Commentary

The future of urban living through the lens of ‘climate change’? Insights from American initiatives

At the time of writing this commentary, researchers working on the ‘Berkeley Earth Project’ summarily concluded in October 2011 that the earth is getting warmer, right now, and this was not something that we believed would happen. Such statements on the ‘science’ of climate change and its impact on our society have become so common place that many a time we end up not able ‘to see the wood for the trees’. A possible explanation lies in the disjuncture between two components of such statements. The first, is about the ‘scientific’ method, supported by (counter)evidence, and (alternative) methods which portray a grim reminder of having to live in an unsustainable world in the future. The second component invokes the need for an adequate ‘response’ such as adaptation and mitigation strategies. These statements become more problematic as we start to view climate change not merely as a global issue, but as what Bulkeley and Betsill (2003, page 2) point out, is “also a profoundly local issue”. In particular, when more than half the world now lives in urbanised areas, what do statements on the impacts of ‘climate change’ mean for urban living in the future?

It could be argued that a response to this question has emerged recently in the US where some state governments have set out to create ‘walkable, less-automobile-dependent urban communities’. This particular approach focusing on urban areas, is one of four available approaches to reducing our ‘carbon footprint’; other approaches being more generic in nature, including: (1) use of renewable sources of energy; (2) adoption of home solutions; and (3) recycling (Moomaw and Johnston, 2008). This is clearly an interesting development because the latter three approaches have been actively pursued at different geographical scales on both sides of the Atlantic. For instance, at supranational/national scale, the Council of the European Union adopted an integrated climate and energy package, one of whose purposes is to achieve a 20% share of renewable energy in the EU’s total energy consumption by 2020. Closely linked to this, the Climate Change act (Scotland) Act 2009 was passed that set out to generate 50% of Scotland’s electricity from renewable sources. Cities on the other hand, such as Newcastle in the UK, have chosen a combination of the latter three approaches in setting out their strategy for engaging with climate change: for instance, to increase domestic waste recycling to 55% by 2020, to meet 20% of electricity demands from renewable sources, to ensure all new council homes are built to zero carbon specification from 2016 (Newcastle City Council, 2010). Such measures have been adopted by a range of cities across the world, including those who are members of the Cities for Climate Protection initiative started in 1993 by the International Council for Local Environmental Initiatives.

However, the approach involving the creation of more compact cities with limited impact on the environment, particularly by regional and not local or supranational or national actors, has only quite recently become fashionable in the United States. Initiatives put forward by state legislatures in the US such as Engrossed Substitute Senate Bill 6580 in Washington (Legislature of the State of Washington, 2006), Senate Bill 375 in California (Legislative Counsel of California, 2009) are testament to such thinking. What underpins such initiatives is an argument that environmental goals, such as mitigating the impacts of climate change, can be achieved through effective
land management, notably through a range of urban containment measures and open space protection programmes. This is a radical departure from conventional land-management policy both in the US and in the UK. For instance, urban containment is a land-management tool that places one of two broad forms of “geographical constraint on urban growth”: open space constraint and infrastructure location (Pendall et al, 2002, page 2). By designating open spaces, urban growth can be ‘pushed’ away to a different location, and by placing public infrastructure in particular places, urban growth can be ‘pulled’ toward such locations. These containment measures were linked to a range of desirable ‘physical goals’ such as: (a) ‘shaping and/or constraining metropolitan growth’ (Hollis and Fulton, 2002); or (b) ‘to prevent use of agricultural land for development’ (Allmendinger, 2002).

So what might one draw from recent initiatives in the US where containment measures have typically focused on ‘physical outcomes’? With a lack of clarity on the spatial scale of intervention for greenhouse reduction in previous legislations, in 2009 the state of California passed Senate Bill 375, ‘Redesigning Communities to Reduce Greenhouse Gases’ (SB 375). This law: (1) requires the Air Resources Board (an agency of the state government of California that reports directly to the governor) to set greenhouse gas reduction targets for the regions of the state; (2) directs the eighteen metropolitan planning organisations (which are designated for each urbanised area with a population of more than 50 000) to prepare a ‘Sustainable Communities Strategy’ consisting of a land-use plan and an ‘Alternative Planning Strategy’ to meet the greenhouse gas reduction target; (3) sets out to create incentives for developing ‘walkable and sustainable communities’ (Legislative Counsel of California, 2009).

