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PLUREL

Manchester City-Region - Newsletter #2

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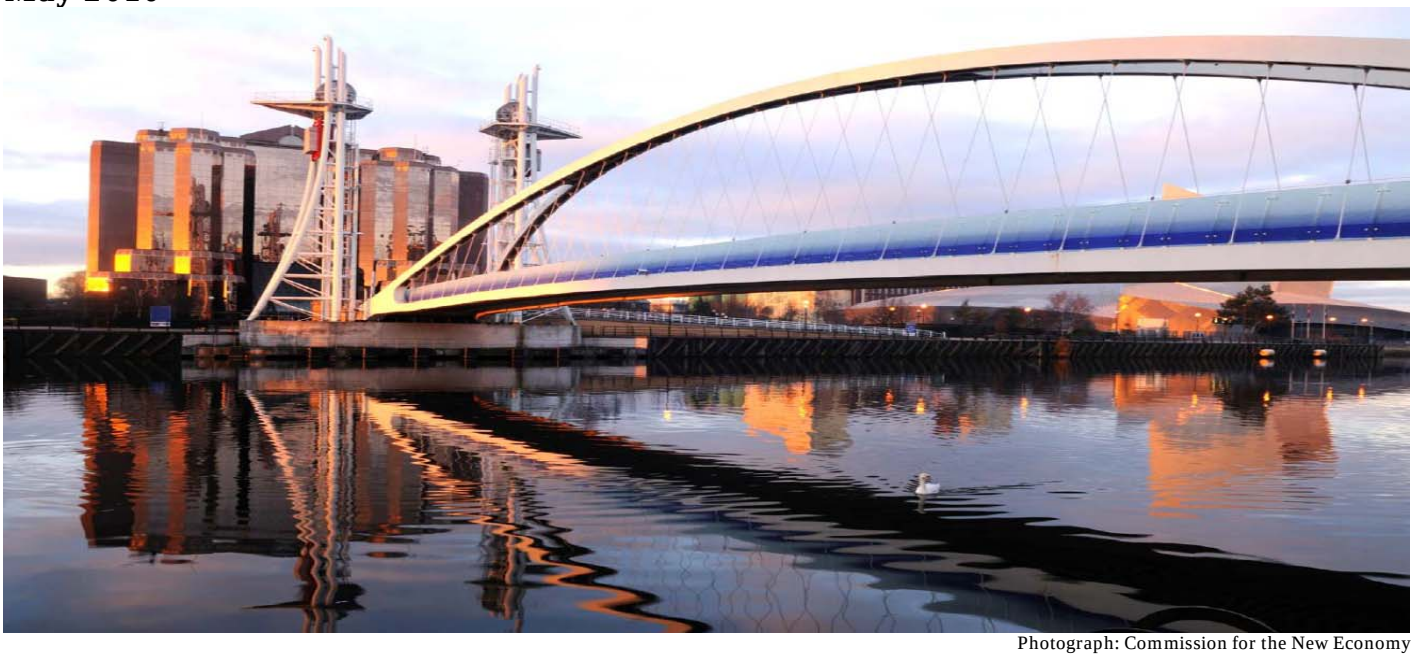


Photograph: Commission for the New Economy

Putting together the metro-scape: research directions from the Manchester city-region

Background

Most of England is not urban, or rural, but somewhere between – a new 'peri-urban' landscape or 'metro-scape', in the fringes and hinterlands of cities and city-regions. The rapid changes in such areas bring many problems– climate impacts, road traffic, ageing population, landscape stress, urban-rural migration, farm changes, tourism impacts, and simple development pressure.

Such peri-urban areas form a new kind of geography, neither urban or rural, but a new configuration of settlements and landscape. This reflects a more networked, mobile, globalized society, but one which also needs local character and quality of life.

The PLUREL ("Peri-urban Land Use Relationships") is a large consortium research project, funded by the EC, and coordinated by the University of Copenhagen. It aims to provide a scientific analysis of urbanization and spatial strategy for peri-urban areas (see www.plurel.net for details).

At the centre is a set of in-depth case studies in 7 cities, including one on the Manchester City-Region (MCR). We aim to provide a unique perspective on the peri-urban-rural areas surrounding the conurbation. This also focuses on two areas with partnership organizations on the ground – the South Pennine area and the Community Forest area.

Manchester city-region

The MCR was the birthplace of the industrial revolution, and also the digital revolution. It continues to restructure, innovate, create and invent the future.

The MCR is also an excellent case study for peri-urban research. It has a polycentric structure, with an active spatial planning and governance, and a long history of urban fringe policies and programmes (Ravetz, 2000). As in much of England, large areas are peri-urban '***metro-scapes'***, both by proximity to urban areas, or by the diffusion of urban social and economic activities and cultures.

