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EVIDENCE REVIEW
3

Dartington review on the future of adult social care: *Personalisation, sustainability and adult social care: strengthening resilient communities*

Jon Rae

Dartington

Dartington review on the future of adult social care:
Personalisation, sustainability and adult social care: strengthening resilient communities

Jon Rae

Transformative learning for sustainable living
Schumacher College

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Summary

Adult social services are critical to the sustainability agenda of local authorities, from cutting carbon and driving economic efficiencies to stimulating local economic diversification and community resilience. Sustainability in its broadest sense is the successful continuation and adaptation of civilisation. Whether sustainability is applied to society as a whole, or to a subsystem such as a faith group, business or social service, at the heart of the concept is the inseparable relationship between society and ecology. Climate change and fuel price inflation are the two socio-ecological variables identified here that will be most critical for adult social services in the coming decade (2010-2020). Heatwaves, droughts and flooding are forecast to become more frequent and energy prices are predicted to escalate in real terms through to 2020 and beyond. The shift away from 'command and control' to 'personalisation' through direct payments and personalised budgets within adult social care and by other means across the public sector, represent both new opportunities and risks in mitigation and adaptation to climate change and the resilience of local community services. During this decade of austerity, real financial savings can be achieved both directly through mitigation and indirectly through greater avoidance of crisis management. The more radical prize of an integrative roll-out of personalisation is the building of socio-economic capital in communities and their ability to evolve services in the rapidly changing environment that will be the hallmark of this century.

Introduction

Sustainability in its broadest sense is the successful continuation and adaptation of civilisation. Whether sustainability is applied to society as a whole, or to a subsystem such as a faith group, business or social service, at the heart of the concept is the inseparable and inter-dependent relationship between society and ecology. Ecosystems and social systems cannot be managed in isolation, and as climate change demonstrates, the repercussions from doing so have gone from local and regional to global. These strong interactions mean that feedbacks between them must be taken into account at all scales. The importance and ramifications of this relationship are only now beginning to be addressed within adult social services or elsewhere. This paper explores the implications for adult social services of two key variables, climate change and energy. These complement the three key social variables already identified in the Dartington Review as having the greatest potential to influence social care over the coming decade.

The three social variables are an expanding and ageing population, repercussions of the economic crisis, and vulnerabilities associated with care worker recruitment and retention. Personalisation of care is seen as a route through this crisis and is a paradigm shift within social care that seeks system change away from 'command and control' to 'empowering and co-ordinating' support need and delivery. This paper expands the analysis of adult social services from a social-ecological approach to examine the implications of climate change and fuel price inflation for care and support services and the roll-out of the personalisation agenda. What becomes evident is that through personalisation, local authorities have an unrivalled opportunity to strengthen the sustainability of adult social services and the broader resilience of local communities.

Conceptual framework

Social-ecological systems such as adult social services are complex and adaptive. They do not change in predictable, linear or incremental fashion. Rather they have a capacity to exist in more than one kind of regime in which function, structure and feedbacks are different. Resilience thinking provides a framework for viewing systems, with a focus on how the system changes and copes with disturbance. Resilience, a system's capacity to absorb disturbances without precipitating a regime shift, is the key to sustainability. A policy objective may be to maintain a system or shift it to a new regime, as is the intention embodied in the personalisation agenda. A systems approach helps manage that transition, with resilience thinking underpinning the new regime's ability to adapt and maintain desirable levels of social care in an uncertain and surprising world.

Shocks and disturbances to social-ecological systems (for example energy price spikes, heat waves or budget cuts) can drive them across a threshold into a different regime, often with unwelcome surprises. Resilience is the capacity to undergo change whilst retaining essentially the same function, structure and feedbacks rather than crossing a threshold to a different regime. A system in a 'desirable' regime has greater capacity to continue providing goods and services that support a chosen quality of care while being subjected to a variety of shocks. Knowing what these are can help keep a desirable regime or, by the same token, shift to such a regime.

The fundamental shift in purchasing power from the local authority to the individual through personal budgets, promoted by the *Putting People First* policy, is a regime change by design, with new functions, structure and feedbacks within the authority and across the local economy. Resilience, in this new regime, will be very different to the old, incorporating elements but shifting the focus to the local economy and society for the maintenance of care. This democratisation of millions in spend has the potential to stimulate and diversify the local socio-economy. Both diversification and modularisation are key characteristics of broader community resilience, making personalisation a vehicle for the broader agenda on building sustainable communities. This feedback can be strengthened with a social-ecological approach to personalisation roll-out.

Within social-ecological systems, attention is given to drivers that result in crossing thresholds into new regimes, knowing where those thresholds might lie, and enhancing aspects of the system that enable it to maintain its resilience. These drivers are otherwise known as 'slow variables'. The recent global economic crisis suggests that the slow variables are all too easily overlooked. The Dartington review on the future of adult social care has so far identified three slow variables that have the greatest potential in the coming decade (2010-2020) of reducing the resilience of existing care and support services: (1) recruitment and support of care workers, (2) economic recession and retrenchment and (3) the expanding and aging population.

This paper has been sought to examine the broader social-ecological context of adult social services and the identification and implications of additional so far unrecognised slow variables that are likely to test the resilience of care services in the coming decade.

Sustainability in the 21st Century is characterised by the need to find a route through six principal issues: climate change, energy security, biodiversity collapse, natural resource depletion, political-economic uncertainty, and human population - be it the aggregate or age profile. To these can be added the need for a broader philosophical shift, such as that now underway in economics with the growing recognition of the importance of human behaviour and ecology. The slow variables of population and political-economic uncertainty are already valued through personalisation and identified and dealt with elsewhere in the Dartington Review. Of the remainder, climate change and energy security, more than biodiversity and natural resources, are the slow variables identified here as dominating the context of the coming decade for social care as well as for the broader local community. Biodiversity and natural resources will be critical variables over the longer term; as Wilson (2010) recently commented, life can survive climate change but it cannot survive the loss of biodiversity.

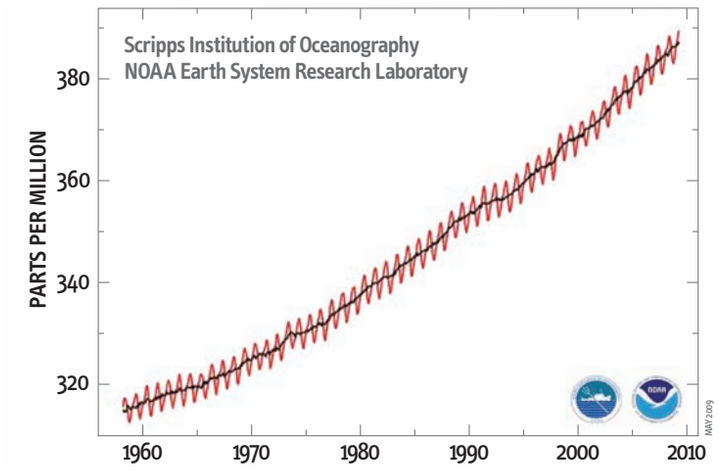
Climate change

The science underpinning the impact and feedbacks of anthropocentric (human source) emissions of greenhouse gases on local, regional and global climate is unambiguous and supported by a broad professional consensus. The climate is already changing due to human activity and concentrations of atmospheric greenhouse gases are rising at an increasing rate. Global climate, rather than weather, is a complex social-ecological system where change is not predictable, linear or incremental. The slow variable is the concentration of greenhouse gases, of which carbon dioxide (CO2) is the most important, accounting for approximately 60% of warming potential. For ease of understanding the other greenhouse gases such as methane and CFCs are converted to their CO2 equivalent (CO2e).

