

Managing Urban Growth

Commission 2
Report

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metropolis ●



Commission 2

Managing Urban Growth

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INTRODUCTION

Metropolis established Commission 2: Managing Urban Growth to explore the issues of rapid urbanisation and the liveability of cities: what makes cities liveable to their inhabitants and attractive to investors; and what governments are doing (or should do) to protect, promote and enhance the liveability of cities.

The Commission examined the experiences of cities from both developed and developing countries in their endeavours to address the priority areas of managing urban development and service provision. Key areas of inquiry included the challenges and complexities of providing essential infrastructure; inequities and social inclusion; competitiveness of cities and positioning the global economy; environmental sustainability; and governance and the role of government.

In exploring those issues, the Commission relied on trends and growth forecasts, collected case studies, conducted surveys and undertook supplementary research about the experiences of some of the world's major cities.

The Commission met twice: in New Delhi during 3-5 December 2009, where it focused on governance arrangements and innovative solutions for sustainable growth; and in Barcelona on 6 October 2010 with its focus on urban management and inclusiveness.

The work of the Commission was undertaken by a project team consisting of representatives from various Victorian Government departments, research and academic organisations, and supported by international urban management experts. The report is based on information obtained via case studies, commission meetings and supplementary key research. City case studies and presentations are available on the Metropolis website www.metropolis.org.

01.

URBANISATION AND GOVERNANCE

This chapter outlines the role and function of cities and the range of governance approaches through which urban issues are managed. It focuses on the importance of leadership, engagement and participation and illustrates how these traits are being promoted at a global level. The role and critical need for reliable information systems is also explored.

1.1. Defining urbanisation and urban growth

Urbanisation is the physical growth and change in the extension or intensiveness urban areas as a result of local and global change, including the movement of people from rural to urban areas (refer to definition in 1.1.1). Rates of urbanisation are different across the globe even if there is a common trend towards more intensive urbanisation.

North America, Latin America and the Caribbean, Europe and Oceania are highly urbanised, with urban areas accommodating from 70 per cent of population (Oceania) to 82 per cent of population (Northern America). Levels of urbanisation are expected to continue rising, even if slowly, so that by 2050 all of them, except Oceania, are expected to be more than 84 per cent urban.

Africa and Asia remain mostly rural, with just over 40 per cent and 42 per cent of their respective populations living in urban settlements in 2010. Even by 2050 they are expected to be significantly less urbanised than the other major areas, with urban populations reaching 62 per cent in Africa and 65 per cent in Asia (United Nations 2010).

Today, five in every ten people live in cities. This is expected to rise to almost seven in every ten people by 2050 (United Nations 2010). More than 180,000 people migrate to cities every day (Metropolis International Institute, 2009).

1.1.1. Defining a city

The urban-rural distinction was first proposed in the early 1950s, and it was critiqued at the time for being overly simplistic. Nevertheless, it quickly entered into popular usage. It has persisted as the dominant classification system, and is used by virtually all countries. Beyond that there are a number of significant problems with the widespread usage of the various settlement categories. Firstly, there is no uniform approach to defining rural and urban settlements. The United Nations has taken the position that, 'because of national differences in the characteristics which distinguish urban from rural areas, the distinction between urban and rural population is not yet amenable to a single definition that would be applicable in all countries'.

Thus, it is said to be best for countries to decide for themselves whether particular settlements are urban or rural. The OECD has adopted the same approach. However, while recognising that it is a difficult task to create categories which are applicable to a diverse range of landscapes, contexts and regional settings, the failure to define the terms being used simply means that there is an overabundance of opportunities for confusion and inconsistent use.

Secondly, the usual urban-rural distinction fails to account for the changing nature of human settlement across the globe. There are a number of significant changes, including

the changing forms of urbanisation such as urban sprawl, and the decentralisation of non-residential functions, for example, retail parks close to intercity highway junctions; massively increased levels of commuting between urban and rural areas; the development of communication and transport technologies; and the emergence of polycentric urban configurations. While the urban-rural dichotomy was always over-simplistic, it is arguably more misleading today than it was half a century ago. Piecing together material from different sources, however, it is possible to get a basic framework for a general set of definitions.

A city or urban area can be defined as a human settlement characterised by a significant infrastructure base – economically, politically and culturally – a high density of population, whether it be as citizens, working people, or transitory visitors, and what is perceived to be a large proportion of constructed surface area relative to the rest of the region. Within that area may also be smaller zones of non-built-up, open spaces used for recreation or industrial sites used for storage, waste disposal or other purposes. Metropolis focuses on cities, with more than a million people in a singular urban area.

Cities are complex places. They are engines of economic and cultural growth (Metropolis International Institute, 2009). This can be good or bad. On the one hand, cities grow as people move seeking a different quality of life including opportunities to earn more money, learn, access health care and services, and create relationships. They can be focal points for international competition and growth of future economies, and they are carriers of past, present and future cultures. They are also recognised by the global community as foci for addressing major challenges in terms of economic and social development, and environmental sustainability (Villesendevenir 2010; Metropolis International Institute, 2009). On the other hand, cities can be places that people move to under conditions of desperation when life in hinterland or regional areas becomes less sustainable. And this can result in the development of urban slums if not properly managed (see Section 1.2 below).