In MCR there are policies for urban setttlements which happen to be in the peri-urban locations. There are rural policies and development programmes, which are targeted in

some cases to 'near rural' and 'remote rural'. In between are policies for the urban fringe, centred on the Green Belt, green infrastructure, reclamation of derelict and polluted land, and local economic / social enterprise. These different policy regimes don't always mesh together: with periodic droughts in public funding: regular changes to governance structures: and continuing pressures – land for development, economic change, social change and new environmental agendas.

Some common metro-scape types in the MCR were selected for more in-depth analysis:

- South Pennine uplands – mixed industrial settlements, strong local identity and landscape quality, some commuting, small scale agriculture, local leisure and tourism.
- Mersey Belt area – mixed industrial settlements, with a partnership programme aiming to rebuild a multi-functional green infrastructure, led by community forestry and waterway rehabilitation.
- a third area type is the Cheshire lowlands, to the south of the conurbation: high quality farming, wealthy market towns and commuter settlements: also with heavy industry along the Mersey river estuary.

Research agendas

The MCR story was the focus of a multi-level research agenda, based on **'policy-scenario testing'** (Figure 1). This starts with an enquiry into 'what is the problem' – depending on who is asking, there are economic, social, environmental and political issues to be addressed. And depending on the frame of reference, these might be local, or at the level of districts, conurbations, regions or larger spaces.

Then, there is a wide range of evidence and research results – spatial, environmental, economic, social: from historical study, spatial analysis, policy analysis and scenario development. This combined stakeholder interviews, workshop discussions, with desk study and technical modelling. (The spatial data is now in the 'urban atlas' at: www.manchester.ac.uk/plurel).

But there is still a widening gap between 'research' and 'policy'. So we aimed to use the evidence as far as possible, to explore new opportunities and solutions to the problems. This involved not only step-by-step thinking, but also creative insights with the help of multi-media communications. This helped to identify wider transitions in the MCR, with opportunities for new kinds of governance, markets and social enterprise.

Scenario analysis

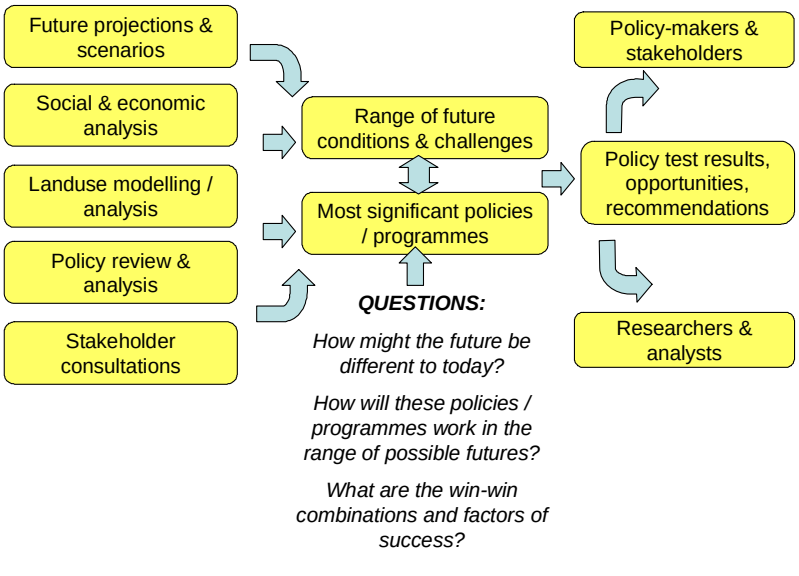
To bring all this together, a scenario development process was followed through, in collaboration with stakeholders. The scenarios were adapted from the PLUREL core scenario framework, which was based on the IPCC world climate scenarios. These were then fed through the consultations, to identify the most topical issues, and in particular the prospects for the main policy / strategy types, as below. This version of policy-scenario testing had 3 main stages, with the added input of the MOLAND spatial development model. It could then focus on the central questions:

- How might the future be different to today?
- How will these policies / programmes work in the range of possible futures?
- What are the win-win combinations and factors of success?

The results will be complete in late 2010: but the initial responses from stakeholders were very topical, with interesting contrasts to the 'top-down' scenarios, based on external driving forces. Also, beneath the changes on the surface there are deeper questions:

- **Resistance**: how far the MCR goes along with, or fights against, the tide of national / global change: e.g. the response of some to a 'global business' future is to strengthen opposition and resilience.
- **Counter-valence**: how far the city-region is a coordinated unit, or, showing internal tensions, conflicts, radical contrary movements etc. For instance, there could be pockets of community enterprise or black economy, side by side with extreme concentrations of global capital.
- **Transitions and co-evolution**: how far the city-region may be qualitatively different in 20 / 40 years, due to qualitative changes in society, governance, economy and culture – as well as the more obvious factors of technology and landuse.

