Chapter 8
Manchester: Re-Inventing the Local–Global in the Peri-Urban City-Region

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8.1 Introduction

Some of the most populous parts of England are neither urban nor rural, but somewhere in between: a new kind of peri-urban landscape emerging in the fringes and hinterlands of cities and city-regions. Such peri-urban areas reflect both a more networked, mobile, globalised society, and also one which increasingly values local character and quality of life. The Manchester city region is one of these areas, a poly-centric agglomeration of several large towns and cities, between which an extensive peri-urban zone flows, linking them together like a form of connective tissue.

Manchester was one of the world's first industrialized and global trading cities, creating unheard of levels of pollution and sprawl as it developed. Over 180 years later, the peri-urban city-region of Manchester and satellite towns such as Salford, Bolton and Wigan, is developing a new kind of structure and purpose. However, this is in many ways problematic and divided: there is restored green infrastructure side-by-side with post-industrial wasteland; expensive twenty-first century housing and high value business located next to hollow and shrunken nineteenth century towns. In each situation, local agendas have developed to try to respond to the national and global economic and cultural forces, in order to re-invent some kind of role and identity for themselves and for the future.

The methods used in the Manchester case study were, as for all of them, based on the PLUREL Joint Analytic Framework (as described in the introduction to Part 2 of this book) adjusted to take account of the UK situation. This centred on a series of 25 interviews and 5 workshops with policy-makers and stakeholders, including

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spatial planners, economic development and environmental officers, utilities, property, house building and landowners associations, together with representatives in each of the two focus areas within the case study. This was combined with a desk study of policy analysis and assessment: and a parallel 'futures' strand of participative scenarios, with land use modelling and economic analysis, in a 'policy-scenario-testing' method.

In this chapter we aim to disentangle the complexity of this historic conurbation. We look at the general pattern and history of spatial development across the Manchester City-region. Then we explore the structural dynamics of change, using the multi-step framework outlined in Chap. 1, which looks at problems and opportunities in three types of transition:

- 'Metro-politization': an urbanising transition, occurring across wider peri-urban and rural areas, drawing on the work of Soja (2000);
- 'Cultural capitalism': a globalising transition—new patterns of networked economic and social structures and activities, as outlined by Scott (2000, 2006);
- 'Spatial ecology': a localising and green infrastructure transition, with new patterns and identities in places and communities (Douglas and Ravetz 2011).

After this, we focus on two selected sub-regional areas with examples of peri-urban partnerships, in the South Pennines and the Mersey Belt areas. Then we look at selected spatial, environmental and economic planning strategies and policies: Green Belt policy, green-blue infrastructure, and local development. Following this we turn towards the future with alternative scenarios, including land use modelling and participative debate on the future 'problem space' and 'opportunity space'. Finally, we explore new concepts for sustainable peri-urban development in the light of major changes in spatial planning and development policy, as proposed by the UK Coalition government in 2010–2011, (which started to be implemented during the final stages of the research). The conclusion and recommendations section reviews the lessons from this, and asks—where next?

8.2 The Manchester City-Region

8.2.1 From Industrial Decline to Post-Industrial Re-Invention

There is no simple definition of the Manchester city-region (MCR), or of its peri-urban hinterland; in fact the term 'peri-urban' is not often used in the UK, and other terms are more common, such as 'urban fringe', 'rural–urban fringe', or 'countryside around towns'. The many layers of the MCR can be summarised (Fig. 8.1) as:

- The City of Manchester, the municipality at the centre of the conurbation (population 437,000).
- Greater Manchester is the name of the former County, including the 10 Districts (i.e. municipalities) of Manchester, Trafford, Salford, Wigan, Bolton, Bury,

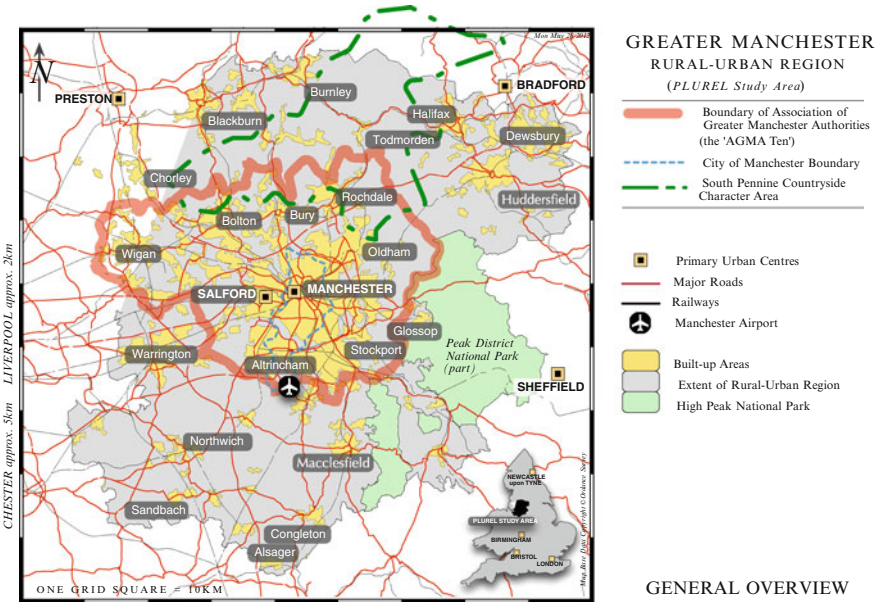

Fig. 8.1 Manchester city-region; general overview

Rochdale, Oldham, Tameside and Stockport. With a total population of 2.5 million, these cooperate through the Association of Greater Manchester Authorities (AGMA), and from 2011 through its freestanding 'Combined Authority', and also through an independent Local Enterprise Partnership.

- Greater Manchester Economic Development area, an informal grouping which includes six more Districts in the southern commuter hinterland;
- The PLUREL case study boundary extended the above by a further six Districts to the east and north, to include a wider range of peri-urban types: this covers roughly a 1-h commuting radius, with a total population of over 4 million.
- At larger scales there is the sub-regional agglomeration of Greater Manchester/Merseyside. A looser inter-regional agglomeration of the Trans-Pennine 'super-city' is also sometimes used, which until 2010 overlapped with the 'Northern Way' policy concept which linked all the urban areas from east to west coasts.
- Meanwhile, the North-west region of England (NUTS 2 level) was abolished as a governance and planning unit by the Coalition government of 2010, with impacts yet to be fully realized on the capacity for strategic planning and regional investment.

Greater Manchester grew rapidly as the world centre of the cotton textile industry during the eighteenth and nineteenth centuries at the height of the British Empire, helped by the construction in 1830 of the world's first commercial railway between Liverpool and Manchester, and in 1894 the Manchester ship canal, which enabled a global trade in textiles and other products. The MCR now has a diverse economy of over £35 billion GDP, with the largest regional cluster of finance, law,

media, creative industries and higher education in the UK. It also contains some of the worst unemployment, pollution, crime, social deprivation and inadequate housing, both in the central areas, and in peri-urban areas alongside sprawling suburbs of wealth and privilege. The outer Districts are each based on former industrial towns which likewise show extremes of poverty and affluence, with a complex mixture of urban and peri-urban landscapes.

At the region's core, the City of Manchester grew very rapidly between 1750 and1900 and then declined after 1950, due to the effects of industrial restructuring. More recently, since 1990, the population has begun to return to the regenerated city centre and some other regeneration areas which surround it; further out, some neighbourhoods have stabilised and/or gentrified, while others continue to be fragmented and chaotic (Ward et al. 2010). The outer suburbs were developed mainly in the period 1920–1980, as a mix of public and private sector housing, generally with lower densities. Some of the private areas are very affluent, while many 'peripheral' public housing estates contain high levels of deprivation and social exclusion.

Urban expansion was rapid throughout the twentieth century. Even when the urban economy and population was shrinking, many people chose to relocate to the suburbs or peri-urban communities, leaving a perforated and obsolete inner urban structure in many areas, similar to what has been seen in many other cities. Many peri-urban settlements also experienced industrial decline, and a rapid transformation from being productive working towns to service-based and/or commuting towns.

The main urban areas are surrounded to the north and east by the hills of the South Pennines, the site of former industrial activity, and to the south by the arable farmland of the Cheshire Plain. To the west, the 'Mersey Belt' between Manchester and Liverpool contains a complex mosaic of peri-urban villages, small towns, new commuting settlements, peripheral public housing estates, scattered small settlements interspersed with farmland, transport infrastructure, waste tips, river valleys, new business or shopping parks, and former industrial areas (Handley and Wood 1998). Generally, much of the legacy of industrial pollution has been cleaned up, natural areas have been (mostly) conserved, and the heavily contaminated river valleys have been reclaimed and rehabilitated as country parks (Nicholson-Lord 1987). However there are many areas which have been recently affected by urban infrastructure and commercial development. For example, the M60 orbital motorway, completed in 2003, cuts through many of the remaining green areas and river valleys which surround the central conurbation (Hyde et al. 2004). In terms of land use, livestock farming in the South Pennines has declined, while arable farming in Cheshire is booming, within a wide range of landscape types (Blair 1987) such as

- Disturbed landscapes:—various impacts from minerals, waste and industry: as seen in much of the MCR peri-urban area;
- Neglected landscapes: low intensity marginal farming, much of it on the lower parts of the South Pennine hills;
- Industrial agriculture: high intensity mono-cultures, in the Mersey Belt and lowland Cheshire farming landscapes;

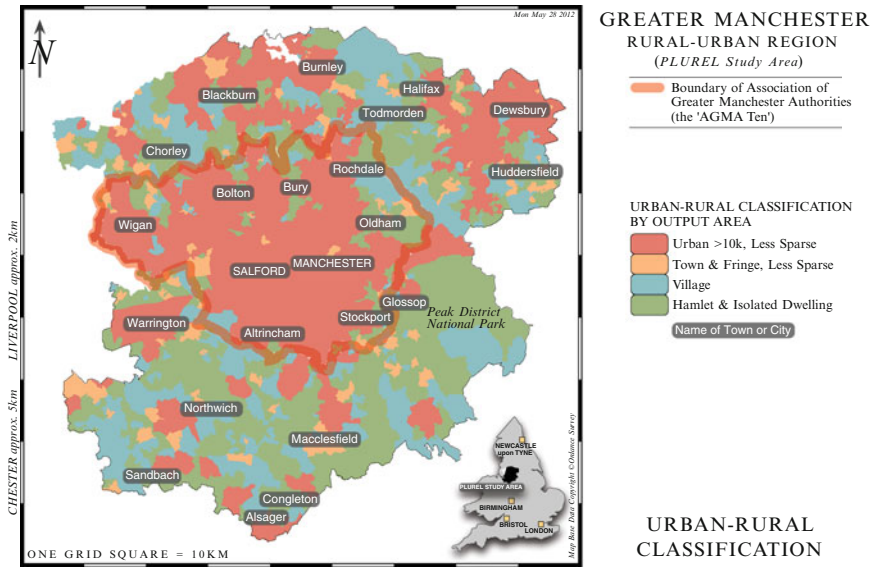

Fig. 8.2 Manchester city-region: urban—rural area classification

- Traditional agriculture: mixed farming with diverse landscapes, seen in the more hilly parts of Cheshire;
- Amenity landscapes: woodland, country parks, large estates, open moorland; a large proportion of the peri-urban area is in some kind of amenity use but this often overlaps with other land use types.