While noting that urbanisation often evokes images of overcrowded cities, concentrations of poverty and environmental degradation, the World Bank (2009) cautions against seeing urban growth as negative. Instead, it is suggested that the debate should be about the efficiency and inclusiveness of the processes to transform rural economies to urban ones, and how policy can best mitigate the issues that arise at different stages of urbanisation.

Cities are home and places of employment for some, and a destination for others

Cities play many roles. While Makati City in the Philippines covers a small area of 27.36 kilometres, the city's population of 510,383 balloons to almost four-million during the daytime due to the influx of transient office-workers, business owners and local and foreign tourists (Makati City Case Study, 2010).

Cities as mega-locations of human habitation

Recent research has shown that the world's 40 largest mega-regions cover only a tiny fraction of the Earth's habitable surface and are home to fewer than 18 per cent of the world's population, yet they account for 66 per cent of global economic activity and about 85 per cent of technological and scientific innovation (UN-Habitat, 2010).

1.1.2. City classifications

Just over half of urban dwellers (52 per cent) live in urban centres with fewer than half a million inhabitants. These urban centres are projected to absorb 45 per cent of the projected increase in world urban population between 2010 and 2015. The other half (48 per cent) live in 958 cities with more than half a million inhabitants which are projected to absorb the remaining 55 per cent of the projected increase in urban population (United Nations, 2010).

There are 21 mega-cities (with at least ten million inhabitants) which account for just 9 per cent of the world's urban population. Asia has the largest number of mega-cities (eleven in 2010), followed by Latin America (four), and then Africa, Europe and Northern America with two each. There are expected to be 29 mega-cities in 2025, accounting for 10 per cent of the urban population. Projected additions include Shenzhen, Chongqing, Guangzhou, Jakarta and Lahore in Asia, Bogota and Lima in Latin America, and Kinshasa in Africa.

There are 33 'mega-cities in waiting' with populations from five million to ten million with these accommodating 7 per cent of the world's urban population. The number is expected to increase to 46 in 2025, but to maintain the same share of urban population as in 2010. There were 288 cities with more than a million inhabitants but fewer than five million in 2010, accommodating 22 per cent of urban population. The number of these cities is expected to increase to 506 in 2025, with their share of urban population remaining largely unchanged until 2025.

Smaller cities, with populations ranging from 500,000 to one-million inhabitants, are even more numerous (516 in 2010, rising to 667 in 2025), but they account for just 10 per cent of the world's urban population and that share is not expected to change much over the next 15 years (United Nations, 2010).

Cities as stretching along urban corridors

Urban corridors that link a number of mega-cities and encompass their hinterlands are emerging. For example:

- In South-East Asia, the 1,500 kilometre belt that stretches from Beijing to Tokyo via Pyongyang and Seoul, connecting at least 77 cities with populations of 200,000 or more. This urban corridor accommodates more than 97 million people and links four megalopolises in four countries, effectively merging them into one.
- In Africa, the greater Ibadan-Lagos-Accra urban corridor that is a key engine of West Africa's regional economy and stretches over approximately 600 kilometres, linking Nigeria, Benin, Togo and Ghana (UN-Habitat, 2010).

Cities as regions

The past 20 to 30 years has seen the emergence of cities that extend beyond their administrative boundaries and encompass rural hinterlands and semi-urban areas to create 'city-regions'. Examples include:

- The extended Bangkok Region is expected to expand another 200 kilometres from its current centre by 2020, growing far beyond its current population of over 17 million.
- The metropolitan São Paulo already covers an area of over 8,000 square kilometres, accommodating 16.4 million people.
- Cape Town reaches up to 100 kilometres when taking account of the distances which commuters travel to and from work every day.

