following the structure of:</p> <ul style="list-style-type: none"> ● starting ● investigating ● planning ● implementing ● monitoring and reviewing 	<p>The Policy Statement specifically highlights health as an area of priority and notes that key reporting bodies include those authorities that are vulnerable to the projected impacts of climate change.</p>	<p>The power to direct allous Welsh Ministers to improve Wales' preparedness for climate change by ensuring that key public bodies and statutory bodies are assessing the risks and opportunities posed by climate change, and are implementing appropriate responses.</p> <p>Therefore expect key reporting authorities (statutory bodies) to make progress in preparing for a changing climate during 2011 and 2012. The 'Preparing for a changing climate' guidance and the Welsh Government's adaptation 'Knowledge Transfer Programme' have been designed to help facilitate this.</p>
NORTHERN IRELAND						
<i>Preparing for a Changing Climate in Northern Ireland</i>	Scotland and Northern Ireland Forum for Environmental Research	2007	Northern Ireland	<p>Included a risk analysis and an adaptation strategy for each impact and identified the public sector bodies responsible for delivery.</p>	<p>Acknowledges the health effects of climate change on those most vulnerable.</p>	<p>Adaptation to the impacts of climate change is often most effectively implemented at a local level, as the impacts and consequences may vary considerably by area or community. A local approach will be enhanced through broader support for capacity building, sharing of best practice and supporting policy.</p>

Source: As cited

APPENDIX II: NATIONAL AND LOCAL RESPONSIBILITIES FOR CLIMATE CHANGE ADAPTATION

Throughout the CCRA Government report, the climate adaptation responsibilities of various bodies are summarised. These have been collated and summarised in Table 7, below.

Table 7: Responsibilities for adaptation

Climate change risk	Responsible authority
Productivity and economic viability of the agriculture and forestry sectors – agriculture, forestry and environmental policies	Defra Devolved governments
Flood and coastal erosion policy Water resources management policy Biodiversity policy	Defra Devolved governments
Supporting business in mainstreaming adaptation Enabling industries to respond to the future needs and opportunities presented	BIS (UK Department for Business, Innovation and Skills) Devolved governments
Energy infrastructure and energy efficiency policy	DECC Devolved governments
Effects of a heatwave on human health	Department of Health Devolved governments
Impacts of climate change for mortgage and insurance industries	HM Treasury
Implementation of flood risk management policy	Environment Agency (England and Wales) Scottish Environment Protection Agency (Scotland) Department of Agriculture and Rural Development Rivers Agency (Northern Ireland)

(continued overleaf)

Table 7 continued

Climate change risk	Responsible authority
Environmental protection and supporting the tourism industry	Natural England and English Heritage Countryside Council for Wales Scottish National Heritage Northern Ireland Environment Agency
Climate change impacts on health and social care	Department for Health, and the NHS and associated 'arm's length bodies' (ALBs) Scottish Government Health Directorate, NHS and 14 Health Boards Welsh Government, NHS, seven Health Boards and three NHS Trusts Department of Health, Social Services and Public Policy (Northern Ireland), four regional health and social care organisations and 13 other associated ALBs.
Emergency responses	National level – Cabinet Office, Home Office, DCLG, DH Local level – fire and police services, local authorities Policy and regulation of food safety and food hygiene Scotland – Food Standards Agency (for all areas) Wales – Food Standards Agency for all areas except nutrition policy, which is the responsibility of the Welsh Government Northern Ireland – Food Standards Agency (for all areas)
Air quality policies	EU level with implementation devolved across the UK
Energy infrastructure	DECC
Transport infrastructure	DfT Government led – highways Private – ports Unregulated – airports
Water infrastructure	Defra Regulated – water companies
Land use planning	England – DCLG (draft National Planning Policy Framework) Wales – Welsh Government (Planning Policy Wales and Technical Advice Notes) Scotland – Scottish Government (National Planning Framework and Scottish Planning Policy) Northern Ireland Local – Local Planning Authorities
Marine planning	England – Defra Scottish Government Welsh Government Department of the Environment, Northern Ireland
Building regulations	Local authorities
Natural environment and biodiversity policies	Defra Scottish Government Welsh Government Northern Ireland Executive
Domestic marine and fisheries policy	Defra Scottish Government Welsh Government Northern Ireland Executive

Source: SQW, derived from Defra, 2012b

APPENDIX III: POLICIES AND PLANS THAT SHOULD BE SUBJECT TO JUST ADAPTATION PROOFING

The strategies, policies and plans listed in Table 8 should be required to evidence their impacts for socially just climate change adaptation.