The landscape type probably most directly at risk of peri-urbanisation is 'traditional agriculture', which is covered by 'Less Favoured Area' status (mostly in the South Pennines), 'Farm Stewardship schemes', and other support mechanisms. The concept of disturbed landscape also applies to visual and psychological qualities: 'tranquil' areas are those which are more than 3 km from major roads or urban areas and other sources of noise or light pollution, and they cover less than 3% of the Greater Manchester area (CPRE 2007). The 'urban-rural area' is the official classification of small area types, which straddle the urban boundary (Bibby and Shepherd 2004). The mapping of the MCR shows large areas of 'less sparse', i.e. peri-urban mixed settlement patterns (Fig. 8.2).

8.2.2 Peri-Urban Economic and Social Structure

The results of the dynamic processes of the peri-urban seem to concentrate relatively affluent and relatively deprived areas into different localities around the

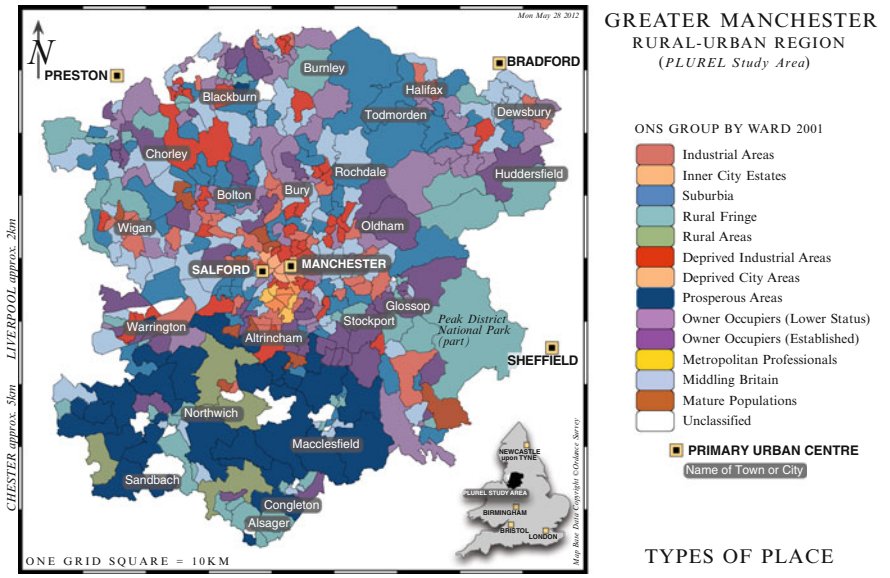

Fig. 8.3 Manchester city-region: social area types

MCR: some are highly self-contained while others are dominated by commuting. We can observe several processes, involving the mobility of incomers and existing residents (GMCVO 2007):

- Existing wealthy residents of peri-urban/rural areas are often descendants of originally landed or semi-landed aristocracy, merchants or industrialists. Over time their assets in land, buildings and capital have consolidated. Some nouveau riche incomers have supplanted the original landowning families.
- Incoming affluent households are attracted to high quality landscapes and can afford to commute, or else have high mobility, knowledge-based occupations.
- Existing low income households may find changes in the rural economy and more limited employment opportunities destructive to their livelihoods; insecure housing tenure or high housing costs adds to economic pressure.
- Low income households were in many cases relocated, as part of spatial planning policy, from the inner city slums to peripheral public estates. They often found themselves isolated from employment and services, and unable to afford private transport.

The resulting pattern is shown in the mapping of 'social area types' (Fig. 8.3). This can be overlaid with the analysis of commuting distance, with a clear commuting flow visible particularly on the wealthier southern side of the peri-urban MCR (where more than 20 % of residents commute long distances, with serious congestion on local roads as a result) (RTPI 2006).

8.2.3 Dynamics of Change and Transition

The dynamics of peri-urban change work at several degrees or levels of complexity. Using the framework set out in Chap. 1 we can identify the direct patterns and driving forces of urban expansion alongside the underlying structural effects and system-wide transitions.

- Firstly, urban expansion is a direct result of population and economic growth: in the MCR, population growth took place in phases starting in the mid-eighteenth century, and then levelled off around 1950, with decline in many inner urban areas. Economic development then resulted in further expansion, in the shape of increased floor space per person (for housing, workspace and services).
- Secondly there is the regional agglomeration effect: here, the merging of Manchester, Liverpool and many satellite towns into an extended conurbation began in the nineteenth century and has been shaping the peri-urban area ever since, with the most recent stage being the completion of the orbital motorway. Since the 1960s, the Green Belt and related policies have generally succeeded in physically containing urban development. However the economic and social agglomeration process has continued, aided by expansion of transport systems, labour markets, and retail and services catchment areas.
- The third aspect is the structural dynamics of power and political ideology, which can be seen shaping the peri-urban space; and the fourth aspect of system-wide transitions and resilience effects operate across the MCR. Both these are set out below. A fifth aspect of policy and strategy is explored in the next section.

The combination of aspects three, four and five are shown in the key diagram below, which is based on the MCR (Fig. 8.4).

8.2.4 The Dynamics of Structural Change

The dynamic of structural change can be seen most directly through conflict and controversy. The MCR was the archetype for study of the contradictions of capitalism (Engels 1845); it was also one of the birthplaces of the trade union and the Cooperative movements. In the 1930s, there were conflicts in the region over access to open land in private ownership (symbolised by mass trespasses on the upland area of Kinder Scout in Derbyshire Shoard 1983; Fairlie 1996). Recently the Manchester airport expansion provoked demonstrations and occupation of the site by environmental activists (Ravetz 1999). The Trafford Centre shopping mall (Kitchen 1997), road building and business parks in the Green Belt (Hyde et al. 2004), and the Greater Manchester Congestion Charge referendum were also controversial issues (Sherriff 2012). Each of these cases reveals underlying tensions in the dominant ‘discourse’ of neo-liberal attitudes to urban development, which is then manifested in the spatial patterns of social and economic differences

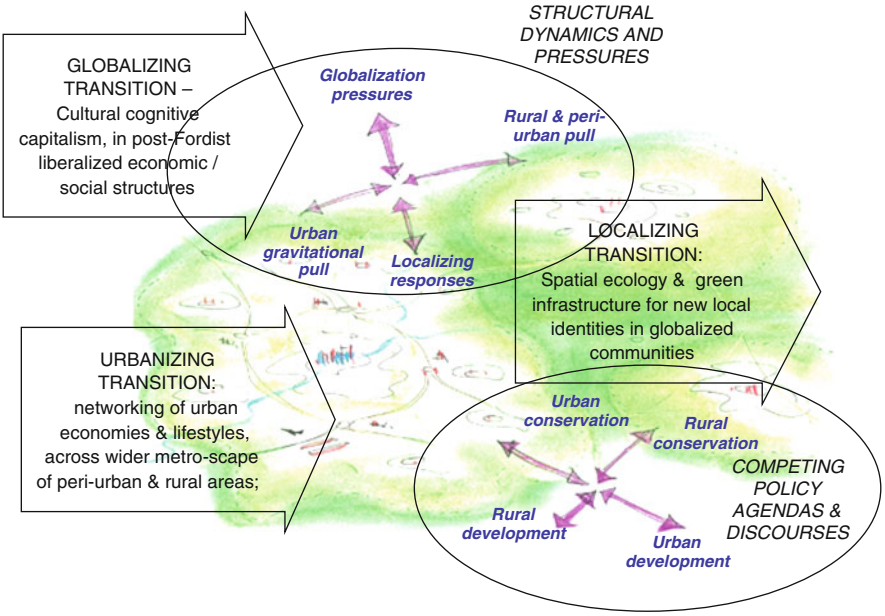

Fig. 8.4 Structural dynamics and transitions in the Manchester city-region

(Hajer 2003; Brand and Thomas 2005). We can summarize these patterns of conflict and competition, seen through the perspective of 'urban political ecology' (Kaika 2005; Heynen et al. 2005), such as global versus local agendas, economic innovation versus social values, competition between economic or social groups and social innovation versus cultural values. Applied to the MCR case, drawing on secondary analysis of interviews and workshops, each of these are forces which shape the structure of the peri-urban city-region (Table 8.1).

8.2.5 Transitions and Feedback Effects

The concept of 'transitions' is essential in understanding peri-urban change and peri-urban policy. From discussions with stakeholders it was possible to define three types of transition in the MCR: 'metropolitan', 'globalizing' and 'localizing'. Each can be studied in various ways, for instance, the 'systems thinking' approach (Rauws and de Roo 2011), the 'community resilience' approach (Berkes et al. 2003) or the 'policy innovation' approach as a transition response (Randles and Green 2006).

These transitions, and the policy responses which they generate, raise very practical questions which are debated by policy-makers and communities in the MCR, such as what or who is the peri-urban landscape for? How to find a balance

Table 8.1 Structural dynamics and conflicts in the peri-urban

Type of dynamic	General effects in the peri-urban	Effects in the Manchester city-region peri-urban
Global versus local tension and conflict	Structural 'metropolitan transition' with globalizing/localizing tensions (Soja 2000)	Policy discourse of the global competitive city-region: expanding labour and retail markets, against small local economies and SMEs, across the whole peri-urban MCR expanding transport infrastructure, centred on Manchester airport and motorways.
Innovation and conflict between economic groups	Peri-urban economies as creative destruction of obsolescent economies and communities	Declining town centres with local shops and services, centralized by efficiency criteria, many peripheral locations. Shift of producer and consumer activity to business parks, science parks, retail parks, centred on MCR motorway network.
Economic accumulation and social impacts	Peri-urban land and development as capital accumulation, in the circuit of urban property investment (Harvey 1995)	Legacy of former industry and mining which continues in 'low value' locations and housing markets: New outer suburbs for commuters/ retirement, with high and stable property values: property values increases from planning permission for strategic landholdings, aided by land speculation and market 'lotting' tactics.
Conflict between social groups	Peri-urban land use questions, on the frontier of class competition for territory, security and identity (Shoard 1983)	Historic and aristocratic country estates which dominate the lowland farmland landscapes of MCR: Social housing on peripheral estates without services; New high value commuter developments with security gates and fences: NIMBY defence of green belt against incoming social housing.
Innovation on the social-ecological axis	Peri-urban community initiatives as new social movements, socio-ecological enterprise etc. (Hoggart 2005)	Urban fringe partnerships for green infrastructure, community forests: integrated catchment management on all river valleys: heritage/ cultural/eco-tourism in higher quality landscapes.
Innovation on the social-economy axis	Peri-urban community initiatives as business strategies with socio-cultural enterprise etc.	Town and village partnerships, events, niche branding, heritage/cultural tourism: many peri-urban locations: New models for local planning/local services/social housing.

(continued)

Table 8.1 (continued)

Type of dynamic	General effects in the peri-urban	Effects in the Manchester city-region peri-urban
Conflict between urban versus rural	Peri-urban land use as frontier of dominant urban power and wealth, over rural interests	Rural landscape dominated by road interchanges, energy, water and other infrastructure: many parts of peri-urban MCR: Farmers and SMEs constrained by green belt and similar policy.

between private profit and the public good in managing land and ecosystems? Large parts of the MCR are no longer competitive in their former original agricultural or industrial uses. New local residents may be commuters or knowledge workers, the semi-retired or retired, with little direct involvement in the local economy. Thus the identity and 'reason for being' of the place and its communities is increasingly an open question. In any one location there may be competition between many agendas, including the economic, ecological, historical, residential, or functional (Gallent 2006).