'Policy-scenario testing' method



One of the most interesting angles is the focus on 'dilemmas and contradictions'. Here, scenarios can help to expose the contradictions of the present, by projecting into the future. For instance,

- **Hypertech scenario**: this is a conventional high-growth private sector future, enabled by IT innovation. But there is a dilemma: "the high growth hi-tech MCR will sooner or later run out of physical room – there is literally not enough space for all to live the suburban dream, without expanding into large rural areas, and thereby destroying the qualities and resources which they aspire to..."
- **Extreme water scenario**: this is a twist on the above – private enterprise but rather localized and inefficient. This might see ".. a rapid growth in yards and sheds for vehicles, construction materials, allotments and recycling materials of all kinds. These shed-lands and plot-lands could spring up in the cracks between roads and factories. They would be difficult for a 'light' spatial planning system to resist, as the main prospects for growth, reclamation and local food for low income households."
- **Peak oil scenario**: this is a 'good' scenario with active global government and social welfare, enough to cope with the end of fossil fuels. "... A global sustainability agenda sounds good in theory, but when it means displacement of existing activities such as leisure on marginal land, or low value housing and businesses, then there could be strong resistance at the local level."
- **Fragmentation scenario**: this is a twist on the public sector / community based future, which ends up being localized, elitist and exclusive. This produces interesting dilemmas - "The policy aspiration for a 'sustainable city-region' could be more difficult in many ways: as local action groups block any infrastructure schemes: housing needs cannot be met through new development: wealthy 'sustainable communities' protect their quality of life behind security gates"

Such dilemmas and contradictions are not easy to replicate in technical models, but there is resonance with the policy analysis. For instance, the MCR green infrastructure community can explore how to plan and find money for green infrastructure, if: (a) there is no public money, or (b) all land is community owned, or (c) all schemes are built with fences to keep out undesirables.

Economic analysis

Such dilemmas point towards new concepts in environmental economy (Everard & Ravetz, 2009). An economic cost-benefit analysis project is in progress as of May 2010, led by the University of Bath. This is applying cost benefit analysis techniques to look at the economic case for two kinds of strategy: green infrastructure, and local economic development.

In the green infrastructure study, each case in each location is unique, but we can identify costs and benefits which are more direct:

- Direct costs of land tenure, reclamation and restoration, planting, maintenance:
- Direct benefits in ecosystems services, e.g. local produce, flood risk management, soil conservation etc.

There are also costs and benefits which are more or less indirect and/or 'shadow', which are more or less measurable:

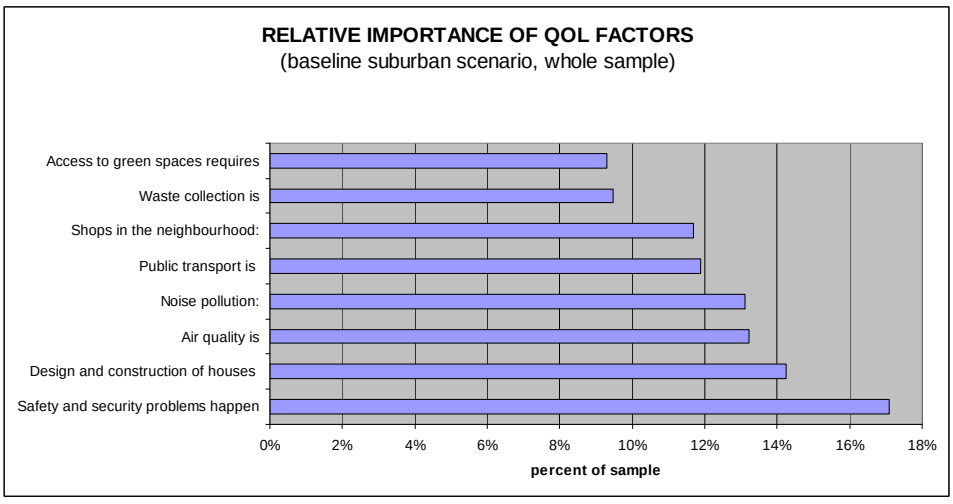
- Indirect costs, such as extensification of public services, and opportunity cost from displacement of high value landuses.
- Indirect / shadow benefits, such as property prices, public health, access to leisure, general amenity value
- Intrinsic benefits, such as bio-diversity, landscape quality and cultural heritage in its own right.

This gets very topical when more extended chains of value added are factored in, which is often the case for local economic / community development with multi-functional landuse.

For instance, the Incredible Edible scheme below, involves many enterprises in the public, private and social sectors: generating value which is both financial, social and environmental: and helping to recycle land which is otherwise marginal, at minimum public cost and maximum benefit. There are also many possible spin-off benefits, such as increasing climate change adaptation and resilience. If the economic analysis includes for all social and environmental benefits, this kind of project looks like a winner: so then the question is the factors of success or the barriers to action.

Social quality of life analysis

The Quality of Life Simulator is a new tool developed by the Edinburgh College of Art. It is based on 'conjoint' surveys of public perceptions, in different



parts of each case study region, including the Manchester city-region. The software can then analyse & present the results by type of social profile, location, age and other factors (figure 2).

- A 'baseline scenario' can be calculated from the majority of preferences under each category.
- Other alternative scenarios can be constructed, either referring to model outputs such as Moland, or by expert judgement. These can be targeted at specific locations, e.g. the peri-urban.
- The differences between one scenario and the next can be tested by examining 'tipping points' i.e. the point at which 50% of the population would try to move location, based on their reported preferences and priorities.