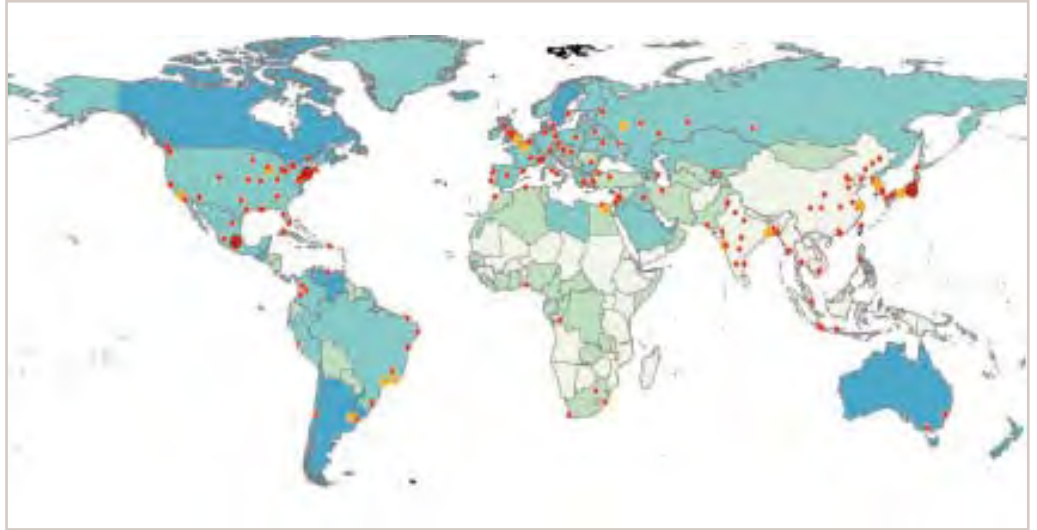
Percentage Urban

- 0-25%
- 25-50%
- 50-75%
- 75-100%

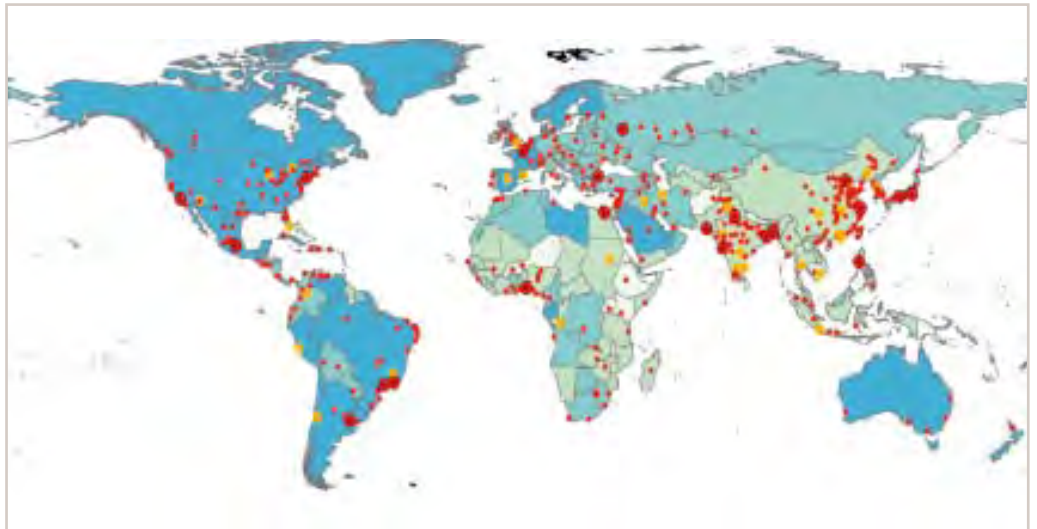
City Population

- 1-5 million
- 5-10 million
- 10 million or more

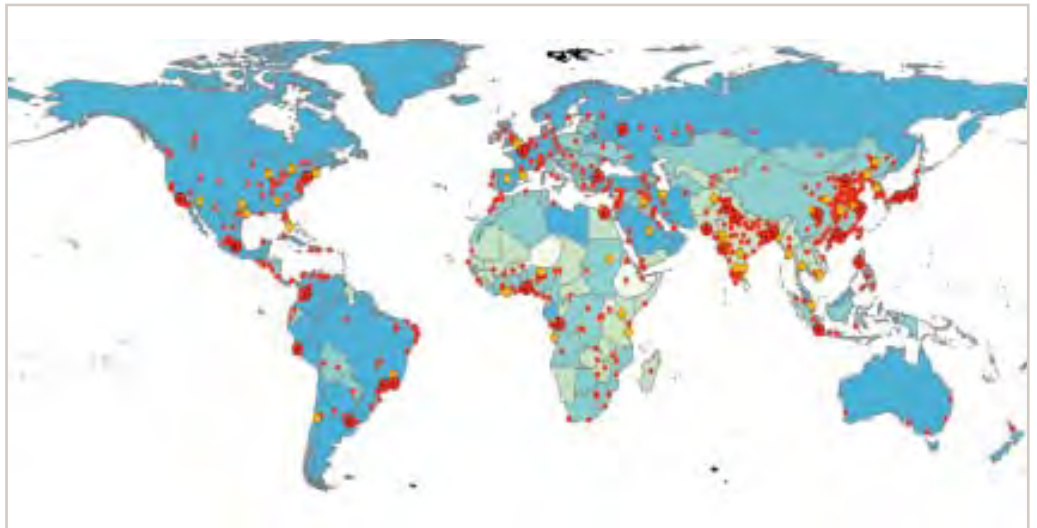
URBAN AGGLOMERATIONS IN 1975
(proportion urban of the world: 37.2 per cent)



URBAN AGGLOMERATIONS IN 2009
(proportion urban of the world: 50.1 per cent)



URBAN AGGLOMERATIONS IN 2025
(proportion urban of the world: 56.6 per cent)



Source: United Nations, Department of Economic and Social Affairs, Population Division: World Urbanisation Prospects, the 2009 Revision, New York 2010

1.1.3. Typologies of urban growth and change

There are many kinds of cities, but those that are having most difficulty in managing various stages of growth and change comprise three broad types:

1. Cities coping with informal hyper-growth include cities in the Middle East, sub-Saharan Africa, the Indian subcontinent, and some poorer cities of Latin America and the Caribbean. These cities are generally characterised as having rapid population growth, an economy that depends on the informal sector, widespread poverty, large informal housing areas, environmental and health problems and significant governance challenges. In many of these cities the economy struggles to keep pace with population growth, there are high birth rates but poorly educated women, and there is a surplus of unskilled labour.