In the MCR, most direct urban expansion is constrained by the Green Belt, related landscape designations, and the general planning policy of 'presumption against development on open land'. The result is that change is directed into a wider peri-urban metamorphosis—the ***metropolitan transition*** of formerly peri-urban or rural communities. This is a transition towards urban-centred and urban-networked economic activities, social types, cultural attitudes, and spatial patterns of work and lifestyle (Soja 2000; Duany et al. 2000). The effects are seen in the peri-urban MCR, such as the gentrification of the former industrial towns and rural villages of the South Pennines. They are also seen in other areas, as a transition away from locally-based jobs and services, towards suburban development with urban-centred jobs and services, made possible by modern transport and communications infrastructure.

The metropolitan transition takes place in parallel with a wider globalizing transition, towards what some have called a state of ***cognitive capitalism.*** This is based not only on new economic functions but on a knowledge- and innovation-based global order, with changes in social behaviour, cultural patterns and public attitudes (Scott 2000, 2006). This has much in common with the creative cities idea, and also draws on the theory of 'creative classes' (Florida 2004; Ravetz 2011b). In the MCR, discussions with the Manchester Knowledge Capital agency showed how the 'creative city' theme, closely related to the 'Ideopolis' or knowledge city, could be 'spatialized' across different parts of the peri-urban landscape (Lee 2007). Stakeholders pointed to conflicts between providing for entrepreneurs or cultural consumers—through constructing science, retail or leisure parks—and providing space for other kinds of creative action. These cover both landscape-based schemes (sculpture parks and community arts projects) and town or community-based schemes (heritage trails, cultural festivals, local food and farmers' markets).

Thus, the creative agenda works not only with a globalization agenda, but also a new kind of ***localization*** which can be seen in changing preferences for places and landscapes; in the MCR as elsewhere, surveys find a growing public desire for small, safe communities with good public services and plenty of green space. This is linked to the trend of out-migration and counter-urbanization, which has led to the re-population of the former industrial peri-urban MCR, at the same time as de-populating parts of the inner urban areas. Alongside these 'creative' local schemes there is a wider concern for the enlargement and protection of the peri-urban ***green-blue infrastructure*** (GBI), of open spaces, green corridors, urban woodlands, waterways, walking, cycling and horse trails, as well as existing nature conservation sites (Ravetz 2011a; Benedict and McMahon 2001). Such an infrastructure may have social as well as environmental objectives, for example being aimed at providing a neutral and commonly accessible territory, where a diversity of social groups can enjoy nature or exercise in fresh air. The objective is more to enable social cohesion as different social groups identify with and locate themselves in a common landscape. Again there are conflicts both visible and under the surface: GBI is argued by some to be used mainly by white middle class groups and to exclude other social and ethnic groups, a topical issue in research and policy (Natural England 2009: CABE 2010). Finally, GBI is not only a local issue but strategic, as for instance the Mersey River and its valley which forms a major green corridor and ecosystem management question, right across the region (Wray and McPherson 2006).

8.3 Sub-Regional Case Study Areas: Creative Enterprise and Diversity

Within the size and diversity of the MCR, there is no one policy or governance unit responsible for its peri-urban areas. So, as in other case study chapters, two sub-regional areas were selected to permit closer working with stakeholders, and a more in-depth review of policy. These were the South Pennine hills in the eastern and northern parts, and the Mersey Belt and community forest area in the western part of the MCR. In each case there are active and forward looking peri-urban initiatives, led by partnership organizations, and involving networks and partnerships linking the public, private and civil sectors. Some of the wide range of places and types is shown in the sample pictures (Fig. 8.5).

8.3.1 South Pennines: New Forms of Urban-Rural Linkage

In between three major conurbations in the north of England there is a 'green heart', a unique mixed town-and-country landscape set among hills rising 500–600 m

Fig. 8.5 Geographic types in the Manchester city-region: (**a**) Manchester ship canal; (**b**) green belt north of Manchester; (**c**) green infrastructure in the Mersey Belt; (**d**) local development in Todmorden

above sea level, and with steep sided valleys containing small scale livestock farming, a rich industrial heritage, and both traditional and new 'lifestyle' communities. The South Pennines has a population of around 450,000 and encompasses the countryside fringes around Oldham, Burnley, Pendle, Rochdale and Rossendale, from the wider MCR and Lancashire (to the west of the Pennines): and Bradford, Calderdale, Kirklees and Craven in West Yorkshire (to the east of the Pennines). It is a decentralized geographical type, with no single centre or corridor, and with open moorland over the hill tops and between the east–west transport routes.

The South Pennine agenda centres on the role of landscape character, history and heritage in determining a new future. While on the surface the upland landscapes might appear to be long established and 'timeless', there have been massive changes over the last half century. Some Pennine towns lost half their population, and then since the low point in the 1960–1970s, some have regained it. The once dominant local textile industry almost completely disappeared, and is now being replaced with a more diverse mix of economic activity. Household car ownership rates doubled and then doubled again. Production from the land, from farming,

forestry or mineral extraction, continues to decline while tourism is now the largest land-based industry, though still fragmented and ad-hoc compared to other areas or National Parks with larger-scale attractions, such as the Yorkshire Dales or Lake District (Pennine Prospects 2008).

Partnership working is seen as the key to harnessing the area's rich natural, cultural and built heritage: such as the world's first retail cooperative, set up in 1844 in Rochdale, and the first industrial cooperative in 1848 in Hebden Bridge. 'Pennine Prospects' (the short name for the Southern Pennine Rural Regeneration Company) is a non-profit partnership agency with a membership of local authorities, government bodies and private and voluntary sector bodies (www.pennineprospects.co.uk). Pennine Prospects works to raise the profile of the South Pennines. It aims to help regeneration by promoting natural assets and heritage, supporting the development of a sustainable local economy, protecting and enhancing the character of the area and improving the South Pennine environment and infrastructure. In 2011 it had a wide range of projects and wider partnerships, including the management of a £4 million EU-funded LEADER programme.

Some stakeholders perceive that the South Pennines is a peripheral area at the 'back of beyond', a lower priority for urban-centred local government and governance. An alternative view is that, on the contrary, it is also an essential resource, providing space and ecosystem services to the surrounding conurbations with a total population of over 6 million. This is a good example of some of the 'linkages' noted in Chap. 1, including, urban to rural, urban to peri-urban, peri-urban to rural, social to economic, economic to environmental, etc. Such linkages then provide opportunities which can be realized in creative projects led or enabled by Pennine Prospects. Examples include 'Watershed Landscapes'—which rehabilitates the moorland plateau peat bogs for multi-functional uses: and the programmes for increasing woodland cover and woodland management across the landscape.

8.3.2 Mersey Belt: Community Forests in a Peri-Urban Landscape

On the western side of the MCR, stretching from Manchester to Liverpool is an extended area of 'mixed town-and-country' landscape (Breheny and Rookwood 1993). In the land use modelling of MCR, this shows up as 'low density discontinuous urban form', but on the ground it is experienced as a diverse urban-ecological pattern. With a legacy of 250 years of industrial revolution and restructuring, this area includes former mining and landfill sites, housing of various kinds, old and new types of industry, urban infrastructure for energy and waste, major roads and freight interchanges, and business and retail parks. The area has a unique history, including the first passenger railway in the world, the largest glass factory at St Helens, and the first industrial estate at Trafford Park (Nicholas and McWilliam 1962; Lloyd 1980).

Between the different elements of the urban patchwork, there are a few remaining areas of lowland peat bog, in a mosaic with ecologically important wetlands and woodland; sometimes the woodland is secondary, often planted over mining spoil and landfill sites. After 40 years of reclamation most of the worst land contamination and dereliction has been greened and made safe and usable. This then raises more complex questions, such as how to combine urban/economic development with ecology and landscape? Green Infrastructure, or 'Green-Blue Infrastructure' (GBI), is seen as the way forward, not only for its ecological value but also to yield economic and social benefits, such as green settings for new business parks and housing, or through networks of accessible linked recreation areas.

This is the background to the community forest. One of many around the UK and part of a specific national programme, the Red Rose Forest was set up in 1994 as a freestanding agency to cover the western part of the MCR (the red rose being the symbol of the mediaeval Lancastrian royal dynasty) (www.redroseforest.co.uk). On the eastern side the Pennine Edge Forest has similar aims though a different pedigree, set up from within the local authorities. Both followed earlier work by the Groundwork Trusts and Countryside Commission on the 'Urban Fringe Experiment' (Handley and Wood 1998), and also benefit from inputs such as grant funding from Forestry Commission England. The Forests' main aim is to promote partnership schemes as a means of land reclamation and beneficial re-use, environmental improvements and community woodland. Along with its neighbour the Mersey Forest, the Red Rose Forest provides an example of how partnership working can bring the public, private and community sectors together to rehabilitate and consolidate various industrial and post-industrial landscapes which were often damaged and fragmented (Wood and Ravetz 2000).

8.4 City-Region Governance and Planning: Multi-Level Management of Change

8.4.1 Territorial Governance and Spatial Planning in England

In the UK's efforts to manage a complex geography, there are many questions on governance. For instance, should the lead be taken at the regional, city-regional or local level? How should spatial planning be linked to economic and environmental policy? How can plans made by the public sector be implemented, when the resources to do so are in the private sector? For peri-urban areas there are extra challenges, partly because in the UK the words are hardly used, and the theme is hardly recognized yet; there is a sub-topic referred to as 'urban fringe', but otherwise policy tends to be divided into 'urban' and 'rural', with few overlaps.

The situation in the MCR case study, and its comparison with the other PLUREL regions, changed towards the end of the project with a new Coalition government in

2010. At the time of writing the whole planning and governance system in England is in a state of flux, with debate focused on the National Planning Policy Framework (NPPF) (CLG 2011a). This aims for a more pro-development, deregulated, 'new localism' approach, which is expected to enable decisions in the common interest, with fewer structures and top-down targets. When (or if) implemented, this may change many of the existing policies and structures to greater or lesser degrees:

- National level: the forthcoming NPPF is likely to replace the current set of national Planning Policy Statements and the legal framework of the Planning and Compensation Act 2004. However, neither of these have any explicit spatial dimension: in the absence of an official 'national spatial strategy', various organizations have produced their own demonstrations (Wong et al. 2000; TCPA 2006).
- Regional level: until 2010 each region (at NUTS 2 level) produced a 'Regional Spatial Strategy', and 'Integrated Regional Strategy'. This system is now history because regional administrations have been abolished, but there are still many lessons on how higher level strategies and strategic investment sites can be managed (Wray 2011):
- Sub-regional or city-region level: spatial strategic planning for conurbations such as MCR is expected to come from the proposed 'duty to cooperate' between local authorities;
- Local authority level: each local authority will continue more or less the current system of a spatial 'Local Development Framework', which is linked to its corporate 'Community Strategy' overseen by the Local Strategic Partnership of stakeholders, and includes a Local Area Agreement for services and investments.
- The new NPPF also proposes a neighbourhood planning level, which could be led by businesses, landowners or the community. This would have power to increase the rate or amount of development beyond the levels stated in the local authority plan, but not to reduce it.