Greenhouse gases (GHG) are essential for maintaining atmospheric temperatures suitable for life on earth. Throughout the history of life on the planet these gases have been held within a zone tolerable for life. This has been achieved through cycling of these gases between the atmosphere, biosphere and geology where the agency of life has played a key 'regulating' role. Without preindustrial CO2 levels of 280 parts per million (ppm) earth surface temperatures are estimated at minus 32°C. Upwards of two-thirds of anthropocentric emissions of GHG derive from the tapping and burning of buried carbon in the form of oil, gas and coal. Increased uptake of CO2 by vegetation and the oceans has to date partially cushioned the impact on climate of rising emissions, though the capacity of these sinks is finite. Figure 1 shows the rise in CO2 atmospheric concentrations at an average rate of 1.1% per annum in 1990-1999, increasing to an average of 3% in the period 2000-2007.

FIGURE 1

The rise in global CO2 atmospheric concentrations



Rising greenhouse gas concentrations are already impacting on atmospheric temperatures. Given the oceanic and atmospheric circulations, temperature increases, though happening across the globe, are concentrated in higher latitudes. So whereas average global temperatures have increased by 0.7°C since 1750, southern England temperatures have risen by 1.4°C; in Polar and Arctic regions increases have surpassed 2.0°C. Figure 2 details the average annual temperature anomaly for the UK since 1750 above the 1961-1990 long-term average. A sharp rise since the mid 1980s is graphically illustrated in Figure 3 with years from the last two decades dominating the top 20 positions.

FIGURE 2

UK annual temperature anomaly from the 1961-90 average

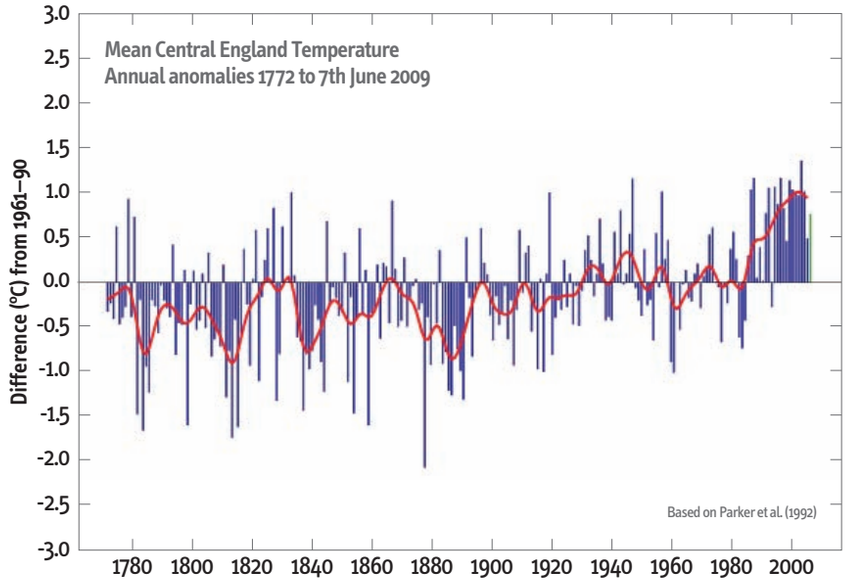
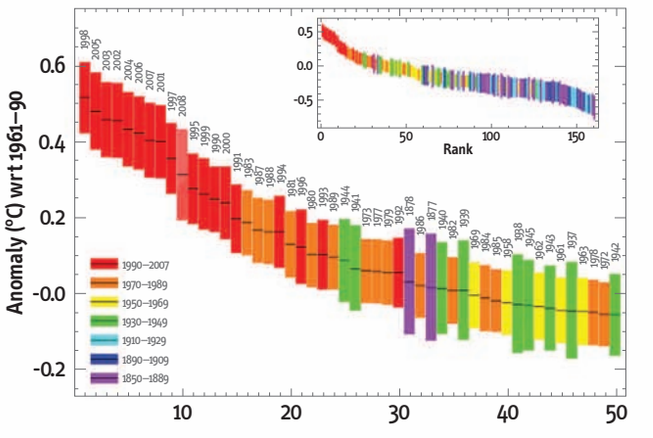


FIGURE 3

Top 50 hottest years in the UK since 1850



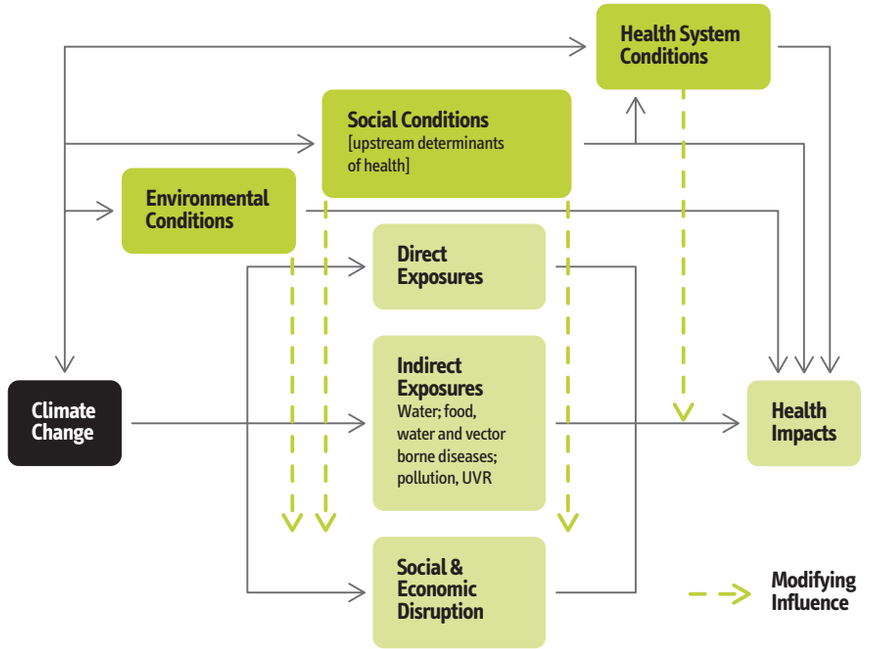
Rising temperatures are creating and accelerating climate biosphere feedbacks. The melting of permafrost and the release of methane this entails will add significantly to atmospheric GHG loads. The disappearing summer polar ice cap, expected by the 2020s, will further raise oceanic temperatures, not only stimulating storm systems over the Atlantic but reducing the capacity for oceans to absorb CO2. These are only two of a range of feedbacks with other systems, each with their own thresholds but with the shared slow variable of rising temperatures. The latest Met Office Hadley Centre models predict an increase of mean annual temperature in the UK of between 3.5 and 4 degrees centigrade by the end of the century. Periods of very cold weather will become less common, but periods of very hot weather (heatwaves) will become more common. Changes in wind and rainfall are less certain, but periods of sudden heavy rain seem likely to become more common despite a possible reduction in annual rainfall in some areas. Flooding is an increasing risk.

Climate change and social care

There is a growing wealth of research on the socio-economic impacts of climate change on vulnerable adults and children under five. Though much of this research has focused on mortality rates rather than the 'escalation of need', it does emphasise the role of circumstance - both social and structural - in attenuating the impact of climate change on vulnerable populations. The social-ecological relationships between climate change and health are schematically represented in Figure 4. Exposure is divided between direct and indirect. The direct are heat and heatwaves, floods and wind storms, and ultraviolet radiation (UVR). The indirect pathways are diseases borne by water, food and vectors, as well as psychological illness. Of these, heat, heat waves and floods are forecast to have the greatest impact on vulnerable adults and children through to 2020 and beyond; before looking at these in greater detail, summaries will be given of the others.