In the MCR there is initial data from a random public survey with a sample of 765. We are now using this to investigate the public preferences which are likely to drive people to move from one location to another. This focuses on the responses from the peri-urban location people, under each of the PLUREL scenarios. This will help to understand the social and cultural dynamics of out-migration, counter-urbanization, and social change in the peri-urban areas.

Governance issues

The governance system of the MCR goes through periodic changes. The Greater Manchester County of 10 municipalities survived from 1974-1986, and following that, 10 independent municipalities coordinated services such as waste and fire through a voluntary association. In the 1990s there was a UK-wide shift toward the regional level of governance: but this is now being reversed with a new appreciation of the city-region as a territorial unit. The definition of the city-region in the case of MCR is not simple, and there is no single boundary which suits political, economic, social and environmental factors.

Spatial planning has also gone through phases, from regulation to enterprise-based approaches. At present there is a system of criteria-based 'spatial strategy', although this may change under the new government.

One policy in the UK which is almost permanent up to now is the Green Belt, a strong control of development in the area surrounding major conurbations. This is seen as successful in its main objective of urban containment, although on the ground there is a cumulative effect of enlarged roads, shopping malls, business parks, and patterns of employment, education and leisure. At the same time the Green Belt is is questioned by NGOs, campaign groups, and by public agencies such as Natural England. There are proposals for a more multi-functional eco-system-based strategy, which also combines social and economic objectives.

Economic development policy has in the past been dominated by EU funding (most of MCR was an Objective 2 area). There is now much experimentation with hi-tech innovation on one hand, and local social / community enterprise on the other. Environmental policy has come up as a priority, and some of the most interesting initiatives are in low carbon, climate adaptation, and green infrastructure strategy.

Policy & strategy analysis

Three different types of strategy were selected for study:

a) Green Belt policy, and the regional / sub-regional spatial strategy for urbanization, housing, infrastructure and rural development, with a range of spatial planning policies
b) Local social and economic development in peri-urban areas, through a variety of local, national and EU schemes.
c) Green Infrastructure: a holistic approach to environmental management and rehabilitation in peri-urban areas, including community forestry, climate adaptation, and local food schemes.

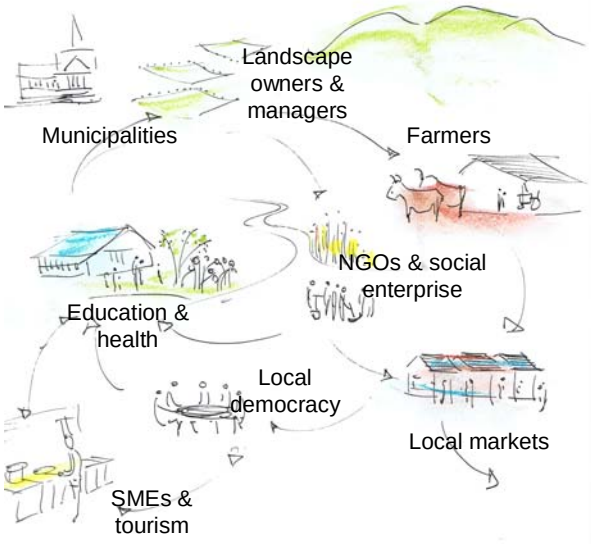
Although these are distinct themes, many projects and policies involve each in combination. A good example is the award-winning local food scheme in the Pennine area the Incredible Edible scheme (www.incredibleedibletodmorden.org.uk) (Figure 3). This can be enabled by spatial planning: funded by local economic development: depends for success on social capital and cohesion: produces food which contributes to public health and education: and also contributes to landscape protection, green infrastructure and climate

Policy integration – local example

from www.incredibleedibletodmorden.org.uk

FACTORS OF SUCCESS

- Public / private / social collaboration & co-investment
- Public sector enables private / social sector initiatives
- Multi-level governance
- Knowledge co-learning & networking
- Innovation & social enterprise
- Multiple objectives – economic / social / food / climate / green infrastructure



adaptation.

Such a joined up scheme does not fit easily in categories: and its cost-benefit analysis, or social preference analysis, is not simple. Its landuse impacts may not show up on high level maps and models, and the environmental benefits may be spread around the landscape and the community. However the 'opportunity space' that such schemes open up is huge.

So the policy integration approach, which is outlined below, focuses on such opportunities and the factors of success. To dig deeper we need to understand both 'outcomes' and 'processes' in the policies and strategies, which might aim to help such schemes, but often get in the way.

Urban development & landuse model

The MOLAND / Geonamica system is the world leader in landuse and development modelling at the urban-regional scale. There is work in progress in Manchester, as of May 2010, to translate the regional scenarios and policy options into technical settings and model inputs.