The new system is likely to have major effects on peri-urban areas, but there appears to be no analysis, at the time of writing, of what these might be (some issues are explored in the Conclusion to this chapter). Although the NPPF promises to maintain Green Belts and National Parks, other local designations would be downgraded, and there is a general presumption in favour of 'sustainable development', which in the view of the government appears to be almost any development.

8.4.2 Governance Trends and Prospects for the Manchester City-Region

The MCR is a clearly visible geographic unit, and a ready test case for various options in governance. The Greater Manchester County of 10 Districts (i.e. municipalities) operated from 1974 to 1986 and, following its dissolution, the

10 Districts have coordinated services such as waste, airports and emergency services through the voluntary Association of Greater Manchester Authorities, and the newly launched freestanding Greater Manchester Combined Authority (Roberts 1998). In 2010 the new Coalition government decided to abolish all regional-level strategies (spatial, economic, social and infrastructure) and shift all decision-making to the local level. It is not yet clear how the Greater Manchester conurbation of 10 authorities, or the wider MCR of 16 or even 22 authorities, can work with or without either formal or informal coordination, what resources might be available, and how conflicts and disputes could be managed.

At the time of writing a new 'Local Economic Partnership' has been approved, led by the private sector but including the 10 local authorities. There is also an active policy/partnership network which includes New Economy Manchester (formerly the Chamber of Commerce and Industry), various Commissions on Environment, Transport or Housing and the production of a Greater Manchester Strategy. There are few details yet of how this will work, obtain funding, or coordinate with policies and activities in the surrounding areas.

Economic development policy has been dominated in the past by EU funding, since most of the MCR was an Objective 2 area. There is now a legacy of 'a thousand flowers', including science-based innovation, digital industries, cultural industries, a heritage-based tourism and visitor economy and local social enterprises. Environmental projects form a parallel strand: while funding was cut in 2010 from most climate change programmes, there is continuing activity on local environment and Green-Blue Infrastructure schemes.

8.4.3 The Policy Agenda: How to Define the Problem?

Behind formal governance and policy objectives lie a series of wider questions, such as: what are the problems which policy aims to solve? Who decides, and with what resources? In the peri-urban situation this is not a simple question: for each kind of problem there are arguments over who is responsible, for what area, and over which strategic agendas, such as urban or rural, local or regional. And at a time when much former industrial pollution has been cleaned and reclaimed, or outsourced at a global scale, surface level affluence can hide deep social and economic divides (Roberts et al. 2009). Tangible and visible problems, as identified through desk studies and stakeholder consultation, include:

- The generally diffuse structure of urban settlements, communities and local services;
- Fragmentation of GBI, decline of habitats, and poor quality/inaccessible landscapes with lack of investment;
- Traffic congestion due to commuting in peri-urban areas, contributing to pollution;
- Local housing and public services in decline and/or inaccessible to local people;

- Rapid social and economic change and fragmentation in local (rural) communities.

Such problems can be exacerbated by economic growth and development, suggesting that the challenge is more about distributions within and between social groups. Such problems are less visible, but have been identified in studies on the 'rural' (i.e. peri-urban) parts of Greater Manchester (GMCVO 2007; New Economy Manchester 2008).

Affluence and environmental improvements introduces 'gentrification' in many peri-urban locations, which, together with a lack of new build housing, causes increases in house prices. This then excludes lower income groups from the housing market, and it also tends to hide poverty and exclusion within surrounding affluence. Government socio-economic data shows that 25 % of 'rural' households are deprived either on poverty, unemployment or housing criteria: and such deprivation is exacerbated by lack of access to services such as banks, shops, health and education facilities.

8.4.4 Spatializing the Policy Agenda

Spatial policy is based not only on the definition of the 'problem spaces' as above but also the 'solution spaces' (i.e. what could and should be done). These are then related to physical areas or locations on the ground. Competing spatial issues include urban versus rural and development versus conservation, combining or conflicting in the peri-urban area, each offering its own version of 'sustainability' (Ravetz 2000; CURE 2003). In the MCR such issues include:

- Urban containment: using the peri-urban as a boundary to urban expansion. In MCR the Green Belt surrounds the main conurbation and many smaller towns, although not the Pennine hills. There is often fierce debate about the effect of Green Belt policy on businesses in sectors such as leisure or tourism which can be constrained by the restrictions on development in the Green Belt.
- Urban development and expansion: this aims to supply the city with roads, airports, business and retail parks. For MCR the motorways form the primary network, with Manchester Airport as the primary hub forming a so-called 'aerotropolis' (Kasarda and Lindsay 2011).
- Rural conservation: in the densely populated MCR the countryside is seen as an asset for the urban population, where landscape and ecology attracts leisure and tourism in areas such as the Pennine hills and in the community forest area.
- Rural development and enterprise: with a focus on small and medium-sized enterprises (SMEs) and local economic development. In the MCR this can create conflict with rural landscape conservation, compete for space with large urban development, and undermine the urban containment goals.

These spatial aspects should in principle fit together as part of a far-sighted spatial strategy and integrated policy framework. In practice there are many

questions and conflicts. Below, we assess three types of strategy in the MCR, looking at actors and stakeholders, resources and capacities, rules and institutions: their discourses and cultures, policies and governance.

8.5 Strategy and Policy Assessment

The key question for policies and strategies, as discussed with stakeholders—is: do they work? To explore this needs a view beyond the stated objectives within the stated boundary. Much of the policy process in MCR seems even to the experts and policy-makers who were interviewed, to be very complex, fuzzy, opaque,, and relying on partnerships for peri-urban issues, which are not often recognized as such. The five main assessment questions from the PLUREL Joint Analytic Framework raised general issues through interviews and workshop discussions:

- *Will the policy be robust against future changes*? In the MCR it was often difficult to answer this, in a situation of rapid change all around. However, policies such as the Green Belt are based on a longer term perspective, where part of their success is through longevity.
- *Does the policy integrate with other policies*? The MCR shows many examples where projects and partnerships are set up in order to integrate between policies which are otherwise fragmented. Both the South Pennines and Red Rose Forest areas are examples of 'integrating' organizations which bring together other policies and programmes.
- *Is there coordination between public, private and civic sectors?* Similarly, there are efforts towards coordination, as seen in both the above.
- *What are the external effects and who are the winners/losers*? In the MCR this raises some of the 'structural' questions as summarized above. For example the Green Belt is seen by some stakeholders as widening the gaps between urban versus rural, development versus conservation, rich versus poor and commuters versus local residents.
- *Does the policy encourage innovators and entrepreneurs?* A very topical question for the MCR, and the starting point for the Coalition government's reforms of the planning system, which was subsequently labelled 'the enemy of enterprise' by the Prime Minister (Cameron 2011).

The summary here shows the general themes (actors, resources, rules, discourses and strategies), mapped out for the most topical sectors discussed in the MCR case: housing, transport, tourism, agriculture, landscape and water (Table 8.2). The table also illustrates different and parallel types of knowledge, from 'hard' technical data to 'soft' strategies and discourses. The research team used this to explore three main strategies, in the sub-region case studies and in the MCR as a whole: the Green Belt, Green-Blue Infrastructure and local economic development.

Table 8.2 Summary of key policy agendas and strategies

	Technical data on trends and patterns	Actors and stakeholders	Resources (financial, physical)	'Rules' and key system drivers	'Discourses' and underlying tensions	'Strategies'/ policies/agendas
Policy agendas						
Housing	Household growth:	Private housebuilders	Land with permissions	Housing tax and finance system	"Not in my back yard"	Urban regeneration policy
	Housing density	Social housing providers	Private housing stock	Social security benefits system	"Not in my term of office"	Rural housing policy
	New housing: % of stock.	Private landlords	Social housing stock	Law on landlords etc.	"Build absolutely nothing anywhere near anyone"	Urban fringe policy
	Peri-urban versus urban housing	Finance companies				Green belt policy
		Housing estate agents				
Transport	Private transport growth % per year	Private drivers	Public investment	Price and tax structure of transport policy	"Freedom to drive"	Regional and local transport strategy
	Commercial road traffic % per year	Commercial firms	Transport corridors and interchanges	Integrated transport challenges.	"Buses are for losers"	Public transport finance
	Air travel % per year	Public transport firms	Parking and access			
		Public transport agencies				
		Walkers/cyclists				
Tourism and Leisure	Countryside visitor trends:	Private tourism firms	Tourism/leisure sites and facilities	Personal mobility and leisure dynamics	"Whose land is this land?"	Regional tourism strategies
		Tourists	Tourism/leisure landscapes	Overloading of 'honeypots'	"The tourism curse"	Countryside and access policy

(continued)

Table 8.2 (continued)

	Technical data on trends and patterns	Actors and stakeholders	Resources (financial, physical)	'Rules' and key system drivers	'Discourses' and underlying tensions	'Strategies'/ policies/agendas
		Residents of leisure		Competition with overseas travel	"They're not from round here"	Peri-urban partnership
		Community/civil society groups				
Agriculture	Agriculture output	Farmers	High quality farmland	Industrialization of food supply chains and quality standards	'Eat the view'	Sustainable food and farming strategy
	Regional productivity	Agri-business	Soil, water, etc.	Cheap food imports	Farmers—stewards or producers?	Cap reform and stewardship schemes
		Hobby farmers	Farming infrastructure	'Horsiculture' and land abandonment	"Our kids are fat"	Urban food resilience
		Manufacturers/ retailers				
		consumers				
Ecology and landscape	Biodiversity quality index	Ecologists/nature lovers	Protected sites/ landscapes	Ecological connectivity	Suburban gardens as eco-habitats	Biodiversity strategy
	Site protection trends	Countryside managers	Social/cultural commitments	Inter-species co-existence and multi-functional landuse.		Special landscape areas
		Regulators/ planners				
Water management	Water resources	Water utilities	Water catchment land	Finance and asset structure of utilities.	'Dilute and disperse' approach to pollution control.	Integrated catchment management
	Flood incidence	Water consumers	Water infrastructure	Institutional gaps in drainage and flood management.	'P-ing into the wind'	Water stewardship programs.
	Flood vulnerability	Residents	Flood management infrastructure		"The poor get flooded"	Sustainable urban drainage policy

8.5.1 Strategy 1: Green Belt Policy

UK planning policy for 'open land' around cities is founded on the Green Belt, which has been at the heart of national planning policy since 1949. Current guidance (at the time of writing) on Green Belts, which can be found in Planning Policy Statement 2, sets out five main objectives:

(a) To check the unrestricted sprawl of large built-up areas;
(b) To prevent neighbouring towns from merging into one another;
(c) To preserve the setting and special character of historic towns;
(d) To assist in safeguarding the countryside from encroachment; and
(e) To assist in urban regeneration, by encouraging the recycling of urban land.

Within Green Belt areas the main policy aim is to permit no new development except for specific purposes such as agriculture and forestry, essential facilities for outdoor sport and recreation, cemeteries and other uses that preserve the 'openness' of the landscape. In principle, over 600 km^2 or 47 % of the Greater Manchester area is protected by Green Belt, but in practice there is a long list of 'strategic deletions' for business and infrastructure. Possibly a bigger issue is that much of the landscape within the Green Belt shows neglect and degradation, with problems for farm diversification, local services and the rural economy. Other local policies such as 'areas of landscape value' have similar goals, but without the legal status of the Green Belt. A recent review of green belt policy aimed to re-think the Green Belt as more of an 'Eco-Belt'—a more responsive and multi-functional zone of low-impact, high value-added, ecological and social diversity (Elson et al. 1993; Ravetz 2000; Natural England and CPRE 2009). This aspiration has to be fitted with the realities of a fast moving complex property market, interacting with a slow moving complex policy machine (Henderson 2005).