One can almost immediately point out that such responses to climate change in the US are mostly initiated by state governments. This is different from the UK context, where national and supranational policy frameworks operate. By meeting targets to reduce greenhouse gas emissions to 12.5% below 1990 levels by 2008 – 12, the UK has been honouring its commitment under the Kyoto Protocol. The government’s concern for timely action on climate change has been reiterated in a number of policy documents, including Climate Change: The UK Programme (UK Government, 2006), Meeting the Energy Challenge: A White Paper on Nuclear Power (BERR, 2008), and more recently the Climate Change Act (2008) that sets out a legally binding target of at least an 80% cut in greenhouse gas emissions by 2050. Unlike in the US, where state governments (as in California) set greenhouse gas reduction targets for the different regions in the state and further require metropolitan planning organisations to prepare plans that meet those targets, in the UK context, reduction targets are set at the national not the regional level but estimates of greenhouse gas emissions are available at local, regional, and national levels (DECC, 2007).

As a result, (former) regional planning bodies such as the West Midlands Regional Assembly had framed their greenhouse gas reduction policies (not targets) based on the basis of estimates of greenhouse gas emissions in their region: for instance, 9.4 tonnes per year per person (West Midlands Regional Assembly, 2007). But they did not set a regional target for greenhouse gas reduction nor make it a requirement to prepare a land-use plan and/or a transport plan as in California to meet the greenhouse gas reduction targets. On the contrary, the aims of Regional Spatial Strategy (in Yorkshire and the Humber) were: (1) “to identify where potential conflicts exist within strategic decision making processes that potentially inhibit the implementation of actions aimed at reducing greenhouse gas emissions ...; (2) to determine and quantify where significant and measurable reductions in greenhouse gas emissions can be delivered and what kind of greenhouse gas emissions these are likely to be” (Yorkshire and Humber Assembly, 2007).
Such differences in context are also compounded by differences in the ‘scale’ of challenges. Firstly, the scale of greenhouse gas emissions. In the UK, emissions of the six greenhouse gases covered by the Kyoto Protocol was provisionally estimated to be 574.6 million tonnes in 2009, which is 8.6% lower than the figure in 2008. In the US, on the contrary, an annual estimate of 6400 million tonnes of carbon dioxide was emitted over the period 1997 – 2007 (Rogers, 2009). Secondly, the scale of development pressures in a particular context. Between 1982 and 1997 there was an increase of 34% of developed area in the United States (US Department of Agriculture, 2001; 2009) or, in other words, approximately 680,000 ha of rural land were converted to developed uses yearly (White et al, 2009) — the amount of rural land converted annually in the USA is more than the size of Aberdeenshire local authority area in Scotland (6313 km²) or about a tenth of the size of Scotland (77,925 km²). This raises two set of challenges: first, whether lessons in one context can be transferred elsewhere, and, second, how to maximize benefits from joined-up policy making (the linking of environment and physical goals, for instance).

It is important to engage with the question of ‘transferability’ because land-management policy has had a different origin on either side of the Atlantic. For instance, in the UK, pursuit of reducing urban sprawl was (and continues to be) one of the principal tenets of the British planning system. This is primarily because, following the serious food shortage after the Second World War, preservation of agricultural land, or the containment of urban expansion into farmland became an overriding priority of public policy—such concerns were even raised as early as 1942 when the Scott Committee argued that “land should remain in agricultural use unless it could be proved that the prospective new use was to the advantage of the nation” (Mather, 1986, page 230). Consequently, agricultural land was not subject to planning controls and instead the conversion of agricultural land to urban uses became a point of regulation—leading to an ‘urban bias’ in the British planning system (Mather, 1986). As a result, containment strategy embodied in the UK, most notably through the use of Green Belts, has been “much more successful in preventing certain types of development or changes in land use than in promoting change or development” (page 231). In North America, on the other hand, a focus on urban containment has given rise to ‘smart growth’ policies which are underpinned by “compact, transit accessible, pedestrian oriented, mixed-used development patterns and land reuse” (APA, 2002).

A national planning system as in the UK does not exist; however, in its place various state governments are responsible for preserving privately owned agricultural land. In addition, the role of the federal government in planning is rather restricted and is limited to “environmental regulation, the management of nationally owned lands, investment in transport infrastructure, the provision of financial assistance and housing subsidies, and the dissemination of information and technical assistance” (Schmidt and Buehler, 2007, page 60).