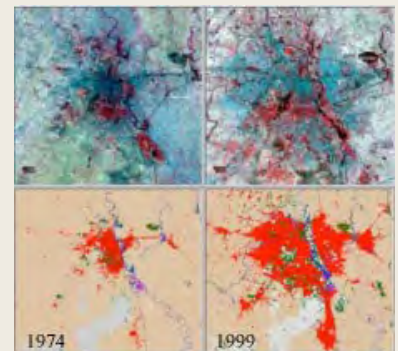
2. Cities managing dynamic growth are characteristically cities of the middle-income rapidly-developing world, represented by much of East Asia (including China), some of South Asia, much of Latin America and the Caribbean and the Middle East. Here, population growth is slowing with an ageing population and challenges in providing adequate housing and efficient transportation systems. Economic growth continues rapidly, but challenged by other countries. Prosperity can bring environmental problems.

3. Cities seeking to remain competitive tend to be those more “mature” cities which are seeking to retain their economic competitiveness on the world stage despite a rapidly rising elderly population and a shrinking workforce. This group includes cities in North America, Europe, Australia and Japan in which the number of small households is growing rapidly, economies are slowing and population growth is due more to immigration than births (Hall, 2005).

At the same time that rapid population growth is occurring in the first category, competition for talent is occurring between cities in the second and third categories.

The physical growth of urban regions

While urban sprawl (the spread of urban areas into rural areas that lie on the outer edges of cities that increases the distance between a city centre and its outer edge) was typically considered largely a US phenomenon, it is occurring in cities worldwide, even in city regions experiencing population decline. For example, Frankfurt's rate of land consumption grew rapidly over the past 30 years while population declined.



The physical growth of urban areas undergoing informal hyper-growth is reflected in these aerial images which show the growth of the Delhi urban area from 1974 to 1999 (Metropolis Delhi case study 2010).

1.2. Responses to the challenges of urbanisation

1.2.1. Urban policy

Urban policy is concerned with managing urban change. It seeks to influence the distribution and operation of investment and consumption processes in the built environment. Urban policy is dynamic – its formulation and implementation form a continuing process, not an event. There is significant difference in the approach to urban policy between countries, reflecting the institutional environment in which policies are set and the procedures and instruments selected for implementation (Geyer 2009).

1.2.1.1. National-level urban policy

Some countries use explicit national urban, settlement or land-use policies to manage urban growth and change at a national scale – that is, between urban regions – and to prioritise interventions. These national policies may be used to provide context for regional, metropolitan or local-level urban growth management strategies and policies. In some cases they override local strategies and policies or operate in the absence of local policies (Geyer 2009). National urban policies take a range of different forms and are supported by a wide range of policy responses and instruments, including the following:

- National policy that seeks to restrain the growth of city-regions and promote growth in peripheral regions. Such policies have been applied to cities such as London, Paris and Tokyo with varying levels of success. And since the mid-1970s, declines in economic and population growth in many developed cities have brought about questioning of need for policies which restrain the growth of cities (Geyer 2009)
- National policy which seeks to reshape settlement patterns and systems. This includes national policy initiatives to direct investment into declining industrial cities through tax concessions, employment incentives, infrastructure improvements, selective public sector procurement policies and creation of special economic zones (for example, enterprise zones, urban development corporations and simplified planning zones).
- National policies seeking to limit unplanned rural-urban conversion and loss of agriculture including irregular practices associated with the decollectivisation of agriculture (e.g. Vietnam)
- National policies for financial support for city development and infrastructure being conditional on having effective metropolitan planning systems and strategies in place (e.g. India & refer breakout box on the Council of Australian Governments' Capital City Strategic Planning Systems)
- National efforts to manage urban growth in response to the need to mitigate carbon emissions and adapt to the consequences of climate change (Geyer 2009).

Council of Australian Governments' capital city strategic planning systems

The Council of Australian Governments (COAG) is the peak intergovernmental forum in Australia, comprising the Prime Minister, State Premiers, Territory Chief Ministers and the President of the Australian Local Government Association (ALGA). On 7 December 2009, COAG agreed to adopt a national objective and criteria for future strategic planning of capital cities. Under this agreement, States and Territories need to have capital city strategic-planning systems in place by 2012 that meet criteria for transport, housing, urban development and sustainability. The Commonwealth Government has indicated that it will link future infrastructure funding to States and Territories to meeting these criteria. The Commonwealth also has agreed to contribute to the reforms through its own property, assets, service delivery and approval processes (Albanese MP, 2009).

Policy may also operate at the supra-nation level. For example, work by the Commission of the European Communities (CEC) has highlighted challenges facing Europe's cities and emphasised the need for strategic, consistent and co-ordinated responses to these challenges at the European Union level. This has included a strong emphasis on the need to ensure that actions taken at the European Union, member-state, regional and local levels are vertically and horizontally integrated. These developments have produced what might be termed a European Union 'urban agenda' (Atkinson, 2007).

There also exists a range of special cases of national supervision of urban growth. These include the following kinds of cities:

- City states - cities that are coextensive with their state boundaries (e.g. cities that have the same boundaries as their state – refer to Singapore example)
- Created capital cities- often mediated by provincial territories with less than full provincial rights (refer to Brasilia example)
- Primate cities – cities that national governments cannot ignore, and involve hands-on supra-regional involvement (refer to Cairo example)

National supervision of urban growth: Singapore

Singapore is an island city-state in South-East Asia. With a population of approximately five million people, it occupies an area of approximately 700 square kilometres and is the third most densely populated country in the world (Singapore Government, 2010). The entire island functions as a single metropolitan area.