FIGURE 4

Schematic diagram of pathways by which climate change affects health, and concurrent direct-acting and modifying



Vector-borne disease

The complexity of vector-borne disease systems emphasises that any expectation of a simple consistent response to climate change, i.e. a universal worsening of the situation, is misplaced. To date there is no single infectious disease whose increased incidence over recent decades can be reliably attributed to climate change (Ostfeld, 2009). Disease is the result of complex interactions between the vertebrate host, the invertebrate vector and the parasite (viruses, bacteria, etc.). Each partner in the triangle is responsive to climate, other environmental and ecological changes in ways that make it very difficult to predict the altered outcome of these interactions. Caution is therefore needed in drawing conclusions about the future incidence of infection from existing relationships between single climatic variables and disease. The Department of Health's 2008 report *Health Effects of Climate Change* in the UK warns that there is more than a single variable that determines transmission rates, 'and correlations observed today may fall apart, or at least change shape, if the underlying biological processes are disrupted by climate change beyond the normal fluctuations upon which those correlations are based' (p35).

Food poisoning

There is a correlation between seasonality and food poisoning suggesting that climate change could affect the microbiological safety of food and increase food poisoning risk (McMichael et al, 1996). Kovats et al (2004) have found strong evidence that environmental temperatures affect the risk of food poisoning by Salmonella, predicting an estimated increase of +12.5% per 1°C. Better hygiene has however reduced the incidences of Salmonella over the past decade. Greater attention is now focused on other pathogens and their temperature sensitivity, especially Campylobacter. Unfortunately the published evidence remains insufficient to estimate reliably the potential effect of changes in temperature on campylobacteriosis. The DoH 2008 report concludes that on balance 'a 1°C increase in temperature might result in about a 4.5% increase in food poisoning' (p74).

Water-borne diseases and drought

One of the evident consequences of climate change is the more severe rainfall events experienced and predicted. In these situations both fertilisers - in particular nitrogen - and microbial contaminants present in biosolids or manures applied to farm land may be transferred to surface water sources more rapidly than under conditions of more 'normal' events. The former contributes to the heavy nutrient loading – or eutrophication – stimulating algae plumes that can be toxic or create temporary anaerobic conditions in the water column. Biosolids carry water-borne diseases amongst which the rise in Cryptosporidiosis is the most significant associated with the public water supply in the UK (Kovats et al, 2004). Both are the focus of legislation and improvements in farming practices (Sopwith et al, 2005).

Of most significance with reference to rainfall events is the consequence of flooding and drought, in particular a failure of the domestic water supply. The potential health effects of standpipes and other methods of water delivery include infectious intestinal diseases due to contamination of water and reduced hygiene. Access to sufficient water for older people, disabled people and the less mobile would be a concern. Localised water shortages may be particularly important in South-East England due to population growth and climate change (HPA, 2006 in DoH, 2008).

Ultraviolet radiation

Greenhouse-gas-induced climate change is expected to increase the levels of ultraviolet radiation (UVR), decreasing cloud cover during spring and summer. If there are no changes in human behaviour, increases in UVR will lead to a rise in associated health effects. Longer summers and changes in cloud cover may lead to changes in behaviour that are probably more important for personal UVR exposure.

Heat, heatwaves and pollution

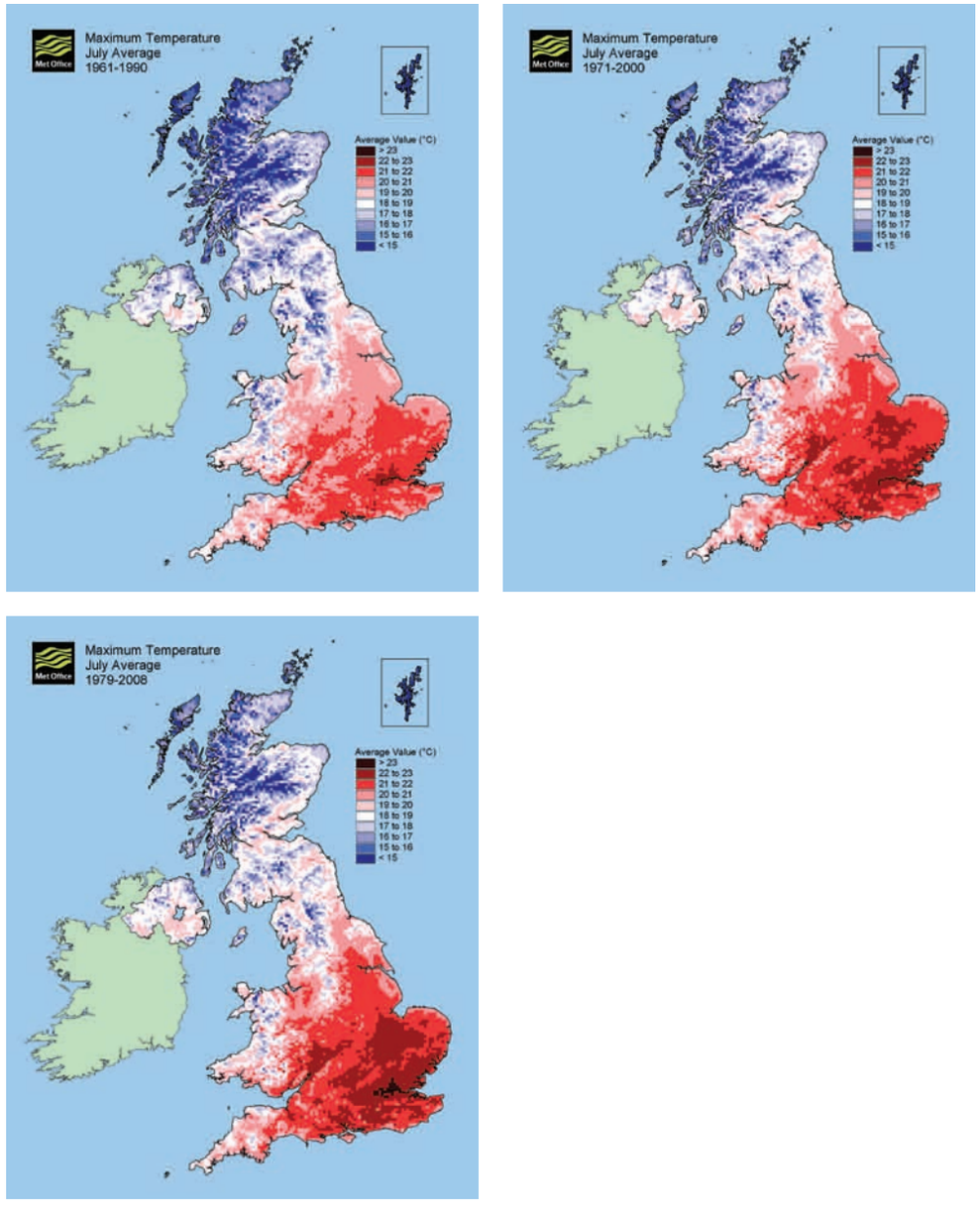
Hot days, hot nights and heatwaves have become more frequent (IPCC, 2007) and these are associated with marked short-term increases in mortality. Human vulnerability to heat increases when ambient temperature is higher than skin temperature and the only effective heat loss mechanism is sweating. Factors that reduce the effectiveness of sweating, strain the cardiovascular system, or that lead to dehydration can cause the body to overheat. Further, thermoregulation can be impaired in older people and those with long-term conditions, and potentially in those taking some medications, rendering the body more vulnerable to overheating.