Table 8: Examples of the types of policies and plans that should require just adaptation proofing

Policy area	Type of plan/policy/strategy
Corporate	Corporate plan – Directorate plans – Service plans
	Corporate risk register – Directorate register – Service registers
	Corporate risk management plan
	Equality impact assessment – linked to decision-making/project initiation templates for all corporate and Cabinet reports
	Sustainability impact assessments – linked to decision-making/project initiation templates for all corporate and Cabinet reports
	Corporate travel plan
	Corporate procurement strategy

(continued overleaf)

Table 8 continued

Policy area	Type of plan/policy/strategy
Planning/housing	LDF – Core strategy
	Strategic flood risk assessments
	Local transport plans
	Surface water management plans
	Housing strategies and stock condition surveys
	Topic Supplementary Planning Documents, e.g. Sustainable design and construction, Flooding, Historic environment, Green infrastructure, Climate change
	Coastal adaptation strategy
	Minerals and waste plans
	Flood risk management strategies
Social care	Children's plans
	Vulnerable/older people's strategies
Other	Joint Strategic Needs Assessment
	Asset management plans
	Community contracts/neighbourhood management plans
	City wide plans and action plans (formerly Sustainable community strategy)
	Emergency planning
	Business continuity plans
	Shared public service plans
	Economic development strategies/plans
	Decision-making processes (including business case preparation)
	Communications plans (staff and members)
	Energy/carbon/adaptation strategies and plans
	Rural delivery strategy
Equality and diversity, e.g. equality impact assessment (EIA)	

Source: SQW

APPENDIX IV: TYPOLOGY OF ADAPTATION PRACTICE AND SOCIAL JUSTICE IMPLICATIONS

The following table provides a typology of a range of adaptation responses and identifies the potential social justice aspects of each, illustrated by good practice examples from the three case studies undertaken as part of the research, and more widely across the UK.

Table 9: Adaptation measures and social justice issues

Adaptation measure	Climate change impact	Potential social justice implications and evidence of principles		Measures to improve social justice	Organisation responsible for action
		Positive	Negative		
BUILDING ADAPTIVE CAPACITY					
Risk assessment	All	<p>Robust risk assessments that take full account of social justice by involving vulnerable groups/advocacy organisations in their development, and that take account of the differential impacts of climate change for people and places, provide an important evidence base for the development of just adaptation policies.</p> <p>LCLIPs conducted in Highland, Islington and York.</p> <p>Lancashire County Council produced a CLIP for the county and then developed the work to include an assessment of the vulnerabilities affecting the services of district councils and partners across Lancashire.⁹</p> <p>Highland Council – communities at risk and assessment of flood risk mapped using a Social Flood Vulnerability Index (SFVI).</p>	<p>Risk assessments that focus on climate change impacts only, or just consider their impact on physical structures, represent a significant missed opportunity to fully take account of risks for vulnerable communities.</p> <p>Mapping vulnerable communities can create potential for blight and create data protection issues, plus it cannot reflect the dynamic nature of vulnerability so needs to be combined with local knowledge where used to support local adaptation planning.</p>	<p>Ensure risks for communities are taken into account considering broad concepts of social vulnerability, including people's overall wellbeing and adaptive capacity as well as obvious personal characteristics such as health status plus risks for specific localities/buildings.</p>	<p>LAs plus other agencies such as health organisations, housing bodies and voluntary/community organisations.</p>

(continued overleaf)

Table 9 continued

Adaptation measure	Climate change impact	Potential social justice implications and evidence of principles	Measures to improve social justice	Organisation responsible for action
BUILDING ADAPTIVE CAPACITY continued	All	Positive	Negative	
Spatial planning ● policies in core strategies ● area action plans ● supplementary planning documents	Policies can direct development away from flood plains, require SUDS, flood alleviation schemes. Good consultation processes should ensure the development of inclusive policies, e.g. involvement of Inclusive York in the LDF consultation process. Potential to consider relocation of most vulnerable at risk groups.	Potential for blight on new development, e.g. provision of services for those living in flood risk areas. Less development in these areas equals less developer contributions. Developers may be unwilling to provide affordable housing (or other requirements) as a result of climate change adaptation requirements placed on them.	Ensure inclusive consultation processes, e.g. involving advocacy organisations to capture the views of hard-to-reach communities.	LAs and community advocacy organisations.