The city-centre in the south of the island is surrounded by satellite towns, parks, reservoirs and industrial estates, which are connected to the centre and each other by a dense network of roads, expressways and metro railway lines. Singapore has a highly centralised, unitary government with a unicameral legislature. While there are town councils and mayors in Singapore, these are essentially property managers in charge of the maintenance of public housing within their constituency boundaries. They do not represent local authorities with any legislative or executive autonomy from the national government.

The Urban Redevelopment Authority (URA) is Singapore's national land-use planning authority. The URA prepares long term strategic plans, as well as detailed local area plans, for physical development, and then co-ordinates delivery of these plans (Singapore Government, 2010).



National supervision of urban growth: Brasilia

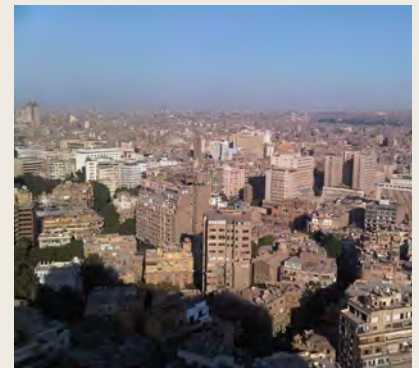
Brasilia is the capital of Brazil and is located in a central area of the country. The construction of Brasilia, Brazil's new and completely 'planned' capital in the underpopulated interior began in 1957 under the sponsorship of Juscelino Kubitschek's government. In 1960, it formally became Brazil's capital. Brasília has a sui generis status in Brazil, given that it is not a municipality. Although there is no legal definition for Brasília, the term is almost always used synonymously with the Brazilian Federal District, and constitutes an indivisible Federative Unit, analogous to a state.



Brasilia has received both praise and criticism for its attempt at creating a city by design rather than through 'organic' growth, as well as for its utopian conception, including recognition by UNESCO in 2010 as 'a landmark in the history of town planning'.

National supervision of urban growth: Cairo

With a population of 6.8 million spread over 453 square kilometres and an additional 10 million inhabitants just outside the city, Cairo resides at the centre of the largest metropolitan area in Africa and the eleventh-largest urban area in the world (Central Agency for Public Mobilisation and Statistics, 2010). Cairo is a "primate city" and has maintained urban dominance over the past few decades, with Egypt's second largest city of Alexandria only accommodating 4.1 million people (Sims, 2003).



National policies can have a direct or indirect influence on cities. National policies can influence urban development even when they do not have an explicit urban intent or focus. Some of these policies represent an attempt to shape the drivers of urban growth rather than just respond to them. These policies include:

- Population policies – such as China's one-child policy
- Migration policies – such as Australia's points system favouring non-metropolitan destinations for international migrants
- Fiscal policies - in the post-war period in the United States of America the availability of federal mortgage insurance and tax relief for new single-family dwellings provided a significant stimulus to low-density suburban development
- Industrial policies – states often make decisions to support particular industries or expand public expenditure on defence which result in differential spatial impacts since the activities being supported or funded are not evenly distributed among cities and regions
- Agricultural policies – such as structural policies which promote the capitalisation of agriculture. These affect the size of the agricultural labour force with flow-on effects for rural-urban migration
- Immigration policies - such policies tend to have impacts that are concentrated within cities (Geyer 2009)

1.2.1.2. Metropolitan-level urban policy

While not all countries have national urban strategies, many have attempted to influence the form of urban development at the metropolitan level. Metropolitan planning is necessary because many urban phenomena extend beyond municipal boundaries. For example, Barcelona has identified a number of factors (including external migration of people, development of holiday homes, movement of industrial activity to the outskirts, internal migration and changes in metropolitan mobility) that extend beyond municipal boundaries.

Barcelona: aligning plans and approaches to levels of influence

Barcelona has identified factors that influence city life at three levels. They have developed plans or approaches to correspond to each of these levels:

Factors

Territorial-level factors that directly affect system efficacy in terms of the city's international, national, and regional relations.

Metropolitan-level factors that affect multiple municipalities.

Local level factors which affect only specific municipalities.

Plans

The partial metropolitan territorial plan of Barcelona, including the high-speed road infrastructure and rail network, and recommendations for urban settlements.

Barcelona metropolitan urban development master-plan.

Municipal urban-development organisation approach.

(Metropolis Barcelona case study 2010; Roig 2009)

Good metropolitan planning can have a range of benefits including the following:

- Identifying challenges facing a metropolitan region and enabling those challenges to be responded more directly and effectively
- Providing more coherence and better communication between different levels of government
- Providing tools for change-management that help in agreeing on priorities and making choices to improve institutional responses and decision-making
- Providing flexible instruments that allow local government to rapidly respond to crises (e.g. natural disasters) because it already has a framework in place
- Providing for dialogue between stakeholders and helping develop consensus-based solutions
- Helping to prioritise the budgets of governments and orient short and long-term private investment
- Helping to provide a spatial basis for public programs and initiatives
- Making it easier to balance fewer resources with the demand from more people (UCLG; Villesendevenir, 2010; Gleeson, and Darbas, 2004; Sipe and Gleeson, 2004)