Local attenuating circumstances are important in determining the underlying temperature–mortality relationship, including topography, heat-island magnitude (see Figure 5), socio-economic status, isolation and age (Hajat, 2006). Evidence also suggests that older women appear to be more vulnerable to the effects of heat than older men (Poumadere et al, 2007). High temperatures contribute to about 0.5-2% of annual mortality in older age groups in Europe (Pattenden et al, 2003; Hajat et al, 2006), although large uncertainty remains in quantifying this burden in terms of years of life lost. The flip side to rising heat is the reduction in cold weather and related deaths through winter. Annual cold-related mortality during 1971-2003 fell by more than 33%, with further falls forecast in the coming decade. The escalation in need for social care is not recorded.

A 2006 study on the rise in heat and the correlation with mortality rates in the UK reveals a linear relationship between the two, with an estimated 75 extra deaths per week for each degree of increase above 23°C (NHS, 2009). Consecutive days of higher temperatures and air pollution contributed to this mortality rate as did the effect of heat on the cardiovascular system. The rise in UK temperature is illustrated in Figure 5, demonstrating a concentration of baseline heat in the South East with an average increase of 1.4°C. The period 1979–2008 witnessed for the first time an average maximum July temperature of above 23°C for the London area. Whereas there is no evidence of rises in the mean annual heat-related mortality rate for the UK over the period 1971–2003 (DoH 2008), the rising baseline summer temperature above the 23°C threshold, and the geographical spread of this zone in the coming decade, suggests this will not be maintained.

FIGURE 5

Decadal increases in average maximum daily temperatures in July (temperatures 23°C and above are associated with rising mortality of vulnerable adults)



Heatwaves are associated with marked short-term increases in mortality and are of specific concern. Threshold temperatures differ across the country and are deemed a significant threat to life when experienced over two or more consecutive days, with corresponding night time temperatures (see Figure 6). The 2006 heatwave referenced above was surpassed in the UK by the exceptional events of 1995, 1998 and 2003. The former resulted in an increase of 8.9%, the latter 16%, in temperature-related mortality (Poumadere et al, 2007).

The summer of 2003 was probably the hottest European summer since 1500 (Luterbacher et al, 2004). In August of that year a heatwave in France caused an estimated 14,947 deaths; Figure 7 gives the figures for Paris. Much of continental Europe reported excess mortality whilst in the UK an additional 1,600 deaths were recorded mainly in the south east region. Overall, total deaths from the event were 35,000 (Hemon and Jougla, 2004; Poumadere et al, 2007). There are no records on the raised levels in the escalation of needs. In France, around 60% of the heatwave deaths occurred in persons aged 75 and over (Hemon and Jougla, 2004). Within Paris 92% of those who died lived alone (41% in one-room apartments). Some 52% lived in the top two floors of buildings where heat concentrates (35% on the top floor). Other harmful exposures were also caused or exacerbated by outdoor air pollutants include tropospheric ozone and particulate matter – both largely indirect and direct products of exhaust fumes (EEA, 2003). In response to the 2003 event the Department of Health published the 'Heatwave' Plan for councils, care workers and care homes which is updated and re-launched each year.

Based on estimations by the Met Office Hadley Centre, the DOH 2008 Climate Change Report suggests that the equivalent of the 2003 event for the South of England 'will be encountered occasionally until about 2030 (approximately 4 times in the 40-year period)'. After this such heatwaves will occur ever more frequently, escalating in intensity and duration after 2060 (ibid). The report specifically predicts that in the next decade there is a one in four risk of South East England experiencing an extreme heatwave, which will cause over 3,000 immediate deaths and more than 6,350 heat-related deaths throughout that summer. Figure 8 back-casts the Met Office's leading climate change model couched in confidence levels alongside real data (black line) and projections through to 2015 (green line). The baseline for the global temperature anomaly is the average temperature for the period 1961-1990; the globally hot years of 1998 and 2003 are identified, as is the cooling effect of Mount Pinatubo. The temperature anomaly downturn in 2007 and 2008 is in part the result of Al Nina. The 1998 anomaly level, the hottest year on record, is surpassed by 2011.

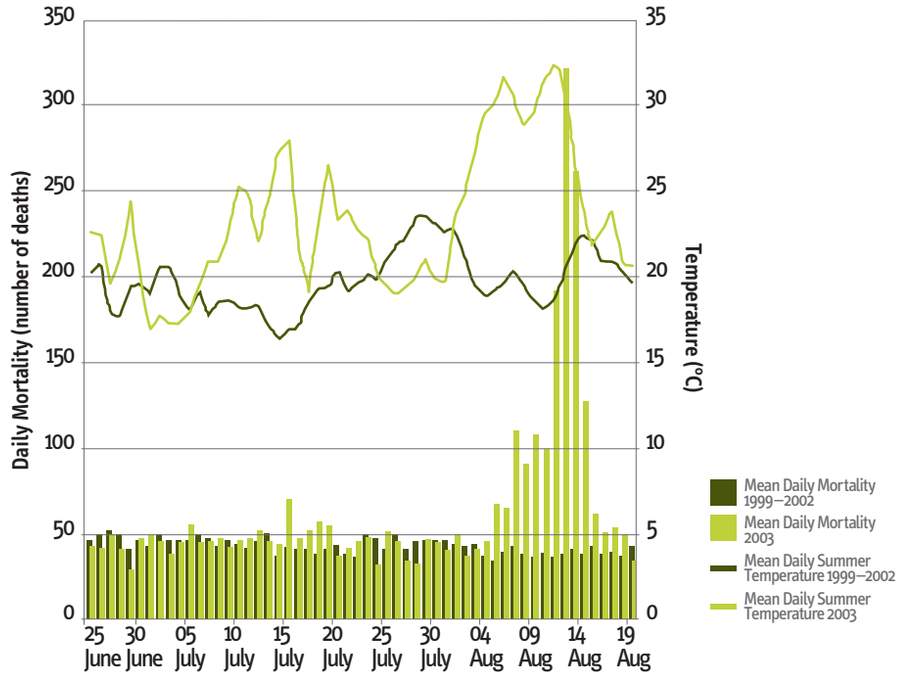
FIGURE 6

England and Wales heat health thresholds

Region	Day max (°C)	Night min (°C)
North East England	28	15
North West England	30	15
Yorkshire & Humber	29	15
East Midlands	30	15
West Midlands	30	15
East of England	30	15
South East England	31	16
London	32	18
South West England	30	15
Wales	30	15

FIGURE 7

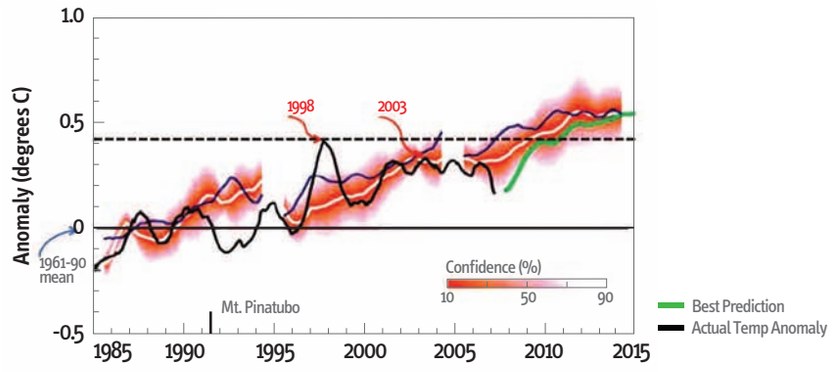
Increase in daily mortality in Paris during the heatwave in early August