The results can then be compared with current policies such as the North West Spatial Strategy and Housing Strategy. They can also be linked into the various levels of economic and social analysis, as above. But underneath the landuse change scenarios, is a set of assumptions and questions: -

- In an old industrial area, such as the MCR, many landuse changes are about multi-functional use, or changes in the qualities of land.
- Many landuse changes are the result of external forces. For instance the future of the Common Agricultural Policy is likely to decide whether marginal uplands are kept in pasture, or converted to ecological sites, made available for economic development, or left untouched.
- Other policy agendas are still in formation. There is a question for instance, of how far the city-region should aim to feed itself: there could be large effects on peri-urban landuse, which at the moment is driven by the need for leisure and amenity.
- Some high growth type scenarios are easily visible, while other low growth or 'sustainability' type scenarios hardly show up on the maps.

This suggests some important issues for landuse modelling. It is not often a forecast, but more a tool for focusing 'what if' type of questions, in particular the difference between policy options. It needs to be multi-scalar, so that changing patterns of fields or settlements, can be linked to higher level changes, and vice versa. It needs to be multi-actor, in helping to ask the questions on who gains or loses from landuse change, or from the policy which aims to manage it.

Implications

Putting it together

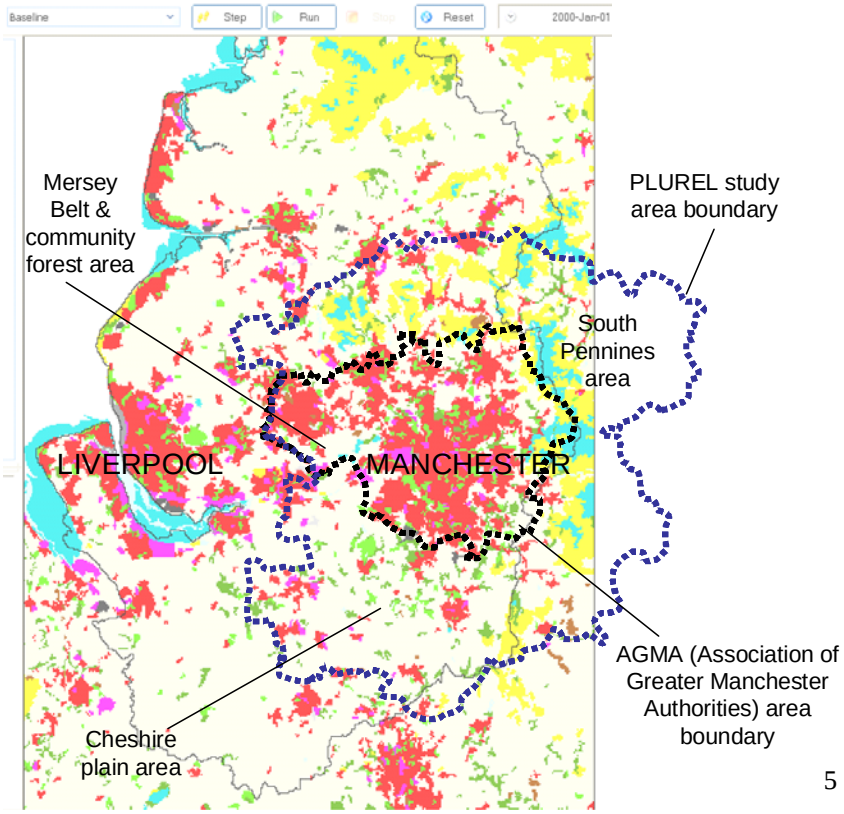
One of the challenges for the PLUREL project is that there are many angles and levels on the peri-urban agenda. No single analysis is likely to come up with clear results and recommendations. For example, the economic analysis can produce cost-benefit results based on certain assumptions, but the reality is much more complex and contingent on many social, political, or environment factors.

The Manchester case is being tested as a demonstration of ways to put these together:

- Scenario development: this helps to ask questions and explore challenges, using both technical inputs and socio-cultural inputs, to be taken up by other sectors:
- Economic analysis: this provides a first cut at the costs, benefits and distributional issues in selected policies.
- Social / behavioural analysis:

Manchester City-Region landuse modelling:

MOLAND base map with PLUREL study area boundary



the social survey and the QOL tool provide a first cut at social preferences:

- Spatial analysis: overlays of the various map layers can be used to highlight particular area types with compound problems, and in some cases opportunities.
- Policy analysis: selected strategies, e.g. green belt, show how a system of actors may be mobilized or coordinated, with varying degrees of success
- Governance analysis: the nature of local authorities, spatial planning regime etc, can also be questioned.
- Landuse modeling: this focuses on major landuse change, which helps to inform other parts of the debate, which are more about multi-functional landuse patterns, and other more qualitative factors.