Forms and practices of metropolitan planning vary widely, but they include multi-sector city development strategies such as those that are broader than traditional urban master-plans through such institutions as the Global Alliance or World Bank. In these cases, city-shaping, land-use planning integrated with transport, and zoning remain important if such strategies are to be effectively implemented and provide the certainty that communities and investors require. There are also metropolitan strategies or master plans which seek to manage urban growth to create a preferred urban form. This has included a shift from focus on optimal city-size to efficient city-functioning which considers functional characteristics and spatial organisation. Such strategies have included a focus on the following:

- Providing for integrated land-use and transport planning, including using transport investments to restructure cities: for example, Delhi's Master Plan (National Capital Territory of Delhi, 2010, or see the breakout box immediately below on Melbourne's approach to integrated land-use and transport planning)
- Channelling development in order to stem the physical expansion of urban areas through the use of Urban Growth Boundaries (refer for example to Melbourne, Australia), noting that the initial establishment and any movement of such boundaries are often the subject of significant community discussion and interest.
- Avoiding excessive loss of valuable non-urban and agricultural land
- Providing for green areas around the city, including green-belts or green wedges.
- Ensuring more efficient use of existing infrastructure
- Poly-centric city development and the development of networks of activity centres as the focus for housing and economic development outside the central city area.
- Reducing congestion in the urban core through investment in rapid transit systems (refer for example to Quito and Curitiba)
- Steering employment and investment into inner urban areas or to new suburban centres using controls and incentives
- Urban renewal and densification, or in some cases de-densification (refer for example to Cairo)
- Innovative financing for delivery (refer for example to Hyderabad)

Planning horizons for metropolitan strategic planning varies. Some cities have set planning horizons at particular time-points. For example, Barcelona has set the planning horizon at 2020. Other cities have identified a planning horizon based on reaching a particular population level. For example, for metropolitan Melbourne, the Victorian State Government is planning for a population of five-million people.

Despite the different approaches there is a common acceptance that planning cannot be left to chance (UCLG). Good planning requires an understanding of the temporal frame of policy. Good urban management involves at least two temporal scales: the immediate and the strategic (which can include both a medium-term and a longer-term focus).

- The immediate scale refers to specific decisions and actions that need to be undertaken to respond to direct demands and opportunities. To make effective decisions and actions responding to immediate demands and opportunities requires flexible management systems that can mobilise the required resources, including legislative, regulatory, financial, fiscal, advocacy and governance, in a timely and co-ordinated manner.
- The strategic scale refers to actions that focus on the longer term and will require strong leadership and commitment to realise. Effective longer term actions rely on effective longer term planning strategies and policies (Barcelona Metropolis Case Study). It should be noted that effective longer term actions may rely on decisions and initiatives being made in the short term.

Melbourne: integrated land-use and transport planning

Metropolitan Melbourne's population is projected to grow from 3.7 million in 2006 to 5.5 million in 2036, an increase of 1.8 million. This growth presents new challenges but also opportunities to renew Melbourne while maintaining the character of existing neighbourhoods through careful management and proactive planning.

The State of Victoria has a long history of urban and transport planning that has helped to shape Melbourne's growth. The Government continues to place a strong emphasis on integrated land-use and transport planning and in December 2008 released Melbourne 2030: A Planning Update—Melbourne @ 5 million and the Victorian Transport Plan in December 2008.

Melbourne @ 5 million provides the planning policy framework to guide future growth and development across metropolitan Melbourne. The Victorian Transport Plan builds on this framework and uses the major investment in transport to influence the decisions made by individuals, business and government, about how and where they invest, work, live and move around.



Melbourne's settlement pattern, with a strong central city and a widespread network of activity centres and suburban industrial areas, has served the community relatively well until now. It will not, however, operate as effectively for a population of five million or more people. Accordingly, Melbourne @ 5 million and the Victorian Transport Plan outline a 'multi-centre' city-structure for metropolitan Melbourne where people can enjoy the benefits of living closer to work, reducing congestion on transport networks. Six CBD-like centres called Central Activities Districts (CADs) will be the focus of a substantial proportion of future employment growth and housing. They will be supported by employment corridors and improved transport links and will continue to play an important role in the existing network of activity centres (Victorian Government, 2009).

These initiatives will be supported by the Victorian Government's Transport Integration Act, which came into effect on 1 July 2010, and is focused on:

- Unifying all elements of the transport portfolio to ensure that transport agencies work together towards the common goal of an integrated transport system
- Providing a framework—a vision, objectives and principles—for integrated and sustainable transport policy and operations
- Recognising that a twenty-first-century transport system should be conceived and planned as a single system performing multiple tasks rather than separate transport modes
- Integrating land-use, transport planning and decision-making by extending the framework to land-use agencies whose decisions can significantly impact on transport (interface bodies)
- Re-constituting transport agencies and align their charters to make them consistent with the framework (<http://www.transport.vic.gov.au/DOI>)



Barcelona: urban renewal accommodating rapid urban growth

Barcelona is confronting strong urban-growth forecasts and more rapid consumption of land for development than anticipated in the Barcelona General Metropolitan Plan, as well as the majority of the municipalities in the metropolitan area. While this might result in a two-sided 'dilemma of choosing between continuing with the model

of encroaching on more rural or agricultural land... or saving the agricultural and forest land that remains', Barcelona has identified the need for a third way which seeks to identify land which can be developed without further damaging ecological systems. This includes a strong focus on renewal of existing urban areas and today urban renewal accounts for half of the potential building land within the Barcelona metropolitan area (Metropolis Barcelona case study, 2010).