Vandentorren and Empereur-Bissonnet, 2005

FIGURE 8

Met Office Hadley Centre 5 year global temperature anomaly predictions



Flooding

Floods and windstorms are a regular occurrence in the UK and are high-impact events that can overwhelm physical infrastructure, human resilience and social organisation. Such events pose a significant risk to those with particular needs and though there is little research beyond mortality anomalies, evidence suggests that floods escalate the need for social care. Floods are the most frequent natural weather disaster in the UK, with exceptional events in 2000, 2002, 2005, 2007, 2008 and 2009. The 2007 event in Gloucestershire saw one and half months rainfall in one July day, flooding 5,000 homes, cutting off water to 350,000 households, and leaving 42,000 without power; power to the whole county as well as parts of Wales and Herefordshire also came under serious threat.

Floods are the result of interaction across rainfall, surface runoff, evaporation, wind, sea level and local topography. In inland areas, flood events vary substantially depending on catchment size and topography. Water management practices, urbanisation, intensified land use and forestry can substantially alter the risks of floods (EEA, 2005). Windstorms are often associated with floods, be it ocean storm surges or inland floods. Coastal flooding will be exasperated by sea level rise through both thermal expansion and glacial melt, but is not expected to be an important factor in the coming decade.

Despite the prevalence of floods in the UK there has been little research on the health effects of flooding. The Pitt River Review commissioned as a consequence of the 2007 floods examined all aspects of flood planning and management. With respect to health, it concluded that although there was little evidence of the long-term health effects and impact of flooding, the limited evidence available suggests that there are significant short and long-term impacts on psychological psycho-social

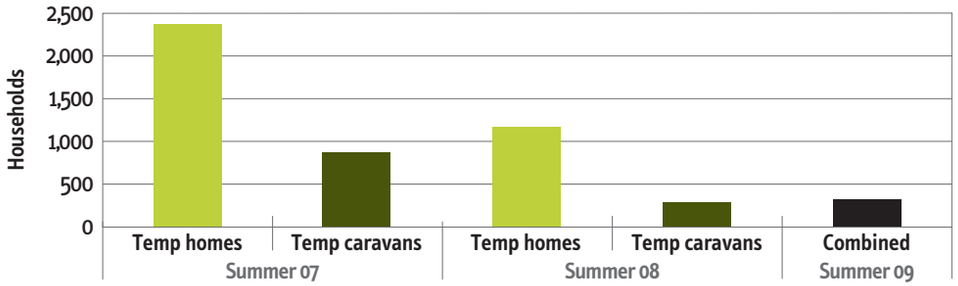
health. It has been estimated that 2.1 million homes and 130,000 businesses are vulnerable to flooding (House of Commons, 2007; Howe and White, 2004) with risks to life, mental illness and infectious diseases (Hajat et al, 2003). A study of the flooding in Lewes in 2002 found 'strikingly high' levels of psychological distress, with 48% of those flooded out still suffering nine months later (Reacher et al, 2004). Important knowledge gaps remain in the UK regarding the impact of flood events on long-term anxiety and depression, or on health and social services.

More substantial research on the health impact of flooding followed Hurricane Katrina in 2006. The immediate death toll in New Orleans from flooding was 1836, with death rates in the remainder of the year 47% higher than 2002–03 rates. Evidence suggests that there has been reduced access to mental health services for existing mental health patients and for those with new conditions. The two years post-Katrina have witnessed a significant rise in the number of mental health disorders, with an increase in the prevalence of posttraumatic stress disorder (25%), serious mental illness (20%) and suicide (110%) (Kessler, 2007; Kessler et al, 2008).

In the summer of 2007, Hull received 100mm rainfall in 24 hours and experienced the worst floods on city records. A total of 8,657 homes, 1,986 owned by the council, were flooded as were 91 of the 99 schools and 1,300 businesses. Two years later 302 households are still in temporary accommodation (see Figure 9). Of all those affected by the Hull floods overall, 64% said that their health had been adversely affected, most commonly with stress, anxiety and depression, but also with a range of conditions, including dermatitis, worsening asthma, arthritis and chest infections. Children moving out of their home were more likely to suffer emotional health problems. Debt related problems were common, leading to a large increase in calls to Citizens Advice Bureau in relation to temporary accommodation, negotiating with insurance companies and mortgage companies while their houses are rebuilt, loss of social contact and strain on personal relationships. A financial stress survey of Citizen Advice Bureaux following the floods identified a rise in mortgage arrears of 134%, rent arrears of 107% and council tax arrears of 115%. However, even those returning to their homes can experience ongoing anxiety, a lack of security and loss of a sense of home. These impacts extend beyond individual families to the community, both in terms of damage and usability of existing community facilities and changes in traditional support networks because of displaced families.

FIGURE 9

Households displaced by the summer 2007 floods in Hull



Fossil fuels

Three institutions make public long term energy forecasts: the International Energy Agency (IEA), US Energy Information Administration and the OPEC Secretariat. Only one has conducted a detailed analysis, field-by-field, on supply: the IEA. The Agency is an intergovernmental organisation that acts as energy policy advisor to 28 - mostly OECD - member countries. Its lead annual publication is the Energy Outlook Report and in 2008 it reported on the largest supply survey publically available and traced a mark rise in oil and gas price over the coming decade driven by rising costs of abstraction. Alongside supply constraint, the report highlights the shift in ownership from multinationals to state governments, and the shift in incentives this entails: less market influence and more domestic pre-occupations to deliver schools and other social benefits. The price of gas, at least in Europe, shadows the price of oil and both are vulnerable at a regional level in the medium term to political insecurities.

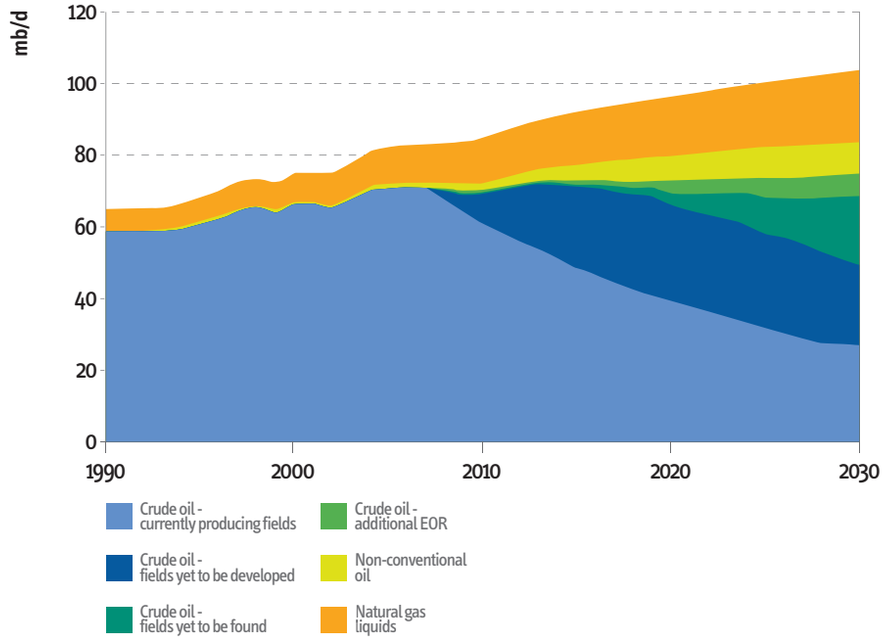
The IEA 2007-2008 survey covered 800 of the largest fields in the world, constituting three-quarters of global reserves, two-thirds of oil production and 90% of all 'giant' (over 500m barrels) oilfields. No other survey of this depth or with this much access to data is publically available. The report's release in September 2008 includes revisions on predictions taking into account the economic crisis. The conclusion that 'existing fields are in decline' and the average decline rate of each is 6.4% is expected to accelerate as supply base shifts to smaller on land and off-shore fields most technically difficult to access. As Figure 10 illustrates, expanding production is expected to meet this decline. The scale of the problem is significant. Over the next 25 years it is forecast that the decline will require a further 45m barrels per day (bpd) or the equivalent of four Saudi Arabias. With the expected expansion in demand from 2010 onwards of 1.6%/yr – driven largely by transport in China – six Saudi Arabias will be required by 2030.