(continued overleaf)

Table 9 continued

Adaptation measure	Climate change impact	Potential social justice implications and evidence of principles		Measures to improve social justice	Organisation responsible for action
		Positive	Negative		
BUILDING ADAPTIVE CAPACITY continued					
Emergency planning	Flooding – pluvial and fluvial, coastal sea level rises and surges, plus related impacts such as landslips.	Processes in place to ensure awareness of the location of communities, provision of information and well planned emergency procedures should all reassure vulnerable communities and ensure safety should emergency situations arise.	Inappropriate/overwhelming information can induce 'fear of climate change'. If vulnerable communities are not identified or aware of emergency processes, this could compromise their safety.	Regular reviews of who is vulnerable in the community. Improved communications systems and protocols when dealing with emergencies in order to keep vulnerable communities better informed and better able to respond.	Police, Fire Service, LAs, housing bodies, health organisations, community advocacy organisations, Environment Agency (and equivalents).
<ul style="list-style-type: none"> • awareness of where vulnerable people are located • information processes to ensure communities are aware and informed • emergency planning procedures in place and acted on and refined in light of experience of emergencies 	<ul style="list-style-type: none"> Urban heat island/heatwave. Muirburn¹⁰ and forest fires. Landslips leading to road closures. 	<ul style="list-style-type: none"> Good practice examples include: <ul style="list-style-type: none"> • Workshops organised to find out specific groups' needs (Highlands), for example, older and vulnerable people in remote rural areas who are unable to access services in extreme weather; or those with disabilities who have difficulty leaving their home without outside support in an emergency. • Environment Agency flood warnings via text. 	<ul style="list-style-type: none"> Lack of planning in business/service continuity for communities cut off from transportation links (particularly acute for Scottish Island communities relying on ferry services). Increased school closures impacting on families and businesses. 	<ul style="list-style-type: none"> Innovative and multimedia/multi-language approaches important to capture wide audience, but print may be best for older people. Important to have a varied and non age-specific medium through which to communicate, and the route adopted should encourage engagement. Communication routes should be linked to trusted intermediaries to support communication with vulnerable groups. 	

(continued overleaf)

Table 9 continued

Adaptation measure	Climate change impact	Potential social justice implications and evidence of principles	Measures to improve social justice	Organisation responsible for action
		Positive		
		Negative		
BUILDING ADAPTIVE CAPACITY continued				
Emergency planning continued				
		<ul style="list-style-type: none"> Highland Council reviewing scenarios to see how Muirburn and forest fires could affect a community, and how the community could be safeguarded. 		
		<ul style="list-style-type: none"> Well-developed emergency planning processes in place in York – range of scenarios, with Silver Control being implemented if water rises above 4.6m. Includes a well-developed process for liaison with social services etc. to identify vulnerable residents and ensure they are safe. The Emergency Planning team acts as a gateway to council services at times of emergency and provides a 24-hour, on-call service. 		

(continued overleaf)

Table 9 continued

Adaptation measure	Climate change impact	Potential social justice implications and evidence of principles	Measures to improve social justice	Organisation responsible for action
		Positive	Negative	
BUILDING ADAPTIVE CAPACITY continued				
Information provision	All	Communities informed of projected climate change impacts through appropriate media and with appropriate messaging will be better able to amend their behaviour and protect their property. This could also save public sector resources if communities are 'doing their bit'. Examples of good practice include Energy Doctor Islington, Hotspots campaign in York, demonstration projects in Islington.	If information is not provided, vulnerable communities will not be engaged or consider changing their behaviour to adapt to future climate change. If information is only provided in English or through specific media (e.g. internet, text) this will result in differential impacts across communities.	Police, Fire Service, LAs, housing bodies, health organisations, community advocacy organisations, Environment Agency (and equivalents).
<ul style="list-style-type: none"> provision of more general (rather than emergency) information to inform communities of likely climate change impacts and recommended adaptation activities 			Innovative and multimedia/multi-language awareness raising approaches are important to capture a wide audience. Use of trusted intermediaries to directly speak to people is helpful.	