Makati 21: balanced urban growth

Makati21 is the Development Agenda for Makati City in the Philippines. It has a vision for a city that provides for balanced urban growth which ensures economic, social and physical well-being, will with a key focus on jobs, affordable shelter including infrastructure and facilities, and pride of place (Makati City, 2010, p.3) Makati faces significant challenges in the form of air pollution and water sustainability. Responses to these challenges have included:

- Establishment of a Pollution Control Office to monitor air quality and undertake programs aimed at reducing emissions
- Development of water conservation strategies including waste-water treatment (Metropolis Makati City case study, 2010).

Barcelona: operational principles for territorial planning

Barcelona has identified five operational principles to guide territorial planning:

- Efficient use of land: renewing existing urban land is better than extending the occupied land
- Nodality: reinforcing existing centers and creating new centers
- Mixed and balanced uses: balancing population and employment
- Planning in networks: railways and roads to structure physical development
- Integrating open urban spaces: reinforcing continuity of open spaces (Roig, 2009).

1.2.2. Good governance, leadership and engagement

Government structures vary between countries and cities. Efforts to manage urban growth occur within the frameworks, conventions and requirements of these government structures and associated cultural systems. This includes constitutional requirements and structures that guide permissible management of urban growth (for example, different requirements for urban growth management between federal and unitary systems) and the political, cultural and social structures of cities (for example, Mashhad's system of dual governance involving both the shrine and government).

Government structures often have significant implications for where policies and strategies to manage urban growth are formulated and implemented. In some cases, changes are made to government structures or evolve over time to support urban growth management. For example, special purpose authorities, unified metropolitan local authorities or dedicated programs and processes.

Government is the legitimate organisation of the governing authority of a political unit. Government generally sets up the decision-making and governance frameworks for managing urban growth. In managing urban growth, governance (a different concept from government) is the systems, process and institutions through which inhabitants and groups make decisions. In this sense, powers and responsibilities rest both inside and outside of the formal authority of governments.

The nature of urban governance has become increasingly complex with the extension and integration of different technological and communication networks. This has meant that leadership, community engagement and new ways of viewing the systems in which decisions are made have become critical to managing urban growth.

The United Nations promotes the following as principles of good urban governance:

- Sustainability in all dimensions of urban development: Balance the social, economic and environmental needs of present and future generations and have a long-term strategic vision to achieve the common good.
- Subsidiarity of authority and resource to the closest appropriate level: Powers and resources be delegated to the closest level consistent with efficient and effective delivery of services to improve inclusion and responsiveness of policies and initiatives to the priorities and needs of the inhabitants.
- Equity of access to decision-making processes and the basic necessities of urban life: Sharing of power and decision making leads equity in the access to and use of resources.
- Efficiency in the delivery of public services and in promoting local economic development.
- Transparency and accountability of decision-makers and all stakeholders: Corruption can undermine credibility and deepen urban poverty. Access to information is fundamental to understanding who benefits from decisions.
- Civic engagement: People are the principal wealth of cities, and inhabitants must be able to actively contribute to the common good.
- Security of individuals and their living environment: Every individual has the inalienable right to life, liberty and the security of person. Cities must strive to avoid human conflicts and minimise the impacts of natural disasters by involving all stakeholders in crime and conflict prevention and disaster preparedness. Security also implies freedom from persecution, forced evictions and provides for security of tenure (UN-Habitat, March 2002)



United Nations Human Settlements Program, UN-Habitat, promotes the notion that improved urban governance contributes to the eradication of poverty. In 2002, UN-Habitat released a concept paper Global Campaign for Urban Governance: According to UN-Habitat, the practice of good urban governance promotes transparency, helps in fighting crime and corruption, and provides for the involvement of women in decision-making at all levels, recognising that women can play a significant role in positive change in society. UN-Habitat also developed indicators of good urban governance to help cities identify urban governance priorities and assess their progress towards the quality of city-life (www.unhabitat.org).

1.2.2.1. Positive leadership based on enunciated principles

Those managing urban growth are exposed to more information, a wider range of relationships that need to be developed and sustained and greater expectations from inhabitants about the quality of outcomes that will be delivered. New ways of delivering and funding projects and priorities, such as the blurring between public and private boundaries, are also adding to the complexity of the task confronting urban managers, together with more volatile and faster cycles of change with greater levels of risk, more uncertainty and issues that are more complex, multifaceted and interconnected (IBM).

In the face of this complexity and rapid change, leadership has a critical role to play as part of good governance in a series of areas: breaking down silos; mediating, linking and aligning different players in the urban system; and driving action to address urban growth management issues. Leadership is important at all levels and across all those involved in managing urban growth. Responsibility for demonstrating leadership does not sit with one person or role.

The Copenhagen Agenda for Sustainable Cities identified a set of ten principles for sustainable city governance. Leadership is required to set the agenda for good governance and to manage urban growth.