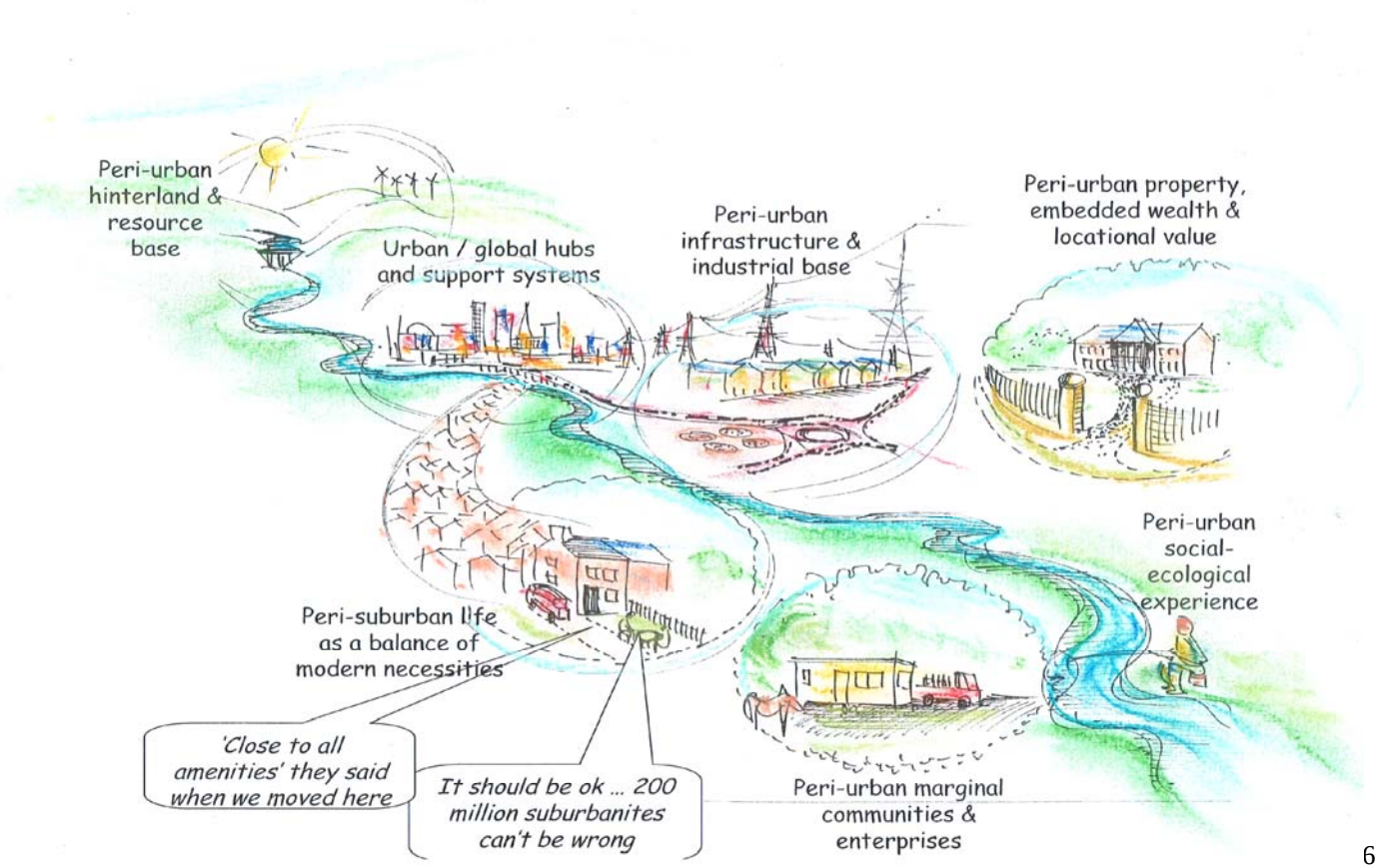
To follow this through we can explore some of the underlying dynamics with a critical perspective, which highlights ideological conflicts and dilemmas (Roberts et al 2009): such as -

- 'metropol-ization' as a globalizing dynamic: with expanding labour market & service catchment, enabled and catalysed by road transport, ICT and air travel.
- peri-urban as a 'creative' zone of innovation and experiments such as science parks, in tension with the 'chaotic' zones of urban residues, such as utility infrastructure.
- peri-urban class competition for territory & control: as seen with historic country estates, public housing on periphery, and gated commuter developments:
- peri-urban land use as zone of capital accumulation, in the circuit of urban property investment.
- peri-urban as a battle-ground between urban vs rural. This is shown in the UK Green Belt debate, where the needs of the city for containment over-ride the needs of rural communities to grow and diversify.
- peri-urban as re-invention of new socio-economic-cultural roles & agendas, in obsolescent areas: for example, urban fringe experiments: community forests: alternative communities: diversification and green tourism.
- peri-urban economies as capitalist 'creative destruction' of obsolescent activities. There are many instances of declining town & village centres, shops & services, centralized by cost-efficiency, and marginalized by incoming commuters.

This all helps to rethink the peri-urban as not only physical but a human geography. The territory is often segmented and fragmented, a kind of 'splintering city' (Graham and Marvin, 2002). The graphic below shows a range of peri-urban types which are disconnected in both physical and human space.