The general consensus of policy-makers is that Green Belt policy is a success: but there are contrasting views from business stakeholders who see development and enterprise being blocked: or from residents who see failures to contain development particularly in their own 'back yard'. By applying the PLUREL analytic framework the following evaluation emerged:

- *Robustness against change*: the success of the Green Belt is in its strong legal basis, and its perceived quality of permanence. There is concern from some policy makers that a more 'responsive' green belt policy would risk opening the doors to profit-seeking speculators and developers.
- *Policy integration and external effects*: the Green Belt is a mainly static or reactive policy tool with many impacts on local communities, local enterprise and integrated landscape management. Often, the role of peri-urban partnerships, such as the Community Forests, is to bridge the gaps between the Green Belt and other policies. On a wider note, the Green Belt ideal is rooted in the English aspiration for a 'green and pleasant land', and this has a positive side (landscape protection) as well as a negative side (maintaining housing values on the edge).
- *Overall effectiveness:* there are conflicting views either of success as seen by the majority or failure as measured by the stream of 'deletions' and 'exceptions' for

larger scale developments. However, the modelling work presented in the next section shows how even a small relaxation of Green Belt policy could lead to rapid urban expansion in locations which are otherwise very attractive for development, under the different shock scenarios.

The results of interview and workshop discussions are shown in summary form in the policy analysis table (Table 8.3):

8.5.2 Strategy 2: Green Infrastructure and Ecosystems

The Greater Manchester Green–Blue Infrastructure (GBI) strategy points to a wider scope for spatial policy, based more in partnership working, combining the mandate of the public sector, the enterprise of the private sector and a wider scope of community involvement (TEP Consultants 2008). It also raises questions of social and cultural values which are more than financial or functional, and of timescales which are more than the short term (Ravetz 2011a).

The MCR and the northwest region have seen much activity on creating GBI. This overlaps with the Community Forest role and activity. The Red Rose Forest for instance, had 120 active green area (woodland and other habitat) creation or management projects in 2010 (although, with the abolition of the North West Regional Development Agency, it now faces shortages in core funding, even while the policy agenda is ever more keen on GBI). At the regional level the exemplary Natural Economy Northwest programme produced tools such as the Green Infrastructure Guide, and topical studies such as 'Integrating Green with Grey Infrastructure' (NWDA 2008).

Generally, GBI is seen as a positive asset at both local and regional levels, contributing to social and economic welfare, climate change and carbon capture, local food production, and helping to meet the 'sustainable communities' objectives (Roberts 2008). However in reality GBI is still on the margins: core funding is much reduced, and project finance is often difficult, as is finding land and landowners willing to make long term commitments. However, there are new directions such as:

- Local food schemes which are growing rapidly, even while the definition of 'what is local food?' is still up for debate. In some cases local food (produced by new cultivation methods, niche products, farmer's markets, health and education schemes) is seen as a generator of social and economic development (as in the Todmorden example below).
- In the longer term, the possible policy implications of climate change on peri-urban areas may be many (impacts and vulnerability, mitigation policy, adaptation and resilience programmes etc.) (Gill et al. 2007). This suggests an increasing need for policy integration, where the linkages between social, economic, environmental and infrastructure activities can be combined (Fig. 8.6).

Table 8.3 Green Belt policy analysis and assessment

	Goals/objectives	Resources/inputs	Effects/outputs	Impacts/outcomes	Metrics
Ideology/ critique/ discourse	'England's green and pleasant land': 'dig for victory'			'Rich man in his castle'?	
Direct policy/ program/ project	Contain urban areas and encourage regeneration	Strong legal powers to control development	(+) most development controlled: (−) many larger land uses go ahead	(+) most housing areas contained: (−) urbanization of rural areas continues	% Change in GB area: % development on recycled urban land
Indirect effects/ external factors	(sustainable land management not an objective)	Rural village inset/ washing over policies: Rural affordable housing policies	Boundary effects: displacement: market distortion: Land speculation: land under-use:	Farm/business diversification is more difficult: Urban/rural areas are polarized:	Social mix in GB areas
Process factors	Relies on permanence to avoid land speculation	Review of GB boundaries is long and expensive	Successful challenges to the policy can claim legal costs from local authorities		% applications successful/on time
Context factors	Fragmentation between urban and rural governance: Lifestyle and location choices:	Rural/fringe development policies: Transport road/rail/ interchanges and infrastructure	Transport congestion: commuting growth:	Property regime: Urbanization of rural areas	

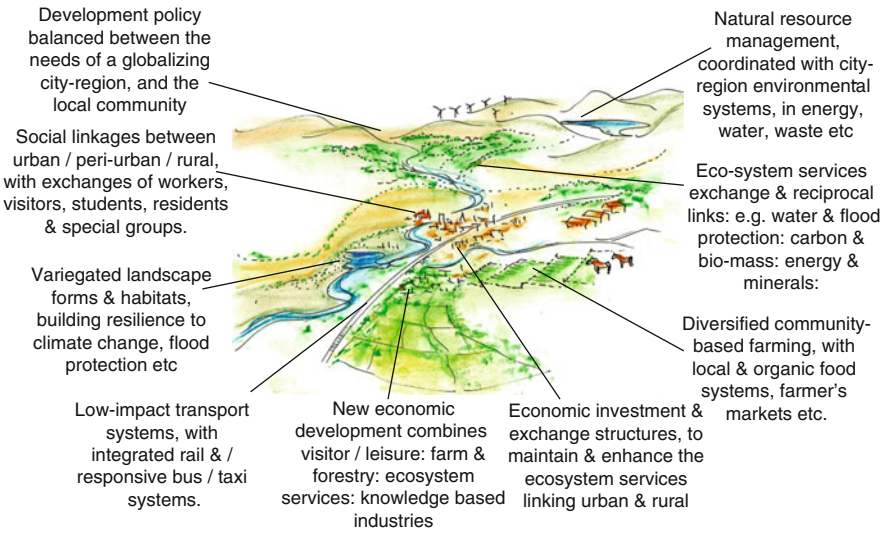

Fig. 8.6 Green infrastructure policy integration

8.5.3 Strategy 3: Local Development

There is an established (although not always well-funded) policy regime for 'rural development', with a patchwork of schemes and programmes aimed at peri-urban areas, often with larger populations than the more remote rural areas. In their own terms these programmes can be successful. However, it can be difficult to coordinate them, in the face of the trends for the urbanization/metropolitization of peri-urban areas by incoming commuters, high value housing, globalized businesses, and expanding activities such as tourism, conferencing, leisure and education.

The main local development framework comes from the Rural Development Plan for England (RDPE), funded by the European Agricultural Fund for Rural Development and UK Government. This has a budget of £3.9 billion (for the period 2007–2013), double that of the previous programme, over 80% being allocated directly to agri-environment and other land management schemes under 'Axis 2'. Over £600 million is being made available to make agriculture and forestry more competitive and sustainable, and to enhance social and economic opportunity in rural areas. The RDPE is the main platform for national level funding streams in rural areas, but the investments are spread thinly: the largest funding is Pillar 2 'High Level Stewardship' for special landscapes. However, this does not cover most peri-urban areas, which have no special recognition or framework, compared with more remote rural areas, and this is a major gap.

The local development strategy highlights the question of local governance, a very topical issue in peri-urban areas, where there may be major divisions between long-term local and newly incoming residents. One good example is the pilot programmes in the outer areas of Bradford (in the South Pennines on the eastern

edge of the MCR) which have set up active Parish Councils at the village level, with real decision making powers and financial resources. There are also area-based Forums for businesses, landowners, tourist developers, lobby groups, residents, and transport operators: these organize village and town schemes which help to build social cohesion through joint cultural, education and leisure activities.

The EU-funded LEADER programme which is now in operation in the South Pennines is also based on locally-led actions covering three strands: provision of basic services for the economy & rural population: village renewal and development: renovation and interpretation of local culture and heritage (Pennine Prospects 2008). Generally, this was seen by stakeholders to be successful, as being more locally directed and responsive to local concerns.

Although spatial planning, GBI and local development strategies appear in separate strands, greater added value can be obtained from integrated schemes. One excellent example is the award-winning "Incredible Edible Todmorden" local food scheme (www.incredibleedibletodmorden.org.uk). This has made links on a local economic development and small business/tourism agenda in a very creative way. It enhances social capital and enterprise, it produces local food, and it contributes to public health and education, while also enhancing GBI, landscape protection and climate adaptation. In this way it shows how divisions and possible conflicts between economic, social, environmental and spatial planning can be bridged by creative partnerships for multi-functional agendas.

8.6 Towards the Future

Scenarios help to explore alternative 'stories of the future', as explained in Chap. 1, which help to anticipate potential risks and opportunities and to test possible policy responses. In the MCR the PLUREL scenario framework was applied to a process of 'policy-scenario testing', including results from the Metronamica land use model. This process had three main stages: application of the 'locally adapted' scenarios to the MCR, modelling the results of different policy mixes, as far as possible and future-proofing the policies for robustness under each of the scenarios.

The adapted scenarios for the MCR include some topical points:

- *A1: 'Hyper-tech' scenario: globalized and privatized:* In the MCR, the city centres are networked outwards, to the airports and motorway junctions around the region. Unrestricted peri-urban development turns these nodes into booming business and residential clusters. A new range of private health and education facilities accelerates the transition to a 'gated society'.
- *A2: 'Extreme water' scenario: localized and privatized:* In the MCR this sees a potential resurgence of local identities—not all of them benign or tolerant to outsiders. In the South Pennines this builds on the historic tradition of local cooperation and self-reliance. On the Mersey plains the GBI programme runs

into challenges from communities and landowners preferring local short term benefits.

- *B1: 'Peak oil' scenario: globalized communities*: In the MCR, this reinforces the strategic planning of the city-region, bringing housing, jobs and services closer together, and connected by GBI for walking, cycling and horse-riding. Large peri-urban areas of under-used land are claimed for production of food or energy crops.
- *B2: 'Fragmentation' scenario: localized communities:* In the MCR power and resources shift towards the local level: the result is that more affluent areas erect barriers and withdraw resources from poorer areas. State provision of housing, health and education declines, while social enterprise takes over public services.

Overall, these scenarios show medium term possibilities (2020–2050): they show that prospects for peri-urban areas, raise many questions and uncertainties such as location choices, employment patterns, lifestyles and cultural shifts, globalization and technology networks, climate change impacts and adaptations, and so on. There are also dilemmas, contradictions, and resistance to the 'official' version: e.g. could speculators profit from flooding of low-lying areas? Or, could underground movements resist the corporate land-grabs? Such questions are not easy to replicate in technical models, but there is resonance with the wider policy debate. For instance, a PLUREL stakeholder workshop discussed the future of GBI, on a 'what-if' basis: (a) if there is no public money, or (b) if all land is community owned, or (c) if new schemes need security fences to keep out 'undesirables'. There are questions of resistance: how far the MCR fights against the tide of national/global change: e.g. the response of some to a 'global business' future is to strengthen local opposition and resilience. There are also questions of 'countervalence', in how far the MCR is one unit, or shows internal splits, conflicts, opposition movements etc. Generally the most challenging question is that of 'transition'—how far the future of the MCR can be forecast with 'trend projection', or anticipated creatively through a wider range of structural changes.