(continued overleaf)

Table 9 continued

Adaptation measure	Climate change impact	Potential social justice implications and evidence of principles	Measures to improve social justice	Organisation responsible for action
		Positive	Negative	
BUILDING ADAPTIVE CAPACITY continued				
Climate change adaptation tools (NB: these range from very practical tools that can be used by LAs, housing associations etc., to far more academic approaches that are of less relevance)	All	Tools that take into account social justice provide good assistance to LAs and others at a local level wishing to progress the development of climate change application plans and activities. Tools that include engagement approaches to ensure that vulnerable communities are directly involved in planning relevant adaptation activities should ensure procedural justice. The Wellingborough Partnership in Northamptonshire has developed a toolkit to increase understanding and awareness of climate change at community level in the borough.	Use of existing tools that do not take social justice into account miss a substantial opportunity and may contribute to creating mal-adaptation. These include some of the UKCIP projections and tools. Tools that are developed without any involvement of vulnerable communities may result in mal-adaptation.	Involve LA officers with responsibility for vulnerable groups, social services, local advocacy organisations and representatives of vulnerable communities.

(continued overleaf)

Table 9 continued

Adaptation measure	Climate change impact	Potential social justice implications and evidence of principles	Measures to improve social justice	Organisation responsible for action
		Positive	Negative	
BUILDING ADAPTIVE CAPACITY continued				
Climate change adaptation tools continued		<p>As part of the SCORCHIO project, the University of Manchester developed tools for the analysis of adaptation options in urban areas, with a particular emphasis on heat and human comfort in the built environment.¹¹ Manchester University has also developed UK-wide maps of social vulnerability that can help to consider the issues when combined with local knowledge (Lindley, <i>et al.</i>, 2011)</p>		
DELIVERY OF ADAPTATION ACTIONS				
Flood defences	Coastal, fluvial and pluvial flooding	<p>Ensuring that vulnerable communities are treated as a priority and understand how to use precautionary equipment will be important in providing socially just adaptation.</p> <p>Flood defences in place in York are provided by the Environment Agency along with sandbags and floodgates for all affected properties and 'flood risk' packs.</p>	<p>Inappropriate equipment, e.g. very heavy sandbags for disabled people and lack of education could result in equipment being used inappropriately and result in mal-adaptation.</p>	<p>User service providers to liaise with the Environment Agency regarding protection for individual properties/households to ensure that sufficient explanation is provided for the need for specific equipment and how to use it on a rolling basis (noting houses will change hands).</p> <p>Environment Agency (and equivalents), LAs, Community advocacy organisations.</p>

(continued overleaf)

Table 9 continued

Adaptation measure	Climate change impact	Potential social justice implications and evidence of principles		Measures to improve social justice	Organisation responsible for action
		Positive	Negative		
DELIVERY OF ADAPTATION ACTIONS continued					
Urban greening	Heatwaves and urban heat island effect.	<p>Involve local communities in developing and maintaining gardens in inner city locations helps to raise awareness of heat-wave issues, as well as provide shade.</p> <p>Development of inner city drought and rain gardens.</p> <p>Visualisation techniques such as those used in the Suburban Neighbourhood Adaptation to Climate Change project.¹²</p> <p>Culpeper Community Garden was provided with funding to develop a drought tolerant garden (Islington), seen as a good opportunity to raise awareness of different types of planting that are more resistant to periods of low summer rainfall. Culpeper Community Garden workers in Islington have engaged with those suffering from drug abuse, a charity working with children at risk of exclusion, and those with mental health and isolation issues, to create, maintain and monitor the garden.</p>	<p>Lack of involvement of vulnerable communities where these are located may lead to lack of maintenance, disuse or damage.</p>	<p>Organisations considering such initiatives should contact civil society advocacy/service delivery organisations to encourage involvement of vulnerable communities in their planning, design, implementation and maintenance.</p>	<p>Local authorities, civic society advocacy organisations representing vulnerable communities and service-delivery organisations.</p>

