Urban ecological security – the new urban paradigm?

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Newly emerging strategies to provide the urban infrastructure to cope with ‘urban ecological security’ concerns such as resource constraints and climate change may selectively privilege some cities at the expense of others. The term ‘ecological security’ is commonly used in relation to attempts to safeguard sustainable flows of ecological resources and services. Increasing concerns over ‘urban ecological security’ are now giving rise to strategies to reconfigure cities and their infrastructures in ways that help to secure the resources necessary for their ecological and material well-being. But cities have differing capacities and capabilities to develop strategic responses to the opportunities and constraints of key urban ecological security concerns such as resource constraint and climate change, and consequently these newly emerging strategies may selectively privilege particular urban areas over others. This article presents three propositions that outline the challenges posed by the growing concern for urban ecological security and reviews the emerging responses that may increasingly form a new dominant ‘logic’ of infrastructure provision.

**Proposition 1: We are seeing the emergence of concern for urban ecological security.** A series of ‘new’ socio-economic and political problems are pushing issues of ecological security up the agenda of national governments. For example, climate change poses problems such as constraints on water resources, uncertainties over energy security, and the geographic spread and migration of diseases. The critical issue for national governments is the ability to ensure continuing access to the resources needed to safeguard economic and social well-being. Concerns over the security of ecological resources have become intertwined with national states’ priorities and responsibilities for social welfare and economic competitiveness. Yet such concerns are also increasingly becoming issues at an urban scale, for three inter-related reasons: First, increasing economic globalisation and the changing relationships between national state, sub-national territories and economic activity have led to ‘new state spaces’ of governance opening up, based on variable relationships between national governments and their territories within multi-level systems of governance. Second, the development of these new state spaces has not received anywhere near the same attention in relation to environmental concerns as it has with regard to economic activity. To push this further, what would an ‘ecological state’ with ecological protection as one of its foremost regulatory functions look like? This is a particularly interesting issue given that national states increasingly have varying and multiple relationships with their territories. Third, there is the issue of how the economic and ecological well-being of cities can be secured in a context of rapidly growing population, high demand for resources and increasing resource constraints (on water, energy, etc.), and intense competition for economic activity and jobs.

**Proposition 2: Cities are developing a ‘strategic orientation’ towards urban ecological security.** Increasingly, cities are developing more strategic approaches to meeting future resource requirements. Central to such approaches are the use of indigenous resources and the desire to overcome economic and social constraints that may prove a disadvantage in competition between cities. Certainly London’s poor environmental performance in waste recycling, water conservation and decentralised energy production is seen by the Mayor of London as placing the city at a competitive disadvantage compared with other world cities. We need to see this new ‘strategic orientation’ in two senses: at one level it is another performance indicator in the inevitable competition between places, but at another it is a more profound indicator of the ability of cities to (at least in aspiration) provide the conditions that can ‘guarantee’ their continuing social, economic and material well-being. This reflects a shift from the post-9/11 agenda of critical infrastructure protection from terrorism or the consequences of environmental damage, to a focus on safeguarding a city’s material resources against a background of resource constraint and competition. A new dimension of cities’ competitive positioning is their ability to internalise, bound and control both the resources with which they are endowed and subsequent supply, consumption and production: cities are attempting to ‘enclose’ resources. The knowledge, expertise, social organisation and socio-technologies required to maintain cities’ economic and social roles are thus likely to be defining features of 21st century urbanism. But what actual strategies will places adopt?
Proposition 3: New styles of urban infrastructure are emerging. The strategic response to resource constraint is leading to the development of new styles of infrastructure development that privilege particular places – or rather particular spatial and socio-technical configurations of infrastructure. The world’s largest cities are beginning to reshape themselves and their relationships with resources and other spaces in three ways. First, ensuring the strategic protection of cities from the impacts and effects of climate change and associated resource constraints: Central to such strategies are investments in understanding the city-specific and long-term effects of climate change, especially in relation to flood risk and temperature rise, and the development of strategic flood protection systems, green infrastructure, and retrofitting to deal with increased temperatures. The Greater London Authority’s assertion that central government should take responsibility for the potential investment required to protect London post-2030 from climate change induced flooding typifies such responses. Second, building autarky into the supply of water and energy, the mobility of people and goods, and the disposal of wastes: Traditionally cities have prospered by seeking out resources and waste sinks from ever more distant locations. Yet this approach is now being reversed, as cities seek to become more ‘autarkic’ or self-sufficient – by reducing their reliance on international, national and regional infrastructures and re-internalising their own resources and recirculating wastes. Key examples are New York’s strategy of energy independence, the recent doubling of decentralised energy targets in London, and Melbourne’s development of renewably powered desalination. Alongside such strategies, cities are attempting to reduce reliance on ‘external resources’ through water and energy conservation and waste minimisation schemes, and (in answer to threats posed by, among other things, climate change) by developing pricing mechanisms for car-based mobility. Third, collectively building agglomerations of new urban mobility systems: At the same time as focusing on indigenous ‘enclosed’ resources, cities are seeking to guarantee intra-city and inter-world-city mobility through the development and use of new mobility technologies, such as pricing, transport informatics and new fuel systems based on hydrogen, bio-fuels or complex hybrids. Cities like New York, Paris and Berlin are working collaboratively to develop new markets for testing and rolling out new means of mobility in world cities. Cities are developing responses to ecological resource concerns that appear to be prioritising disengagement from national and regional infrastructure and the re-prioritising of city-based ‘enclosed’ resources, while at the same time seeking to ensure continued intra- and inter-urban connections through new agglomerations of urban mobility technologies. Such strategies are wrapped within a wider strategic protection concerns and seek to guarantee the long-term well-being of the city.

Implications and the emerging research and policy agendas

The emergence of concern for urban ecological security and the challenges posed by the propositions presented here constitute a research and policy agenda that needs to be critically tested. We need to assess the implications of this new logic of urban ecological security and its likely impact on shaping the socio-technical infrastructure of cities faced with resource constraints and climate change. But first we need to stand back and ask some difficult questions about how we might begin to test this new logic, understand its constraints and limits, and develop other, perhaps more progressive approaches. Five key questions emerge: First, are we now talking about new forms of autarky based on withdrawal from and the bypassing of national and regional infrastructure, leading to the development of new archipelagos of connected world cities? Second, what will this mean for the places thus bypassed – the new peripheries constructed by enclosure, and the ordinary cities of the developed and major cities of the developing global south? Third, who will benefits from these configurations, who will be overlooked or disadvantaged, and what material consequences will they produce? Fourth, who is now to provide economic and social linkages between world cities and the new peripheries – national states or corporate capital? Fifth, what are the alternatives; and where do we look for other forms of innovation driven by approaches more concerned with fair shares and equality of access? These, we argue, are the critical questions of the urban agenda of the 21st century.

3 www.surf.salford.ac.uk/CityRegional/Critical_InfrastructureII.htm
4 See www.london.gov.uk/londonissues/environment.jsp