8.6.1 Urban Development and Land Use Modelling

Land use modelling in an older industrial area such as the MCR, is rarely simple: many land use changes are about multiple functions, or the quality of mixed land use, or 'indeterminate' land uses, or the detailed pattern which is beyond the resolution of the model. There are external forces to be translated into model terms: for instance the CAP regime may decide whether marginal land is kept in pasture: converted to habitats: opened for economic development: or left as unmanaged. There are internal policy agendas to be translated: for instance whether the MCR should aim to feed itself, a question with potentially large effects on the peri-urban. In this way land use modelling is not so much a forecast, more a way of exploring (a) different external conditions, and (b) alternative internal responses.

The key issues are shown in the scenario summary table, where population and economic trends are based on the NEMESIS and IIASA modelling for PLUREL (Table 8.4) (Box 8.1).

Box 8.1 Modelling Built-Up Areas in Manchester City Region: RUG Results

The four scenarios differ in the intensity and patterns of change in artificial surfaces (Fig. 8.7).

In the *Hyper-tech* scenario, rapid technological change, new transport technologies and few planning constraints lead to peri-urbanisation, particularly in the areas to the south and west of the city. There is less growth in rural areas compared to the other case studies, as the most of these are part of the Peak District national park (east of the city) and therefore less suitable for development.

The *Extreme water* scenario shows a similar picture to the Hyper-tech scenario, but with slightly lower and more compact growth. Extreme events such as floods and drought may affect most of the area.

In the *Peak oil* scenario, high fuel costs and strict planning policies concentrate growth in urban centres, though not in Manchester itself, which remains a shrinking city. Towns such as Warrington, on the railway line between Manchester and Liverpool, see the most growth (subject to Green Belt zoning policies).

The *Fragmentation* scenario shows a similar pattern to that of Peak oil, but the areas of high urban growth are more scattered. This reflects the clustering of communities by different age group, ethnicity, etc.

8.6.2 MOLAND Modelling Results

The MOLAND land use modelling enabled a finer grained analysis, with locally adapted scenarios from stakeholder inputs, higher resolution and more detailed land use classification. There was an issue in the calibration of the model: this requires a time series of compatible base-maps: but in the UK only the 2001 CORINE land use classification was available. In the event the calibration settings were adapted from modelling in the parallel project ‘Eco-cities’, and the three selected policies were analysed as follows:

- Green Belt and similar zoning policy: the results show the sensitivity of land use outcomes to policies which control development in very desirable locations. This is topical for the current UK debate, not just in the Green Belt but beyond, in areas with less formal zoning policy. This is also relevant to ‘brownfield’ and other urban regeneration policy: although there are many sites (as listed in the UK National Land Use Database) which can be prioritized by policy, the total areas are small in relation to other population and household density trends.

Table 8.4 Scenario modelling parameters for the Manchester city-region

General demographic parameters	'Hyper-tech' A1 Globalizing/privatizing	'Extreme water' A2 Localizing/privatizing	'Peak oil' B1 Globalizing/public	'Fragmentation' B2 Localizing/public
General PLUREL scenario	Rapid technology innovation and counter-urbanisation	Rapid climate change and defence of the cities	Energy price shock and retreat from the peri-urban	Communities in retreat with polarisation of cities
Population growth per year	0.41 %	0.30 %	0.19 %	0.30 %
Urban/peri-urban pop. growth	Low/high	High/medium	Medium/low	Medium/medium
GDP growth *(figures from 2007)*	3.02 %	2.62 %	2.12 %	2.00 %
"Shock" storyline	Rapid technology advance	Extreme water and weather events	Peak oil and effects on road transport	Fragmentation, social exclusion
General migration pattern	Out-migration to peri and rural areas (+ metro-lifestyles)	Stagnation and clustering towards growth areas	In-migration to larger urban centres	Fragmentation into smaller communities
Spatial patterns in Manchester city-region	Manchester CR grows as a global hub, with waves of global capital spinning out from the centre and the peri-urban hubs	Manchester CR urban economy stagnates, along with peri-urban retail and business parks	Manchester MCR becomes a national/EU centre of governance, public services and social innovation	Manchester CR reverts to 500 neighbourhoods, gated enclaves spring up in the peri-urban zone
Implications: for peri-urban	Peri-urban becomes segmented by carefully graded differences in value and status, coupled with risk and opportunity	Chaotic zone of hazardous areas, private enclaves, and informal/illegal landuses: floods and storms, while planning and investment reduces	Carefully planned at national and regional level, with green infrastructure and multi-functional land for food, biodiversity and climate adaptation	Ideal space for self-contained communities to grow, with many functions of food, energy, water etc., in an 'archipelago of enclaves'

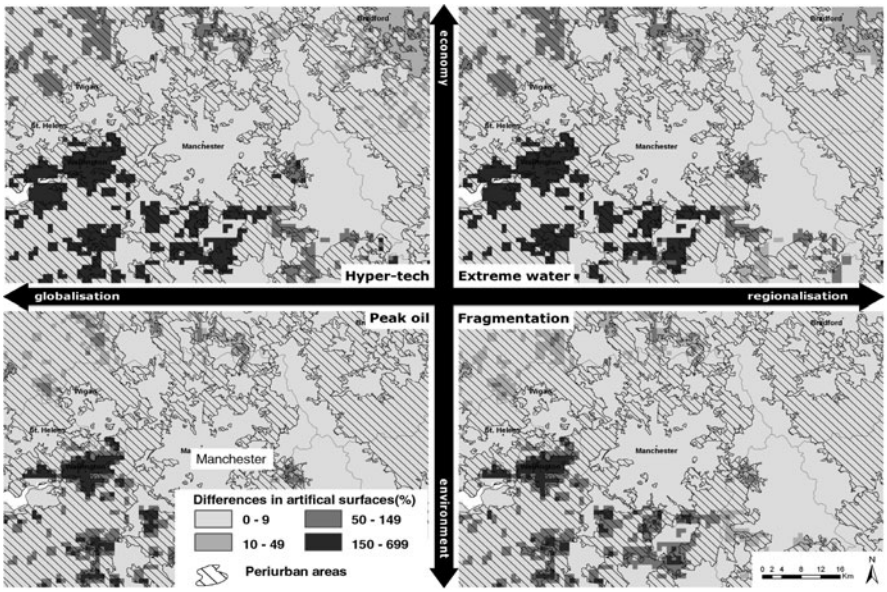

Fig. 8.7 Shows the development of artificial surfaces in the Manchester region according to the RUG (Regional Urban Growth Model) model for the year 2025 (Source: University of Edinburgh)

The deregulated approach of scenarios A1 and A2 shows as a chaotic diffusion of development across the landscape.

- GBI is modelled approximately by 'urban green' and 'forest/community woodland' categories, although in reality much GBI is at a much finer scale than 100m cells. The modelling shows some contradiction between urban density and GBI: i.e. increases in GBI areas are most visible in the Hyper-tech scenario of counter-urbanization. Designated ecological sites are relatively small in the MCR, and the total makes little difference to the stock of land for development. However, National Park policy is crucial: any policy relaxation opens the door to rapid development, as seen in the A2 'extreme water' scenario.
- Local development policy can be modelled indirectly by enabling smaller scale growth in more remote towns and villages: the results depend on spatial planning, as to whether there are very small clusters on open land (which may or may not be eco-villages or commuter villages), seen in scenarios A1 and A2: or instead, expansion and densification of existing settlements, as in scenarios B1 and B2.

Overall there is a topical question on which is the 'baseline' scenario, closest to existing trends: in the UK, as of 2011, this looks like the A2 *'Extreme Water'* scenario, of low growth, deregulated policy, private enterprise and climate-related problems. This is shown in more detail (Fig. 8.8). Higher density urban form shows a few increases around city centres: lower density increases in suburban areas, and

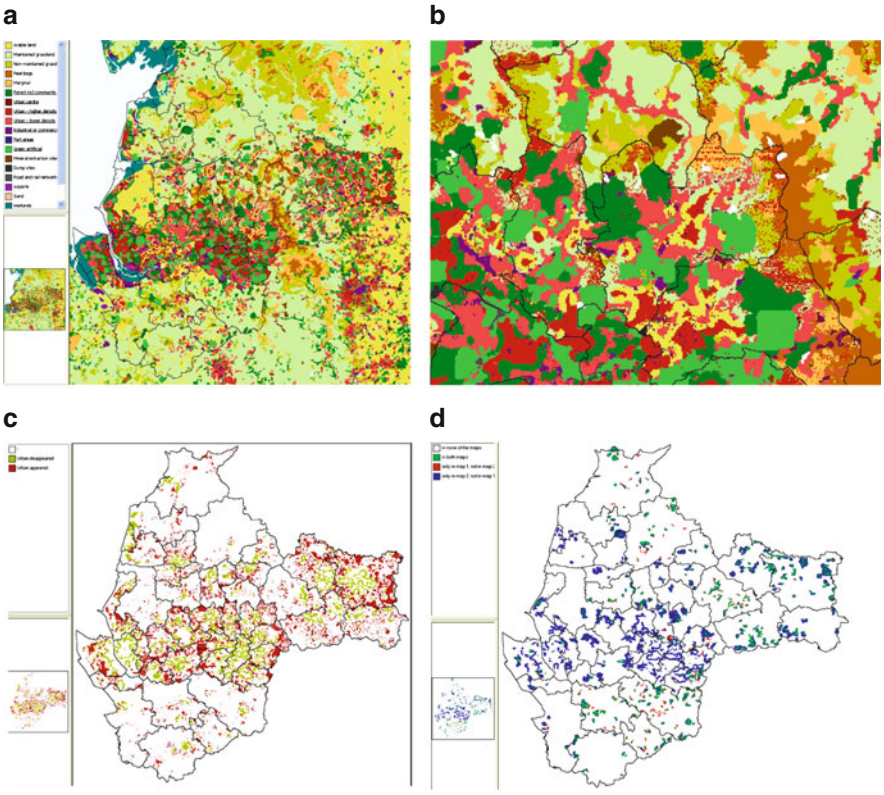

Fig. 8.8 MOLAND model results: (**a**) landuse map 2050; (**b**) landuse map 2050—detail; (**c**) urban expansion 2050; (**d**) forest land—comparison 2000–2050

locations not covered by Green Belt or ecological protection. In this scenario the Green Belt was modelled as 'negotiable', so where conditions of proximity or accessibility are favourable, then the pressure for low density development breaks through. Development is relatively unrestricted in floodplains and national parks: while industrial brownfield land tends to remain derelict and vacant.

8.6.3 Quality of Life Impacts of Lands Use Change

The attitudes and preferences of the population are the other half of the policy agenda. These were tested as for some of the other case studies using the conjoint method and the Quality of Life simulator (see Chap. 3). Box 8.2 summarises the results of the survey for Manchester.