The IEA forecasts worldwide conventional crude oil production will increase only modestly between 2007 and 2030 – by 5 mb/d – as almost all the additional capacity

from new oilfields is offset by the decline in output at existing fields. Output from known oilfields that are already being developed or are awaiting development expands through to 2020, but then begins to drop, as few such fields are left to be brought into production and many of them enter their decline phase. Fields that are yet to be found account for about a quarter of total crude oil production by 2030. The bulk of the net increase in total oil production comes from natural gas liquids driven by the relatively rapid expansion in gas supply.

FIGURE 10

World oil production according source



Global proven reserves of natural gas at the end of 2007 stood at close to 180 trillion cubic metres – equal to around 60 years of current production. Like oil, gas resources are highly concentrated in a small number of countries and fields. Three countries – Russia, Iran and Qatar – hold 56% of the world's reserves, while just 25 fields hold almost half. OPEC countries also hold about half. European gas production peaked in 2004 and is now in long-term decline. Continued growth in Norway has not been sufficient to offset a rapid decline in output in the UK, for many years Europe's largest producer, despite a recent surge in drilling for gas in the North Sea. As Figure 11 illustrates, shift in production gravitates towards Russia, Iran and the Middle East, each with considerable state ownership and monopoly.

The UK is the largest consumer of gas in Europe. Self-sufficient in 2004, it is now 25% dependent on imports, a share set to rise to 80% by 2020. This rising dependency here and in the wider EU on imports (77% by 2020) will be satisfied by Russia, Algeria and increasingly through Liquefied Natural Gas (LNG) from the Gulf States. Russia and Algeria dominate the EU gas market with a 40% and 18% share respectively and this is set to expand in the coming decade. LNG from Qatar and neighbouring countries is expected to hold 25% of UK supplies in 2020.

The 2008 price peak of $147/b was influenced by speculation but more especially limited supply. The price drove investment in field development sufficient to deliver on declining capacity through to 2010. Oil price with the economic recession has reduced such investments and the IEA identifies a real risk of a supply crunch in the medium term (2010-2020) as the gap between the capacity that is due to come on stream from current projects and that needed to keep pace with demand widens sharply after 2010. The resulting squeeze on spare capacity will drive up oil prices – 'possibly to new record highs'. The IEA estimates that the marginal price of a barrel of oil in 2009 is around $80; to stimulate the necessary investment to ward off this crunch the IEA forecast a price of $100/b. In part based on this information, the May 2009 US Energy Information Administration forecasts oil price inflation (based on 2009 real prices) of $150 in 2015 and $190 in 2020 (EIA, 2009). Dr Fatih Birol, chief economist at the IEA, suggests that the world risks sharper rises than this given the low level of current investment in infrastructure (Connor, 2009).

Energy and climate change

The energy sector is responsible for two-thirds of CO2e emissions. To achieve 450ppm or the 2°C threshold, the IEA has detailed the nature of the changes required. The priority is efficiency. Between 2000 and 2007 the world achieved a 1% improvement in efficiency but to meet the 450ppm target, 2.3%/year will be needed. Likewise on renewable energy the world has developed 90 giggawatts over the past two decades but will need to achieve half this amount (45GW) year-on-year. Nuclear forms part of this future energy scenario with a further 20 plants needed each year through to 2030; the current rate is 1.5/yr. Carbon capture and storage will need to go to scale and be globally adopted.

FIGURE 11

Change in natural gas production by region 2007-2030

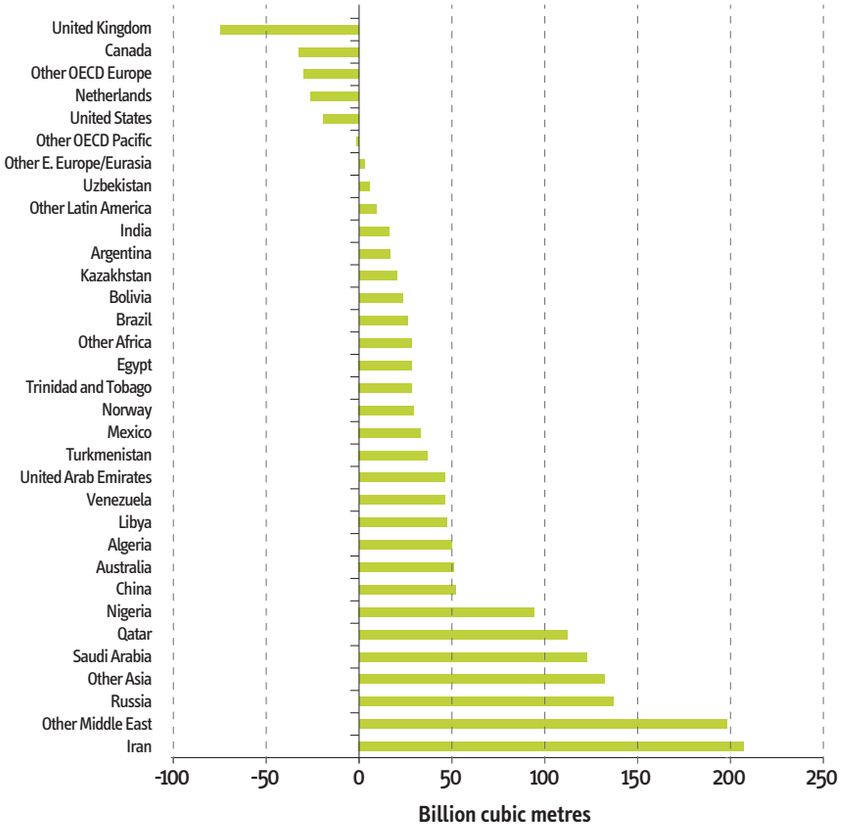
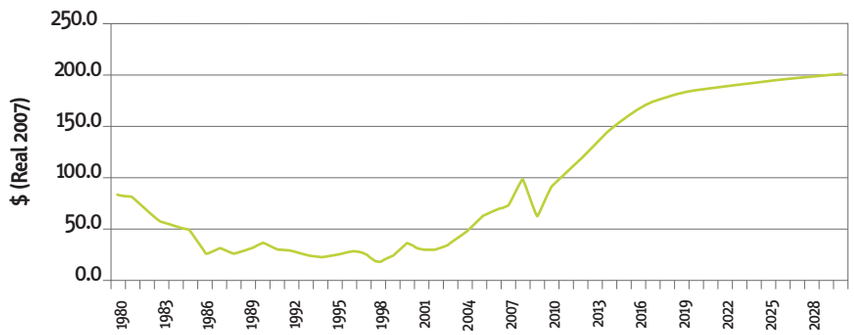