Relational thinking approach

We are now testing a method of putting this together, based on 'relational thinking' (Ravetz, 2010b). This looks at how systems (e.g. a city-region system) can change, evolve and go through structural transitions. The method can be applied to spatial systems, alongside economic, social, political, cultural or environmental systems. It helps to analyse the multiple kinds of interactions, and



chains of added value, which come up between different actors and stakeholders. The method also helps to link tangible factors (e.g. household growth / housing demand), with more intangible factors (e.g. cultural discourse / physical location). We use 4 levels of relational thinking, which are useful for exploring the peri-urban MCR:

1) **'Co-interaction'**: the peri-urban is formed by economic, social, technological interactions; the MCR peri-urban structure came from former industrial settlements, overlaid with increasing mobility and affluence.
2) **'Co-production':** certain economic or social value chains start to feedback and accumulate: e.g. the out-migration from the urban MCR produced more urban decline, and so more out-migration:
3) **'Co-evolution':** the peri-urban area reaches a 'tipping point', a rapid transition to higher levels of inter-dependency and specialization; e.g. the MCR evolves from a former industrial towards a more post-industrial structure:
4) **'Co-intelligence':** in reality the city-region is not a machine, but a society with many levels of thinking, learning and conscious intervention. This can be seen in the peri-urban MCR with its many approaches to integrated policy and governance.

'Sustainability' in the peri-urban

Settlements and landscapes change and 'emerge' continuously. In a modernizing globalizing world, such changes are increasingly multi-level and inter-connected. So how can we decide what is 'sustainable'?

At the urban scale, Jane Jacobs' vision of a liveable city looked at the pre-conditions which would enable street level activities, easy to walk pavements, public transport focus, dense mixed use neighbourhoods (Jacobs 1965). This can be analysed in terms of self-organization, complexity and emergence – i.e. that a good neighbourhood emerges as a complex self-organizing entity, from a large number of interactions with multiple social, economic and cultural functions.

In the peri-urban there are added factors – competing agendas between urban and rural, competing interests between local and external, etc. Relational thinking helps to identify what is really the goals of 'sustainable communities', and 'sustainable landscapes'.

- **'sustainable communities',** which self-organize and evolve multiple kinds of interactions in economic, social, cultural and political spheres. The transition and co-evolution is to move towards social cohesion, local enterprise, cultural heritage, using local resources, environmental protection and so on.
- **'sustainable landscapes',** which also self-organize, and evolve multiple kinds of interactions in economic, social, cultural and political spheres. The transition and co-evolution is to move towards ecological quality, sustainable resource use, social and cultural support systems and so on.

New concepts in peri-urban governance

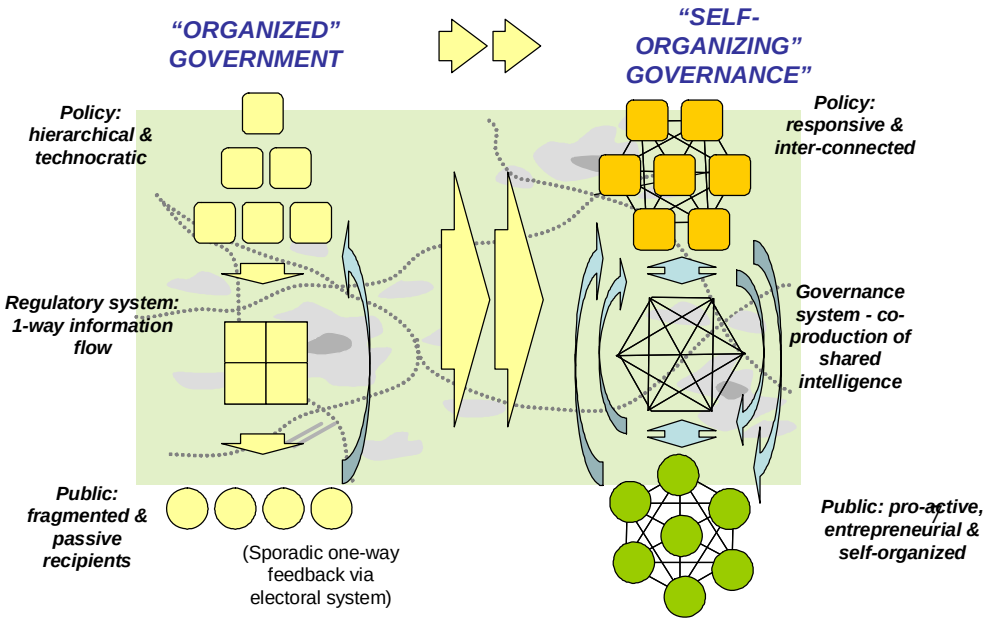
This points to new concepts in peri-urban governance (or new applications of concepts which are emerging elsewhere). Effective and integrated governance is likely to be multi-level, multi-agent and multi-functional: it is likely to be self-organizing and self-learning as far as possible, at the same time being responsible both to local opportunities and urban-regional needs.