Box 8.2 Results of the Quality of Life Indicator Analysis for MCR
As part of the quality of life indicator work (see Chap. 3), a sample of people in MCR were asked about their perceptions of different factors of the environment in relation to their perceived quality of life. The results are statistically valid owing to the good sample size and they offer some insights into the factors which people view as important. The most important issue as an indicator of environmental quality of life is a feeling of safety and security which might change if areas change their character, perhaps more densely populated and less well managed. The second factor in importance is suitability of housing, this being an important factor in a country with high levels of owner-occupancy where a house is a major investment. Noise is the next most important factor—traffic noise, aircraft and noisy neighbours may all have an impact. Convenience of transport is the next priority—if land use change results in slower and less convenient transport or commuting times then people are less happy with their living environment. Air quality comes next—pollution from cars and industry may be important in inner city areas and next to major highways. The availability of shops comes next on the list—this may be connected to the changes in distribution of shopping opportunities. Thus, if land use change as a result of urban densification or further shrinkage starts to affect the higher level indicators negatively people may try to move to somewhere better. Waste collection service comes second to last with—surprisingly—access to green space being the bottom of the list, despite its perceived importance in other surveys. A more sophisticated analysis of the variability amongst the population and their current environment—such as whether they lived in a leafy suburb or inner city is contained within the Quality of Life Simulator which enables some of these factors to be tested along with predicted land use changes (Fig. 8.9).

8.6.4 Environmental-Economic Valuation

A topical question for peri-urban MCR, as elsewhere, is the value of landscapes or ecosystems, or the costs/benefits of land use changes and policies. Such values should, in principle, be used to justify community forestry or GBI programmes, which might appear to generate large added value for modest investment. A new approach, 'The Economics of Ecosystems and Biodiversity', is based on a functional analysis of 'ecosystems services' (TEEB 2010). However, there are many problems with putting money values on functions which are not in the market place, as outlined in Chap. 3. Such questions point towards new concepts in environmental economics, going beyond a reactive cost-benefit analysis of fixed ecosystem relationships, towards a creative 'institutional design' approach which focuses on collaboration and added value (Everard and Ravetz 2009). This was the starting point for a pilot study in the MCR (Chou and Taylor 2010).

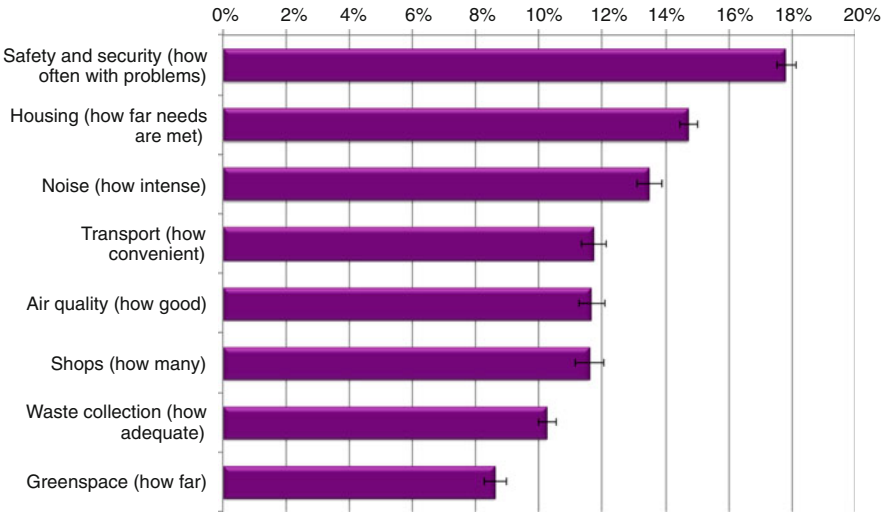

Fig. 8.9 Social group and environmental economic analysis

The study looked at alternative policy options for the Mosslands area in Salford, one of the largest Red Rose Forest sites. This is a unique ecological habitat, now under pressure and needing a strong planning and management strategy. The land use mix includes zones for biodiversity, hydrological management, agricultural, and public access. Three policy options (spin-offs from the main PLUREL scenarios) included 'no intervention', 'maximum wetland' and 'integrated vision'.

In each case the economic valuation looked at the direct costs of land tenure, reclamation and restoration, planting, and maintenance and direct benefits from ecosystems services, e.g. production, flood management and soil conservation. The outcome suggested that indirect factors are both larger and more uncertain than direct factors, and with a 30-fold difference between the highest and lowest estimates. Assuming a median point between the highest and lowest values, the initial results are very topical: by far the greatest benefit (between 14 and 21 million GBP per year) is found in the 'maximum wetland' policy option, under the conditions of the 'Hyper-tech' scenario.

Further economic analysis could aim to explore more extended value chains, as often found in local development with multi-functional land use. For instance, the Incredible Edible Todmorden scheme described above involves the public, private and social sectors, generating values which are financial, social and environmental. This is achieved by using marginal land at minimum public cost with spin-off benefits such as improved health and well-being. This suggests a 'relational economics' approach to added value which is realized through collaboration between stakeholders (Bathelt and Gluckler 2011). This approach potentially generates much greater values than expressed in a conventional 'bottom line' figure, and could be the start of a wider socio-economic-political debate.

8.7 Conclusions and New Directions

8.7.1 Sustainability and Peri-Urban Linkages

Settlements and landscapes continuously change and evolve into new kinds of structures and patterns, providing new types of functions. In a peri-urban area which is simultaneously globalizing and localizing, such changes are multi-level and inter-connected. So how do policy makers decide what is 'sustainable'? This is not only an academic question, but at the heart of the policy discourse. In the MCR of 2011, 'sustainability' is often stated to be the ultimate policy goal, but is rapidly becoming devalued as a term, and is in need of more clear and practical criteria.

In the case of MCR, a previous study of 'integrated planning for sustainable urban development' explored the inter-connections between sectors and locations across the city-region (Ravetz 2000). Applying this thinking to the peri-urban MCR, there are added dimensions to be considered, such as competition or conflict between urban and rural, between local and regional, and between communities and landscapes. The peri-urban is at the interface between each of these, and is both a territorial and a functional system. So we can propose here a working definition for 'peri-urban sustainability', based on the MCR experience (Ravetz 2011b):

> . . . a spatial pattern which enables positive interactions between economic, social and environmental systems in both settlements and landscapes, which promotes self-organization, multi-functionality, diversity and resilience, with low impact and high value added to all stakeholders, internal and external.

To implement such a concept through policy needs some kind of territorial definition: and this was one of main themes of the PLUREL research: that the 'Rural–urban-Region' is the optimum territory for the integration of policy between urban, peri-urban and rural areas. However, in the MCR as elsewhere, the actual boundaries of ecosystems, watersheds, economic markets or social communities, are rarely the same as governance units. So a governance system based on the Rural–urban-Region does not often work well in fixed boundaries, but is more likely to be effective in a flexible multi-level framework of functions and linkages (as discussed in Chap. 1). The MCR experience points to such linkages, and the opportunities for policies to align them towards the 'sustainable peri-urban':

- Direct rural–urban linkages: efforts in the MCR on Green Blue Infrastructure, flood management and climate change adaptation are pointing in this direction. However, it is often difficult if not impossible to raise the investment and secure the returns. A strategic approach to Rural–urban-Region governance would ensure that investment would be available wherever it adds value.
- Indirect rural–urban linkages: if the urban resources of the MCR are mobilized for re-investment in the peri-urban surroundings, then there would be added-value on both sides. This might be realized through ecosystems services valuation and payment/exchange systems.

- Social-cultural linkages: in the MCR there are visible problems in peri-urban settlements, such as rural housing shortages, deprivation in peripheral public housing estates and fragmentation of growth and decline. For each of these there are also opportunities which can be mobilized by looking at new kinds of linkages: ecological enterprise, economic diversification, social interaction and cultural exchange.

8.7.2 Update: Spatial Development Post-Planning in the UK

The UK planning and development community is (at the time of writing) in flux: the Coalition government of 2010 brings not only radical changes in structures, but a different mindset to the underlying concepts of spatial planning. The shift from the previous 'managerial' approach, to a more bottom-up 'localism' approach, comes alongside major cuts to local government and regeneration programmes, particularly in deprived areas. Many areas of policy, legislation and funding are still uncertain and lack details. So, the results of the MCR research are now pointing towards a rather different situation from the one which was studied.

The Coalition agenda is based on the 'open source planning' concept, of small state and 'big society' (Conservative Party 2009). The draft National Planning Policy Framework, having abolished regional planning, rests for coordination on a so-called 'Duty to Cooperate' between 432 local authorities. The 'Local Enterprise Partnerships' aim to coordinate city-regions, but with ad-hoc and uncertain powers and resources, and split between economic growth and the 'new localism' (CLG 2011b).

The question here is: what are the implications of the new regime for peri-urban areas, and how to move forwards? The new system may in some cases bring opportunities for local resources: for example there are proposed powers for communities to take over local services such as pubs or shops, and this reflects some of the MCR's best practice examples. However the withdrawal of public funding from nearly all forms of local voluntary sectors and social enterprises, raises the threshold over which such local actions must cross.

There is also an agenda for 'marketization' which is showing up in various ways: a 'New Homes Bonus' to provide incentives to allocate housing sites: land auctions for realizing the appreciation of value on development: and the possibility of direct payments to local planning authorities—which some argue, opens the door to the 'sale of planning'. For the peri-urban, this might appear a realistic and entrepreneurial approach to the realities of development, i.e. if finance is the main driver of action, then success depends on its mobilization. Others foresee chaos and confusion, where neighbourhood plans in the peri-urban are dominated by wealthy landowners, while in less desirable locations, larger developers effectively 'buy the plan'.

At the strategic level, there is a belated recognition of the need for infrastructure planning across city-regions, and the MCR in many ways appears to be a

demonstration case. At national policy level, and also in the 'City Deal for Greater Manchester' (Greater Manchester Combined Authority 2012), major schemes for road and rail, water and energy are all proceeding rapidly. Generally it is likely that the growth lobby for infrastructure, business and housing, coupled with the increasing privatization of health and education, and the regulation of national targets for brownfield recycling and retail hierarchies, will have major impacts on development in the peri-urban. It also proposes to "reduce unnecessary cost and delay to developers by setting up a Major Infrastructure and Environment Unit; streamlining guidance; setting clearer standards for evidence; and changing the culture of statutory bodies" (HM Treasury 2012, pp 44, 45). The effect on the peri-urban could then be shaped through socio-economic patterns: wealthy educated communities are likely to resist development through active neighbourhood planning: deprived or declining communities are likely to be over-ruled or bought off by powerful interests.

Both opportunities and threats can be seen in the largest private sector property portfolio in the UK, based on the corridor of the Manchester ship canal. The 'Atlantic Gateway' promoted by Peel Holdings, provides much of an integrated sub-regional plan for economic development and GBI, and unlike most public bodies, has the resources to carry it out (Peel Holdings 2010).

Finally, there is a topical agenda on 'ecosystems services' (ESS)—proposed by the Millennium Ecosystem Assessment (UNEP 2005, 2010), as the functions provided to human society by natural ecosystems. 'The Economics of Ecosystems and Biodiversity' ('TEEB') now takes these functions into the economic realm with a valuation and exchange approach. Again, for the UK peri-urban agenda, there is great uncertainty. If we assume a re-emergence of strategic planning, then the ESS concept could help to shape the relationships and linkages between urban, peri-urban and rural. However if we assume a" localist" and entrepreneurial approach, then ESS become more like financial commodities, subject to speculation, profiteering and moral hazards of all kinds. There may be opportunities where communities, towns or cities can self-organize the management and purchase of ESS resources with their hinterlands: alternatively there may be stalemate or open conflict between opposing interests.