FIGURE 12

Forecast $ barrel price for oil 2009-2030



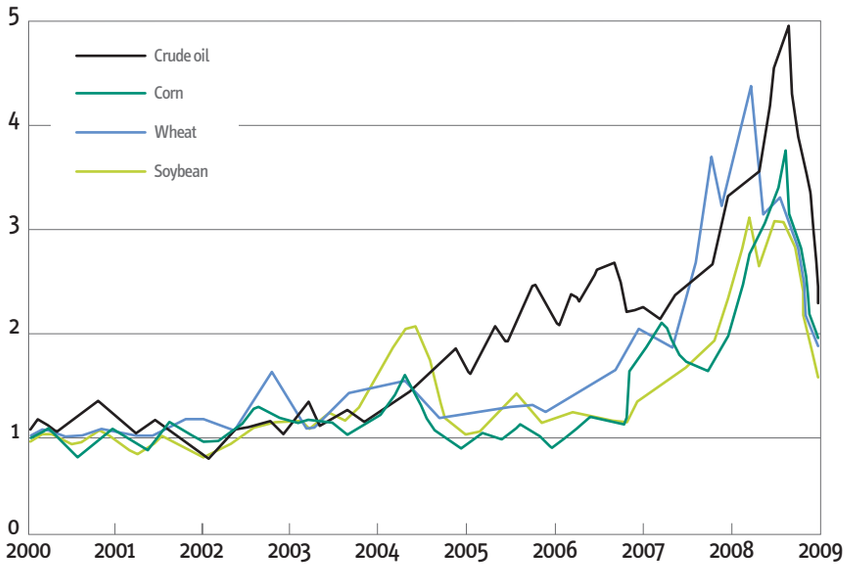
Adults with particular needs and energy prices

Rising energy prices will have a disproportionate impact on lower-income adults and families and those with particular needs. Prices will be impacted across much of the carbon-intensive economy as they were in 2008, as well as direct and indirect costs of adult social care. Three areas of vulnerability were highlighted by the 2008 price spike in terms of adult social care: food, domestic energy and transport.

Food prices

The 2007/08 food riots in Cairo and Mexico City, as elsewhere, starkly reflected food's dependency on energy inputs. Fertilisers and herbicides and pesticides are each heavily dependent on significant fossil fuel input, as is harvesting, processing and transport. Wheat, maize and soya dominate the industrialised food sector, accounting for over 80% of calories consumed. In 2008 world wheat prices jumped 130% whilst the UK food retail prices rose 9.5%, matching a similar rise in 2007. Figure 13 traces the correlation in relative prices of three world agricultural commodities against the price of oil. Prices have dropped with the recession, though for the UK prices have rebounded and risen 9% in 2009 in response to the weakening pound and the rising cost of imports rather than the shallow recovery in oil price. For Leicestershire County Council the rising cost of food increased the cost of meals on wheels provision by an estimated 5%.

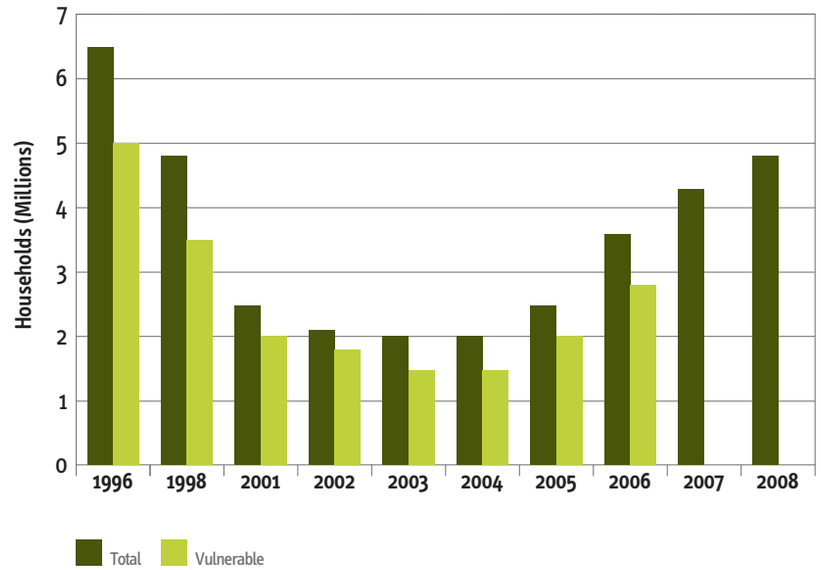
FIGURE 13
Relative price of crude oil, maize (corn), wheat and soybean



Domestic energy

Households in fuel poverty are those that spend 10% or more of income on all forms of home energy. In 2004, two million UK households were affected, and of these 49% were home to individuals over 60. Since then energy prices have spiralled and so has the number of fuel poor (see Figure 14). Despite a concerted government effort to reduce levels of fuel poverty from a 1996 high of 6.5 million, existing levels are forecast to rise in correlation with energy prices. The warming winters do not mean this rise will translate into cold-related deaths; on the contrary winter deaths have fallen this decade, a trend expected to be continued in the coming decade.

FIGURE 14
Fuel poverty in the UK



Adult social services

Sustainable and resilient communities share common qualities including diversity, modularity, and social wealth. Through community care policy, adult social services sought to underpin this notion of community through direct payments and this has been further developed with the 2005 Green Paper Independence, Well-being and Choice and the introduction of personal budgets. Direct payments are cash payments given to service users in lieu of community care services and are intended to give users greater choice in their care. Personal budgets run along similar lines to direct payments but the user has the option of whilst still choosing how their support needs are met and by whom, leaving the council with the responsibility to commission the services. Through to 2011, councils will be expected to significantly increase the number of people receiving direct payments and roll out a system of personal budgets for all users of adult social care. This comes at a time of other significant pressures on adult social services as detailed elsewhere in the Review. The 2009 Green Paper Shaping the Future of Care Together sought to inform how these issues can be addressed in part through strengthening resolve of the personalisation agenda. Since then the economic crisis and spiralling government debt foreshadow an unprecedented squeeze on budgets from 2010 and for much of the decade.

This paper has sought to position adult social services within a social-ecological framework and to highlight the importance of social-ecological parameters, in particular climate change and the end of cheap energy, as critical considerations in how adult social services provide an effective and resilient response. Here it is argued that in the roll-out and development of personalisation, social care can not only contribute but lead on the local authority's sustainable community plan. It will be able to do this through escalating climate change mitigation strategies and through adaptive strategies to climate change impacts and the looming energy crisis.

Climate change mitigation

After children services, which includes schools, adult social services have the largest local authority budgets, averaging around 30% of authority spend. Much of this money is spent through commissioning of services from independent providers and as such this sector often ranks in the top five for carbon emissions in a local authority's supply chain; in Leicestershire, for example, adult care services ranks third for carbon emissions amongst outsourced council services, behind roads and public transport. The promotion of climate change mitigation so evident within schools and amongst children is not reflected across care homes or home-based support. In part this reflects the level of commissioning or out-sourcing within adult care unlike the direct control of schools often enjoyed by local authorities.