The graphic below shows a structural transition, now in progress, from 'organized government' (hierarchical, one-way, linear thinking) – towards 'self-organizing governance' (responsive, entrepreneurial, ecological). This is an ideal concept which needs to be overlaid on to the realities of power, wealth and ideology. In the UK for instance there is new rhetoric on the 'Big Society', which has much in common with the co-evolution idea – but many signs are pointing in the opposite direction (Ravetz, 2010b).

Example - climate change agenda

The peri-urban is crucial to policy for mitigation of climate change,

Peri-urban governance: a co-evolution transition



and also to the adaptation to climate change – but as yet the issues have not reached the mainstream (PURPLE, 2010).

Strong mitigation policy (e.g. on transport) may change the viability of peri-urban development. Strong adaptation policy may change the agenda for peri-urban landscapes, in terms of water, green infrastructure, food or energy production. In areas of chaotic urban sprawl, climate impacts may be highest, while the capacity to respond is lowest. A planned adaptation to climate change is more feasible if combined with other policy objectives. But as yet there are few policies or governance structures which can respond to this agenda – not only a technical problem, but also social, economic, political and cultural challenges:

- Resilience – to flooding, heat waves, drought etc. Former top-down 'emergency' planning is shifting towards 'resilience' strategies with many stakeholders.
- "Adaptability" versus "adaptation" – with great uncertainty on likely climate effects and impacts. So the redesign of the peri-urban environment is not a simple change to new conditions, more about adaptability and resilience.
- Investment – as climate risks and impacts cross many boundaries, it is more difficult to allocate costs, benefits and investment. But most peri-urban areas have fragmented communities, local economies, and governance systems.

The graphic here shows a rethinking of climate adaptation strategy, as active relationships or partnerships, between many types of stakeholders. This kind of enhanced pattern needs to be built into new styles of governance.

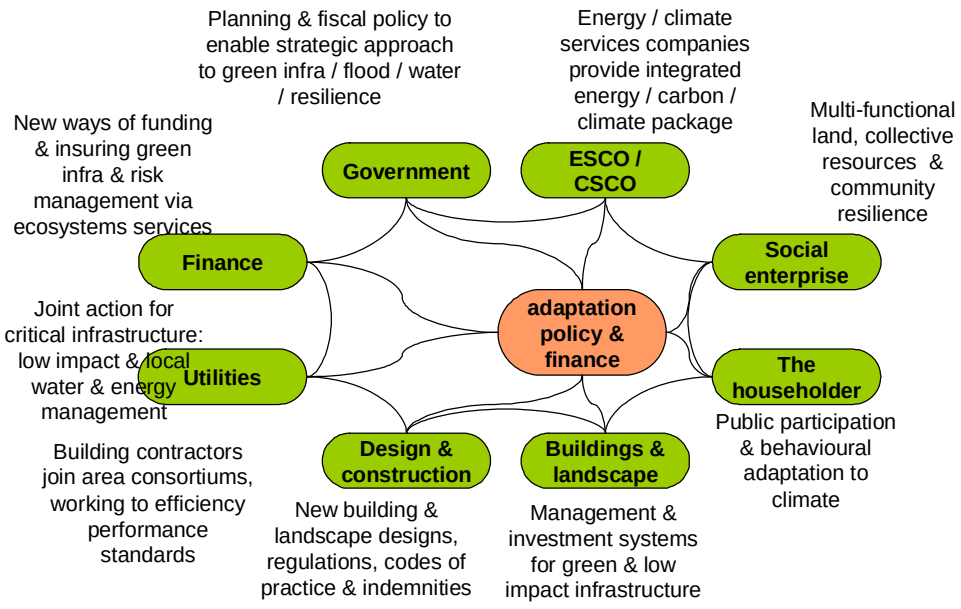
New pathways in peri-urban governance

So how can this be put all together for practical recommendations? There are all the challenges above of fragmentation, uncertainty, structural conflict, and chaotic change. So we need to learn from experience in the MCR and other regions, to set out '***pathways***'. These are like genetic codes in the policy dimension – strategic combinations of actions, actors, factors and sectors: which together have the capacity to evolve towards a more self-organizing and sustainable peri-urban (Ravetz 2010a). Such pathways include:

- ***Multi-level*** governance – look for policy chains which link local to urban to regional or national levels;
- ***Multi-actor*** governance – look for cycles of value & reciprocity between different sectors and organizations:
- ***Multi-functional*** governance – look for synergies and opportunities between different kinds of objectives and programmes:
- ***Co-relational*** governance – look for self-organizing 'value chains' which help to mobilize 'communities of interest' across all sectors at local / urban / regional scales.
- ***Co-intelligent*** governance – look for ways to enable all levels of governance to enhance collective learning, thinking, anticipation, foresight, active participation, innovation and cultural creativity.

These are not blueprint solutions, guaranteed to fix all the problems. Rather they are ways of thinking and learning which appear to be more likely to point forwards.

Relational thinking for climate adaptation



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