8.7.3 Recommendations and Next Steps

Overall, the lessons from the MCR have wider significance, particularly for more mature and knowledge-based city-regions. Although the spatial expansion of the physical urban structure has slowed, the restructuring process continues, with many forms of transitions—economic, political, technological, social and cultural—and with new constraints and opportunities. Three main policy recommendations for the peri-urban MCR can be summarized as follows:

- To promote strategic planning and investment (whether managerial or entrepreneurial), which works across the wider city-region (or, 'Rural–urban-Region').
- To enhance the linkages (urban-rural, social-economic-environmental, and local-strategic), and the opportunities for enterprise which combines social, economic and environmental values.
- To enable self-organization, diversity and resilience (social-economic-environmental), at the community and landscape levels.

Overall it can be argued that policy for peri-urban areas is as important as for urban core areas, which tend to demand most policy attention and receive most of the available funding. What stands out is the need not only for *better* governance (e.g. strategic planning authorities, or IT-enabled town halls) but *new forms* of governance. Such new forms can be framed as 'shared intelligence and learning capacity, to respond creatively to complex multi-level and multi-lateral problems and opportunities' (Ravetz 2011b). Through this a more advanced and pro-active concept of a 'sustainable peri-urban region' begins to emerge. This aims to work with the challenges raised by the UK coalition's 'brave experiment' on the front line between localism and economic development. In this way the MCR experience highlights an upcoming agenda, for others in Europe and beyond to build on.

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References

Bathelt H, Gluckler J (2011) The relational economy: geographies of knowing and learning. Oxford University Press, Oxford

Benedict MA, McMahon ET (2001) Green Infrastructure: smart conservation for the 21st century. The Conservation fund. Sprawl Watch Clearinghouse, Washington, DC

Berkes F, Colding J, Folke C (2003) Navigating social–ecological systems: building resilience for complexity and change. Cambridge University Press, Cambridge

Bibby P, Shepherd J (2004) Developing a new classification of urban and rural areas for policy purposes: the methodology. DEFRA, London

Blair AM (1987) Future landscapes of the rural-urban fringe. In: Lockhart DG, Ilbery B (eds) The future of the British rural landscape. Geo Abstracts, Norwich

Brand P, Thomas MJ (2005) Urban environmentalism: global change and the mediation of local conflict. Routledge, New York/Oxford

Breheny M, Rookwood R (1993) Planning the sustainable city region. In: Blowers A (ed) Planning for a sustainable environment. Earthscan, London

CABE (Commission on Architecture and the Built Environment) (2010) Community green: using local spaces to tackle inequality and improve health. CABE, London

Cameron D (2011) Speech to the conservative party conference. Reported as: Cameron labels planning officials 'enemies of enterprise': Planning, 7 March 2011
Chou WJ, Taylor T (2010) Applying environmental valuation methods to assess benefits of Peri-Urban Land Use Policy—the Mosslands project. PLUREL working paper. www.manchester.ac.uk/plurel. Accessed 12 Jan 2012
CLG (Communities and Local Government) (2011a) Draft national planning policy framework. CLG, London
CLG (Communities and Local Government), (2011b) A plain English guide to the localism bill. CLG, London
Conservative Party (2009) Open source planning. Policy green paper 14. Conservative Party, London
CPRE (Campaign for the Protection of Rural England) (2007) 2026: a vision for our countryside. CPRE, London
CURE (Centre for Urban & Regional Ecology) (2003) Sustainable development of the countryside around towns: main report to the countryside agency. Natural England, Wetherby, UK
Douglas I, Ravetz J (2011) Urban ecology: the bigger picture. In: Niemelä J, Breuste JH, Guntenspergen G, McIntyre NE, Elmqvist T, James P (eds) Urban ecology: patterns, processes, and applications. Oxford University Press, Oxford
Duany A, Plater-Zyberk E, Speck J (2000) Suburban nation: the rise of sprawl and the decline of the American dream. North Point Press, New York
Elson M, Walker S, MacDonald R, Edge J (1993) The effectiveness of green belts. DOE, HMSO, London
Engels F (1845) The condition of the working class in England, 1958th edn. Blackwell, Oxford
Everard M, Ravetz J (2009) Ecosystem services—joined up thinking in an interdependent world. Environ Sci Spec Issue Environ Futures 18(2):15–20
Fairlie S (1996) Low impact development: planning and people in a sustainable countryside. Earthscan, London
Florida R (2004) The creative talent: cities and the creative class. Routledge, New York
Gallent N (2006) Planning on the edge. Routledge, Abingdon
Gill S, Handley J, Ennos R, Pauleit S (2007) Adapting cities for climate change: the role of the green infrastructure. Built Environ 30(1):97–115
GMCVO (Greater Manchester Council of Voluntary Organizations) (2007) On the edge? Perceptions of Greater Manchesters rural and fringe communities. GMCVO, Manchester
Hajer MA (2003) The politics of environmental discourse: ecological modernization and the policy process. Oxford Scholarship Online, Oxford
Handley J, Wood R (1998) Defining coherence for landscape planning and management: a regional landscape strategy for North West England. Landscape Res 23(2):133–158
Harvey D (1995) The condition of post-modernity: an enquiry into the conditions of cultural change. Blackwell, Oxford
Henderson K (2005) Tensions, strains and patterns of concentration in Englands city-regions. In: Hoggart K (ed) The Citys Hinterland: dynamism and divergence in Europes peri-urban territories. Ashgate, Aldershot
Heynen N, Kaika M, Swyngedouw E (eds.) (2005) In the nature of cities: urban political ecology and the politics of urban metabolism. Routledge, London and New York
Hoggart K (2005) City hinterlands in European space. In: Hoggart K (ed) The City's Hinterland: dynamism and divergence in Europe's peri-urban territories. Ashgate, Aldershot
Hyde M, O'Rourke A, Portland P (2004) Around the M60: Manchester's orbital motorway. AMCD Publishers Ltd, Manchester
Kaika M (2005) City of flows: modernity, nature, and the city. Routledge, New York
Kasarda JD, Lindsay G (2011) Aerotropolis: the way well live next. Farrar, Straus and Giroux, New York
Kitchen T (1997) People, politics, policies & plans: the city planning process in contemporary Britain. Paul Chapman Publishing, London

Lee N (2007) Ideopolis: the knowledge city-region—distinctiveness and knowledge cities. The Work Foundation, London
Lloyd PE (1980) Manchester: a study in industrial decline & economic restructuring. In: White P (ed) The continuing conurbation: change & development in Greater Manchester. Aldershot, Gower
GMCA (Greater Manchester Combined Authority) (2012) Greater Manchester city deal. AGMA, Wigan
Natural England (2009) Green infrastructure guidance: (NE176) Natural England, Wetherby, UK
Natural England and CPRE (2009) Green belts: a greener future. Natural England and CPRE, Cheltenham, UK
New Economy Manchester (2008) Rural economic baseline study. Manchester, New Economy Manchester
Nicholas R, McWilliam GA (1962) Planning the city of the future. In: Carter CF (ed) Manchester and its region: a survey prepared for the British association. Manchester University Press, Manchester
Nicholson-Lord D (1987) The greening of the cities. Routledge, London
NWDA (North West Development Agency) (2008) Developing an outline strategy for linking green and grey infrastructure: Warrington, NWDA. Available on http://www.naturaleconomy-northwest.co.uk/resources+reports. Last Accessed 12 Jan 2012
Peel Holdings (2010) Accelerating growth across the Manchester and Liverpool City regions: framework for a global growth opportunity. Peel Holdings, Liverpool
Pennine Prospects (2008) South Pennines LEADER: local development strategy: core strategy: 2008–2013. Bradford, Pennine Prospects. Available on http://www.pennineprospects.co.uk/leader. Last Accessed 15 Mar 2012
Randles S, Green K (2006) At the interface of innovation studies and industrial ecology. In: Randles S, Green K (eds) Industrial ecology & spaces of innovation. Edward Elgar, Cheltenham
Rauws WS, de Roo G (2011) Exploring transitions in the peri-urban area. Plann Theor Pract 12(2):269–284
Ravetz J (1999) Citizen participation for integrated assessment: new pathways in complex systems. Int J Environ Poll 11(3):331–350
Ravetz J (2000) City-region 2020: integrated planning for a sustainable environment. Earthscan with the TCPA, London
Ravetz J (2011a) Peri-urban ecology: green infrastructure in the twenty-first century metro-scape. In: Douglas I, Goode D, Houck MC, Wang R (eds) The Routledge handbook of urban ecology. Routledge, Abingdon
Ravetz J (2011b) Exploring creative cities for sustainability with deliberative visualization. In: Girard LF, Nijkamp P (eds) Creativity and sustainable cities. Heinemann, Oxford
Roberts P (1998) Retrospect and prospect. In: Roberts P, Thomas K, Williams G (eds) Metropolitan planning in Britain: a comparative study. Jessica Kingsley, London
Roberts P (2008) Sustainable communities policy, practice and professional development: a model for Europe. In: Cooper I, Symes M (eds) Sustainable urban development: changing professional practice. Routledge, London
Roberts P, Ravetz J, George C (2009) Environment and city: critical perspectives on the urban environment around the world. Routledge, Oxford
RTPI (Royal Town Planning Institute) (2006) Uniting Britain: the evidence base—spatial structure and key drivers. RTPI, London
Scott AJ (2000) The cultural economy of cities: essays on the geography of image-producing industries. Sage, New York
Scott AJ (2006) Creative cities: conceptual issues and policy questions. J Urban Aff 28(1):1–17
Sherriff G (2012) From burden to asset: the political ecology of sustainable transport: town and country planning, (forthcoming)
Shoard M (1983) This land is our land. Paladin, London

Soja E (2000) Postmetropolis: critical studies of cities and regions. Blackwell, Oxford
TCPA (Town and Country Planning Association) (2006) Connecting England. TCPA, London
TEEB (2010) The economics of ecosystems and biodiversity in local and regional policy makers. UNEP, New York
TEP (Consultants with Natural England) (2008) Towards a green infrastructure framework for Greater Manchester. AGMA, Wigan
HM Treasury (2012) Budget 2012, HC 1853. HM Treasury, London
UNEP (2005) Living beyond our means—natural assets & human wellbeing: a statement from the Board. UNEP, New York. Available on www.milleniumassessment.org
UNEP (2010) The economics of ecosystems and biodiversity: mainstreaming the economics of nature: a synthesis of the approach, conclusions and recommendations of TEEB. UN Environment Programme, New York
Ward K, Fagan C, McDowell L, Perrons D, Ray K (2010) Class transformation and work-life balance in urban Britain: the case of Manchester. Urban Stud 47:2259–2278
Wong C, Ravetz J, Turner J (2000) The UK spatial planning framework. Royal Town Planning Institute, London
Wood R, Ravetz J (2000) Recasting the urban fringe. Landscape Des 294:13–16
Wray I (2011) In search of strategic sites: North West England, 1990–2010. Town Plann Rev 82(3):1–10
Wray I, McPherson C (2006) Mersey: the river that changed the world. Bluecoat Press, Liverpool