(continued overleaf)

Table 9 continued

Adaptation measure	Climate change impact	Potential social justice implications and evidence of principles	Measures to improve social justice	Organisation responsible for action
		Positive	Negative	
DELIVERY OF ADAPTATION ACTIONS continued				
Building adaptations	All	<p>Adaptations developed with the needs of vulnerable communities in mind should mean these are suitable for their needs.</p> <p>Climate change adaptation has been integrated into a number of regeneration projects e.g. Barking Riverside and Barking town centre.¹³</p> <p>Housing associations in York have put in place emergency bridges that can be used at times of flooding to enable social housing tenants to enter and leave their properties.</p> <p>An older people's care home in the flood risk area in York has reinstalled its sockets at a greater height above the ground to prevent flood damage.</p> <p>Highlands – actions have also been undertaken relating to council housing and flood risk. Flood guards have been purchased, for example, and in collaboration with SEPA, alarm systems have been installed.</p>	<p>Mal-adaptation resulting from not considering the needs of vulnerable communities could result in inappropriate adaptations, or in the longer term may raise serious questions about relocation of households.</p> <p>Development of specific tailored actions is important rather than tailoring adaptations that are considered to be 'accessible to all' but may have detrimental effects for some vulnerable groups.</p>	<p>All local stakeholders including private companies.</p>

(continued overleaf)

Table 9 continued

Adaptation measure	Climate change impact	Potential social justice implications and evidence of principles		Measures to improve social justice	Organisation responsible for action
		Positive	Negative		
DELIVERY OF ADAPTATION ACTIONS continued					
Building adaptations (continued)		<p>Exemplar buildings that provide cooling in UHI.</p> <p>Reducing non-permeable surfaces in urban areas (eg. Islington).</p> <p>Develop community-led approaches to ensure that the needs of vulnerable groups are paramount in the development of adaptation actions and in taking forward opportunities.</p> <p>Highland Council is encouraging the community of Gairloch to set up working groups such as a commerce group to look at existing structures and plans, and how adaptation can be integrated into these structures and plans.</p> <p>Residents of the village of Hoveringham, Nottingham took direct action because they were informed that there was little hope of receiving help with flood defences; it was deemed not cost-effective due to the small size of the population.¹⁴</p>	<p>Potential negative impacts if community planning is dominated by one specific interest group that does not take into account the needs of others, which could lead to mal-adaptation for some vulnerable communities.</p>	<p>Ensure community planning is undertaken through an inclusive approach and with knowledge of all local communities likely to be vulnerable to climate change.</p>	<p>LAs, civil society advocacy organisations and community groups.</p>
Community-run initiatives	All				

(continued overleaf)

Table 9 continued

Adaptation measure	Climate change impact	Potential social justice implications and evidence of principles		Measures to improve social justice	Organisation responsible for action
		Positive	Negative		
DELIVERY OF ADAPTATION ACTIONS continued					
Service delivery	All	<p>Ensuring that climate change adaptation is embedded in service delivery across all departments should ensure just adaptation.</p> <p>The involvement of local residents in planning and designing service delivery, including adaptation elements, should ensure this is best suited to the needs of vulnerable communities.</p> <p>Building capacity in risk management across all council services has been undertaken by Highland Council, with risk workshops held with all seven council services. Workshops were also held with land users, Highland Youth Group and rural communities.¹⁵</p> <p>Gloucestershire Council also used workshops to raise awareness of the risk management approach to adaptation, which resulted in adaptation becoming embedded in corporate frameworks such as emergency planning, procurement, induction and performance management.¹⁶</p>	<p>Delivery of services without any involvement of vulnerable communities could lead to mal-adaptation.</p>	<p>Corporate commitment; mainstreaming and specific measures such as all council reports having to identify their impacts for climate adaptation.</p>	<p>LAs plus other local agencies such as health organisations, housing associations and civil society organisations.</p>

Source: SQW

APPENDIX V: REVIEW OF CLIMATE CHANGE ADAPTATION TOOLS

Table 10 below provides a brief summary of the tools currently available to LAs for undertaking climate change adaptation planning and implementation. Following this is a brief commentary and recommendations for the development and refinement of future adaptation tools to ensure that these fully take account of social justice implications.