With regard to joined-up policy making, it would appear that, when policy initiatives are compartmentalised, concerns are raised on their (un)intended consequences, particularly in failing to acknowledge the importance of other policy dimensions. For instance, urban containment policies focused merely on achieving ‘physical outcomes’ have been criticised for failing to consider impacts on: (1) regional and local land and property markets (Nelson, 1986); (2) city-centre revitalisation (Nelson et al, 2007); (3) new investments moving from the ‘peripheral’ to the ‘central’ parts of the city (Landis et al, 2002); and (4) jobs and economic output (Richardson et al, 1993). Drawing on which, the argument underpinning recent state government-led initiatives in the US (such as SB 375) that environmental and physical outcomes need to be linked up, sounds logical. Equally, the paradigm shift from ‘automobility planning’
to ‘accessibility planning’ so as to create a compact city, or an urban form where new developments are restricted beyond the urban fringe and are, rather, encouraged at higher densities within the existing urban areas (Gillen, 2006), is also a desirable goal, although not without its problems. For instance, in creating a compact city, one can work towards creating a balance between employment and housing levels, by arguing that more than half of resident workers should be working within new settlements. Such policies also reduce the frequency and length of trips undertaken by people between their homes and their place of work (Breheny, 2004). However, it can also be argued that there will often be a mismatch in the skills offered by the resident workforce, which can (and potentially does) work against self-containment (Breheny and Foot, 1998).

To conclude, while both these challenges are not without their problems, the American example has in some senses demonstrated that they can be addressed—particularly that ‘joined-up policy making’ is possibly the way forward for urban areas. But do we know anything of the benefits that might follow? Studies carried out on SB 375 reveal that moving 60% of new developments in the US into compact urban settlements would save 79 million tonnes of carbon dioxide annually by 2030 (Ewing et al, 2007)—this is a small although significant proportion of the annual estimate of 6400 million tonnes of carbon dioxide emitted by the US over the period 1997–2007 (Rogers, 2009). This leads us to the question of how city planners might go about the task of linking urban containment measures to climate change. Condon (2008) lists two methods in this regard: (1) a trend-based modelling approach; (2) an inherent capacity framework. In the former, with the help of available data, alternative future outcomes are predicted. For instance, Ewing et al (2007) used a model to estimate greenhouse emissions if 60% of new housing were based on a compact form. By contrast, the inherent capacity framework looks at the existing urban structure and proposes ways of reducing the emission of greenhouse gases: for instance, by providing increased access to public transport, densification, and intensifying mixed land uses (Condon, 2008).

What this means is a possible reconsideration of statements on climate change within the framework of a reduced use of resources in urban areas, or what is being increasingly referred to as the need for a UES or ‘urban ecological security’ strategy (Hodson and Marvin, 2009). With cities around the world accounting for over three quarters of global energy consumption and greenhouse gas emission levels, the concept of UES positions urban areas as critical sites within which to frame “the context for action on resource constraints and climate change” (page 200). This is in line with the recommendations of the Planning White Paper—Planning for a Sustainable Future (DCLG, 2007a) that talk of the need to develop ‘resilient’ communities and to focus on zero carbon developments. Further, in the UK, prior to the current changes being made to the planning system, the Planning Policy Statement: Planning and Climate Change—Supplement to Planning Policy Statement 1 (DCLG, 2007b) outlined broad principles by which the planning system can, and should, contribute to reducing carbon footprint. Two of these are particularly important because they imply a link between ‘urban containment’ and ‘climate change’ (page 12):

1. “pay attention to the location of major generators of travel, the effect of differing patterns of urban growth and sustainable rural development on the movement of goods and the potential to build into new and existing development more efficient means of energy supply and increasing contributions from renewable and low-carbon energy sources”;
2. “provide a framework for sub-regional and local planning to focus substantial new development on locations with good accessibility by means other than the private car and where energy can be gained from decentralised energy supply systems, or where there is clear potential for this to be realised”.
This link is central to future policy making. Increasingly, more and more people are
going to live in urban areas and, in this regard, Hodson and Marvin (2009) have shown
different ways by which responses to the challenges of resource constraint and climate
change in cities can be framed. The American example discussed in this commentary,
interestingly unique in its own right, adds one more to that list. On one hand, it shares
a common concern with existing approaches—how best to empower urban commu-
nities so that they might secure access to and consume necessary resources and yet
reduce potential impacts on the environment. On the other hand, the effort to link
urban containment and climate change in the US begs the question of the scale at
which evidence needs to be gathered and who is best placed to formulate responses
and how. By recognising the polis as a finite entity with access to limited resources,
the Greek city planners knew that not only the ‘size’ of a city mattered but also its
‘autonomy’. In pursuit of the latter, no doubt there is clear consensus, but a coupling
of ‘access to and consumption of limited resources in urban areas’ with impacts on
climate change (which the Greeks did not have to have worry about) will potentially
shape the scale at which growth of cities in the future will be regulated.

Deepak Gopinath
School of the Environment, University of Dundee, Perth Road, Dundee DD1 4HN,
Scotland, UK; e-mail: d.gopinath@dundee.ac.uk

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