Local authorities are under pressure to reduce greenhouse gas emissions. The Carbon Reduction Commitment launch this year and active from 2010 will impose fines on those councils (and other large organisations) that do not achieve their reduction targets. Aligned to this commitment, many authorities have signed up to the National Indicator NI185 that requires a council to reduce its own emissions. For those adult social services that own care homes these commitments will be inclusive of them but in most authorities this number is low; in Leicestershire, for example, just 10 of the 190 care homes with a relationship with the authority are owned and run by them. The one significant area where adult social services can mitigate on climate change as well as reduce their financial vulnerability to rising fuel prices is in business travel. Beyond the usual steps, there is considerable scope for improvements. Decentralised drop-in offices being rolled out in Leicester for mobile staff are reducing their return rate to County Hall. The development and roll-out of communication technologies will further reduce the need for journeys.

Another National Indicator to which a significant number of councils have signed up is NI186 that targets per capita CO2 reductions. Here, adult social services have the potential to play an important role in supporting and stimulating mitigation across communities within the authority. Firstly, through the commissioning process they can have a strong influence on care home providers to improve energy conservation within homes. With individuals cared for in the community adult social services can channel and supplement existing support for home energy conservation through insulation smart meters and other techniques. Be it care homes or people supported in their own homes, improved energy efficiency improves their resilience to rising fuel prices, reduces fuel poverty (NI187) and helps them adapt to climate change (NI 188) as insulation not only maintains warmth in winter but helps keep a building cool in summer. Adult social services could also facilitate a channel of information, and potentially manage collective bargaining, on alternative fuel sources, the economic viability of which will become increasing evident in the coming decade.

Adaptation and the localisation of care

Adaptation to climate change is only now starting in terms of hard engineering and it is yet to emerge in how services are delivered. Adaptation to looming dear energy is not yet evident beyond those steps that seek to improve energy efficiency. A survey of 18 county councils identified no reference to climate change or energy prices within the adult social services Business Continuity Plan (BCP); similarly county wide strategic risk assessments whilst identifying climate change in terms of floods (though notably not heat waves) do not identify energy prices. A recent exercise conducted by local councils is the Local Climate Impact Profile (LCLIP). A desktop survey of eight LCLIP documents identified only one county council, Dorset, which consulted and recommended further planning within the social services department. A notable characteristic of many of these surveys was that they were conducted by students with limited access to council offices and officers and consequently the

usefulness of LCLIPs is questionable. Despite this lack of attention to the adaptation to climate change and dear energy generally within authorities, and specifically within adult social services, there are significant opportunities for synergies across agendas in stimulating local economies and building local resilience.

The weaving together of adaptation to climate change and dear energy with the roll-out of personalisation brings with it both opportunity and risk. The opportunity is the role of decentralised decision-making on direct payments spend by people who use services to catalyse diversification and expansion of local economies. With the potential to keep the flow of money local - say through the provision of meals or support - the local economy experiences a multiplier effect and the local community a stimulus to social capital. In building economic and social capital, community resilience is enhanced. The question nevertheless remains that with the responsibility for securing support moving from the council to the service user (and by extension the local community) what is in place to ensure continuity of care in times of shock or disruption? Community resilience may have been enhanced and so better able to support their populations with particular needs, but there remains a role for social services to guarantee or underwrite the support. In other words, county and regional agencies will need to revisit business continuity plans.

Enhancing business continuity planning

Business continuity planning takes place across all levels of government and agency, and focuses on the function of key services during shock and their recovery after the event. Adult social services plan for unexpected disruption to service delivery under the 'command and control model' but there is evidence that this is not fully integrated with other agencies, in particular those concerned with logistics, or that support is sufficiently local in order to sidestep breaks in communications. With the roll-out of personalisation and individual budgets, there is, as yet, insufficient clarity on where responsibility for 'crisis' service delivery lies: with the service user, with the provider or the council. Two key recommendations are recognised:

Improved business continuity planning

It is strongly recommended that BCP committees conduct a system wide workshop to identify key variables, businesses and agencies critical to ensuring business continuity for individuals and families with particular needs that are known to adult and children's services. A powerful facilitating tool for this activity is the **research in practice** and **research in practice *for adults*** Change Project Model.

1. Establish an integrated mapping facility aligning households with particular needs and key public and commissioned social care workers and services (eg meals on wheels) with climate vulnerable areas (eg surface, river and coastal flooding; heat; snow)
2. Overlay socio-climate maps with strategic highway and road networks prioritised by the Highways Authority and local council during flood and snow events
3. Identify critical locations and routes where there are significant overlapping social, climatic and/or logistical risks
4. Ensure that gaps in strategic provision and access are integrated across social services and logistical agencies
5. Periodically revisit location, concentration and needs of households with particular needs and key social care workers and services and adjust mapping and priorities
6. Establish strategic communication links between social services and logistical agencies to highlight logistics and conduct mapping of county vulnerability.

Building social and economic resilience in local communities

Adult social services can play a leadership role in mitigating climate change and leveraging a nascent low-carbon economy, whilst at the same time making considerable financial savings. But more than this, by situating the roll-out of personalisation within a Total Place analysis of existing primary and secondary provision and coupling it with the agenda for sustainable communities through promotion of micro-markets, adult social services can strengthen local economic and social capital and build local resilience. The unprecedented challenges of climate change and fuel inflation require radical responses that bolster and consolidate the flexibilities and resilience of local communities. This decentralisation of care support should be balanced with command and control response through critical and integrated mapping of logistical support for times of climatic and emergency events. The challenge of climate change and fuel inflation and the timing of personalisation and economic austerity is an unrivalled opportunity for building a care and support system that is both resilient and flexible, with prospects for reduced costs.

recommendations

Climate change and fuel inflation mitigation

1. Incorporation of money-saving, energy efficient and carbon reduction requirements through the commissioning process with independent care homes to deliver both NI 185 and NI 186.

2. Provision of energy efficiency and carbon reduction advice to independent care home operators.

3. Promotion, support and co-ordination of home care clients to improve energy efficiency at home.

4. The promotion of local micro markets and providers for the provision of care services with the role out of direct payments and personal budgets as a means for carbon reduction across delivery (see Recommendation 9).

Climate change adaptation

Business Continuity Planning

5. Integrated mapping of people with particular needs and social support staff/service locations with climate impact maps (snow, heat, floods etc) and key logistic agencies including Highways Authority and local authority departments

6. Clarify and define where responsibilities lie for ensuring critical service delivery in the emerging care system of 'direct payments' and 'personal budgets'

7. Recognise and support the role of local micro-providers in the continuity of key services during periods of disruption

8. Recognise and account for in business continuity planning vulnerabilities in terms of support, food, water, medicinal and energy supplies

9. In learning from the Hull flood experience, when in Recovery Phase ensure robust comprehensive response to households with particular needs, be they council or private tenants.

Building Economic and Social Capital

10. Conduct 'Total Place' analysis with reference to support networks and integrate and supplement where necessary the following -

11. Local service capacity through support for micro providers and development of micro markets for the provision of services (including supported tenancies, small residential care homes, day services, meals, support to people living in their own homes, short breaks, befriending, luncheon clubs, drop in centres etc) - see pilots in Kent and Oldham

12. Secondary providers such as farms, leisure facilities, wildlife trusts etc to foster partnerships and local enterprise

13. Community support individuals, voluntary or otherwise, with responsibilities for flooding, neighbourhood watch and others.

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EVIDENCE REVIEW
3

This is one of three evidence reviews prepared to accompany the Dartington review on the future of adult social care.

It has been written by Jon Rae,
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