Table 10: Tools available to local authorities to assist with climate change adaptation planning and implementation

Name	Type	Author/source	Scope
AdaptME toolkit	Practical	UKCIP	Provides practical tools to help local authorities and other organisations evaluate current adaptation activities.
AdOpt – identifying adaptation options	Practical	UKCIP	Provides guidance on identifying and selecting adaptation options for use in responding to climate risk – suitable for LAs and other organisations wishing to design and deliver adaptation planning and action.
<i>Anticipatory Governance: a Tool for Climate Change Adaptation</i>	Academic	Ray Quay (2010)	Academic paper that sets out a suggested approach for local authorities to use in developing an adaptation plan, based on the American experience. Primarily focused on physical response, but includes consideration of the ‘triple bottom line’ – identifying adaptation options that have net economic, social and environmental benefits.
BACLIAT – Business Areas Climate Impacts Assessment Tool	Practical	UKCIP	Focuses on businesses providing practical advice to help users explore the implications of climate change for their business or sector.
CLARA – Climate Change Adaptation Resource for Advisors	Practical	UKCIP	Practical resource intended to help business advisors support SMEs in understanding and preparing for the impacts of climate change.
Climate PACT (Performance Acceleration through Capacity-building Tool)	Practical	Designed by Alexander Ballard with Hampshire County Council	Shows how organisations improve their response to climate change in six predictable stages, becoming able to handle issues of increasing complexity as they understand the issue better and build their own capacity. Suitable for local authorities, other agencies and businesses. Includes awareness of social impacts.
Climate risk and vulnerabilities assessment tool	Academic	GRaBS	The aim of this component of the GRaBS project (led by the University of Manchester) is to develop an innovative online Geographical Information System (GIS)-based assessment tool to highlight climate change risks and vulnerabilities in urban areas, and promote increased awareness and understanding on hazards, exposure and vulnerabilities associated with climate change and facilitate improved decision-making and policies. We understand that this aspect of the project is still under development.

(continued overleaf)

Table 10 continued

Name	Type	Author/source	Scope
Community-based adaptation	Practical	International Institute for Environment and Development, others	Community-based adaptation is an approach to adaptation pioneered in the developing world. It involves the use of NGOs and community groups to engage communities affected by climate change using their own language. Following a learning stage, an adaptation project is set up much like a community development project. The adaptation element introduces the community to the notion of climate risk and then factors that into their activities. Community-based adaptation involves mobilising communities to take part in adaptation activities and harnessing social capital (see Ebi, 2008a; Dumaru, 2010).
Cost-benefit analysis	Various	Various	Cost-benefit analysis is a tried-and-tested economic technique for assigning monetary values to the costs and benefits of decisions or interventions. Standard internationally recognised values exist that can be applied to social benefits, for example the cost of a death avoided. However, there is typically little consideration given to the distribution of costs and benefits.
Costing adaptation	Practical	UKCIP	Costing the impacts of climate change is a practical method for calculating the costs of climate impacts and comparing these with the costs of adaptation.
Equality Impact Assessment (EqIA)	Practical	–	An EqIA is an analysis of a policy, service or function. It is a tool to enable public sector bodies to assess the implications of their decisions on the whole community. The aim is to eliminate discrimination, tackle inequality, develop a better understanding of communities, target resources efficiently and adhere to the transparency and accountability element of the Public Sector Equality Duty (IDeA).
IDeA resources	Practical	Improvement and Development Agency (IDeA)	The IDeA website provides a range of information for local authorities on adaptation, including guidance, best practice case studies from the UK and abroad, information on policy and legislation, and help with developing adaptation strategies and plans.
LCLIP – Local Climate Impact Profile	Practical	UKCIP	Resources that local authorities can compile so that they can better understand their exposure to weather and climate.
LGA publications	Practical	Local Government Association	The LGA has provided publications on adaptation and posts links to best practice examples on its website.

(continued overleaf)

Table 10 continued

Name	Type	Author/source	Scope
Nottingham Declaration action pack	Practical	Energy Saving Trust	The Nottingham Declaration Partnership, hosted by the Energy Saving Trust, provides a range of resources for local authorities signing up to climate change planning (including mitigation as well as adaptation measures). These include checklists, and help with drafting and implementation.
Risk framework	Practical	UKCIP	Step-by-step decision-making framework to help local authorities and other organisations to judge the significance of climate change risk compared with other risks faced to identify the most appropriate adaptation measures.
Socio-economic scenarios	Practical	UKCIP	These scenarios are intended to help local authorities and other organisations explore what future worlds might look like and to consider how vulnerability to climate change and adaptation responses might vary with different worlds.
Social Return on Investment (SROI)	Practical	SROI Network	SROI attempts to improve cost-benefit analyses by including the 'voices of people typically excluded from markets'. It incorporates many traditional environmental economics techniques such as hedonic pricing and willingness-to-pay.
Sustainability Appraisal (SA)	Practical	–	SA is a tool to promote sustainable development through the better integration of sustainability considerations into planning for development. Economic, social and environmental objectives must all be considered.
<i>The Climate Learning Ladder: a Pragmatic Procedure to Support Climate Adaptation</i>	Academic	Tabara, et al. (2010)	Academic paper that sets out a suggested approach for institutions – including local authorities – to use in developing an adaptation plan, based on international case study experience. Considers adaptation as a 'multi-step social process' that takes full account of the social and behaviour change issues.
The Green Book and regulatory impact assessments	Practical	HM Treasury	Requires decision-makers to take account of social impacts, as well as 'differential impacts' and 'other distributional issues which may also arise due to age, gender, ethnic group, health, skill or location' in order to promote fairness.

(continued overleaf)

Table 10 continued

Name	Type	Author/source	Scope
TNS – The Natural Step	Other	Forum for the Future	TNS is an international sustainable development charity, for which Forum for the Future holds the licence in the UK. Using the internationally endorsed and tested TNS Framework, businesses, government agencies, policy-makers, individuals and communities are engaged in training and partnerships, research and development, and community involvement to lead the transition to an ecologically, socially and economically sustainable future. The Natural Step has been applied by local authorities, for example Leeds, in producing its climate change strategy, and has the potential to build in social justice although the primary focus is on tangible physical responses.
<i>The 2010 Coastal Regeneration Handbook</i>	Practical	Coastal Communities Alliance	Comprehensive guide to the issues facing British coastal resorts. Sets out suggestions for an holistic approach to regeneration of coastal areas, incorporating both adaptation measures and community regeneration efforts.
UKCIP adaptation wizard and adaptation checklist	Practical	UKCIP	The adaptation wizard is a tool for local authorities or other organisations to help them develop their adaptation response. It includes some consideration of social issues.
Vulnerability maps	Practical	Various	Vulnerability maps combine data such as that described under the Prevalent Vulnerability Index described above, with GIS to identify vulnerable locations.

Recommendations for the development/refinement of adaptation tools to ensure that these encourage just adaptation responses

Table 10 highlights a multitude of existing tools that are currently in use and have the potential to assess the social justice implications of adaptation, although the majority are not explicit in ensuring that social justice issues are embedded. They range from the Climate PACT (Performance Acceleration through Capacity-building Tool) produced by Hampshire County Council, to the UKCIP adaptation wizard, to national government guidance on equality impact assessment and strategic environmental assessment.

A key recommendation from this review is the need for tools to build on rather than duplicate the multiplicity of tools already in existence. In the LGG (2010) survey, the NI 188 guidance notes and tools that can be accessed from the Nottingham Declaration website were used by 88 per cent and 82 per cent of LAs in planning for climate change – the website was more frequently cited than any other adaptation source. As the Nottingham Declaration is being refreshed and the Environment Agency will be reviewing UKCIP's adaptation tools, there is a timely opportunity to take the key principles from this research and apply these to adaptation tools currently being refined to ensure that social justice is embedded.

Our research suggested some key principles in refining existing tools, and developing new tools for adaptation and social justice.

Key principles to ensure climate change adaptation tools take account of social justice

The social justice issues related to adaptation are both diverse and very contextually specific (Paavola, 2011). Tools will need to enable the user to research their specific context in a way that makes an effort to understand the nature and incidence of key climate change impacts, the sources and incidence of vulnerability in the community, the range of adaptation strategies that are potentially available, and the obstacles to actually using and implementing them.

Tools will need to address:

- **procedural justice** – including how to empower communities to overcome lack of social capital and institutional barriers to be involved in decision making
- **distributive justice** – in terms of distribution of income, assets and opportunity, for example, and in particular the distribution of benefits and costs of adaptive actions (Paavola, 2011)¹⁷

Key principles required to achieve both in the development of tools should reflect those identified in Section 2 as key to achieving just adaptation:

- take into account current and future climate change impacts
- understand the different factors that contribute to vulnerability
- identify the distribution of vulnerable groups likely to be affected and recognise that vulnerability is dynamic and changes over time
- involve the communities most likely to be affected in developing and delivering plans and activities related to adaptation and supporting community resilience in the longer term

- assess the potential adverse implications of climate change for vulnerable groups and identify targeted adaptation activities to address vulnerability
- develop responses that both build adaptive capacity and support adaptation actions, and consider both physical infrastructure and service delivery
- be aware of the trade-offs that can arise in striving to achieve socially just adaptation and minimising the negative impacts for vulnerable communities as far as possible
- consider and assess all adaptation options to ensure that the most beneficial are taken forward

In addition, tools should:

- **take account of reduced resources available in LAs and other local organisations, specifically third sector.** As one respondent to the LGG (2010) survey stated 'It seems that there is a plethora of documents, good practice guides, training workshops and support agencies. What we lack are people to deliver activity and take advantage of the support packages on offer'.
- **understand what levers remain to influence LAs and other partners.** Key opportunities are identified as: leading LAs and LEPs to create interest in others, potentially facilitating transfer of good practice; new revenue streams related to climate change will attract local authority action; LEPs and LNPs provide positive reinforcement of transition to a low carbon economy; neighbourhood plans provide an opportunity to plan for local sustainable outcomes.
- **understand who within the LA or other organisation is empowered to take action.** As one respondent to the LGG (2010) survey highlighted, 'The Council does not have a planning officer, or other officer for that matter, that specialises in climate change. Different aspects of the portfolio are spread across several people in several departments. This invariably leads to problems through a lack of dialogue'. Ideally this should be a senior officer within the Chief Executive's Department reflecting the corporate priority given to the agenda.
- **be applicable to a range of organisations, not specifically focused at LAs.** As stressed throughout this report, LAs do not have sole responsibility for climate change and other organisations need to build future climate change risk and resilience into their plans even if there are not prescribed requirements to do so.

Tools should not underestimate the capacities of communities themselves to formulate answers and coproduction should be a key part of any new tool development (Holstein, 2010; Williams, *et al.*, 2010).

Source: SQW

ABOUT THE AUTHORS

Rachel Brisley, formerly Senior Consultant at SQW, has a background in physical, social and economic regeneration in the voluntary and community, public and private sectors. She has extensive experience of the low carbon agenda in assignments across the UK and Europe, and specific expertise in relating global issues to impacts on local communities.

Jean Welstead, previously Associate Director at SQW, is a sustainability consultant working in the areas of low carbon, renewable energy, adaptation and social justice across the UK. Her work seeks to integrate academic, policy and practitioner approaches to develop sustainable solutions and good practice, with a focus on practical guidance and support.

Richard Hindle, a Director of SQW, trained as an economist. He has led and played significant roles in delivering a wide range of research-based assignments, focusing on how places work, local competitiveness, and policy and organisational responses to changing economic, environmental and social conditions.

Jouni Paavola is Professor of Environmental Social Science in the School of Earth and Environment at the University of Leeds. He is Deputy Director of the ESRC-funded Centre for Climate Change Economics and Policy (CCCEP) and Co-Director of the Sustainability Research Institute. His research examines social justice aspects of environmental governance, particularly of adaptation to climate change and conservation of biodiversity.

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www.jrf.org.uk