1. Rediscover the city
2. Redefine city value
3. Involve everyday experts
4. Break down silos
5. Redistribute urban decision making
6. Re-design urban planning
7. Promote corporate urban responsibility
8. Go global
9. Embrace chaos, crisis and change
10. Encourage passion in urban leadership

The UN Global Compact similarly has a set of ten principles developed through the UN process. These again are intended as part of a comprehensive framework for action:

Human rights

1. Support and respect for the protection of internationally proclaimed human rights
2. Active rejection of human rights abuses

Labour standards

3. Upholding of the freedom of association and effective recognition of the right to collective bargaining
4. Support for the elimination of all forms of forced and compulsory labour
5. Upholding of the effective abolition of child labour
6. Support for the elimination of discrimination in respect of employment and occupation

Environment

7. Support for a precautionary approach to environmental challenges
8. Undertaking to promote greater environmental responsibility
9. Encouragement of the development and diffusion of environmentally friendly technologies.

Anti-corruption

10. Work against all forms of corruption, including extortion and bribery

In its study of CEOs, general managers and senior public sector leaders from 60 countries and 33 industries, IBM suggests that good leaders work well with complexity based on the following characteristics:

- Creativity: Good leaders are comfortable with ambiguity, experiment with new ways of working, and change and/or create new business models. They are open-minded and inventive in expanding their management and community styles
- Engagement: Good leaders prioritise relations where there is ongoing engagement and co-creation with customers. They rebuild citizen and stakeholder relationships to predict, define, focus and deliver services but also inform leaders as to what is important
- Dexterity: Good leaders redesign operating strategies for ultimate speed and flexibility. They balance the pressure of expanding missions amid budget constraints

The Copenhagen Agenda defines that a successful urban leader has the following qualities:

- Passion: they are people who care and are passionate for their city, and ensure full accountability
- Creativity: they are holistic thinkers with vision capable of grasping how the many different challenges and areas of focus are interconnected, and appreciate that emerging urban challenges cannot be solved via traditional administrative practices
- Courage: they must be decisive and able to confront opposing interests
- Inclusive: they must listen and be committed to participatory leadership and open source management as a basis for governance
- Exemplary: they must be willing and able to set a good example, lead a lifestyle that encourages and motivates inhabitants

1.2.2.2. Negotiate the relationship between participation and authority

Engaging stakeholders and forming partnerships is a key aspect of leadership in managing urban growth. No one agency can manage urban growth, there are many actors and alignment with partners is required. Good urban governance requires equity of access to decision making, that inhabitants are engaged and empowered to actively contribute. Everyday people and users are the experts in using their metropolis and in knowing their needs.

The International Association for Public Participation Spectrum was designed to assist with the selection of the level of participation that defines the public's role in any public participation process but can be applied to the roles of stakeholders. The Spectrum shows that differing levels of participation are legitimate and depend on the goals, time-frames, resources, and levels of concern in the decision to be made. In summary there are five key activities of engagement:

- To inform: To provide the public with balanced and objective information to assist them in understanding the problems, alternatives, opportunities and/or solutions
- To consult: To obtain public feedback on analysis, alternatives and/or decisions
- To involve: To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered
- To collaborate: To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution
- To empower: To place final decision-making in the hands of the public

In Melbourne, the State Government's Department of Planning and Community Development has adopted a methodology for planning its stakeholder engagement to ensure meaningful and target engagement is done with stakeholders in managing projects.

Community engagement in Melbourne

In Melbourne, the State Government's Department of Planning & Community Development was awarded for the Best Public Participation Policy Framework for its Community Engagement Project.

The Institute of Public Participation's award is for the organisation that demonstrates its ongoing commitment to sound values for public participation by developing a values statement and/or specific policies in relation to public participation. The process used to develop the policy also needs to reflect a participatory approach and the strategy for ensuring the implementation of the policy will also need to be addressed.

Managing partnerships and creating teams can be difficult. Leadership is required to create the authorised environment for such partnerships to form, to explore new alignments and ways of doing things. In forming partnerships, leaders need to understand the motivation and interest of partner agencies. Identifying the intersection of interest and creating an opportunity where agencies volunteer to work together is a richer important and increases the likelihood of success.

With a complex variety of stakeholders and agencies involved in managing urban growth, good governance is supported by clear definition of roles and manages expectations of who would be included in the decision making process. The RACI Responsibility Framework is an approach that can assign clarity to roles and purposes to agencies in a partnership.

- **Responsible:** Those who do the work to achieve the task
- **Accountable:** Those who are ultimately accountable for the correct and thorough completion of the deliverable or task, and the one to whom the responsible persons are accountable. In other words, accountable persons must sign-off on work that responsible persons deliver
- **Consulted:** Those whose opinions are sought, and with whom there is two-way communication
- **Informed:** Those who are kept up-to-date on progress, often only on completion of the task or deliverable, and with whom there is just one-way communication

Clarity of roles assists with providing clear and transparent governance. It is part of the fundamental negotiation that is necessary over the relationship between participation and authority. Across the tensions inherent in this relationship, there needs to be consideration of how participation is related to the authority structures in place. This is not to say that participation is better than authority, or vice versa. Rather, what needs to be considered is the degree to which people can participate in a meaningful way, and how they do so in relation to the forms of authority exercised within their city.

1.2.2.3. Ongoing monitoring and review

Reliable information, intelligence and analysis are critical to effective strategic planning. For example, Moscow has identified the 2002 census of population as playing a critical role in providing information on the structure of the population in the face of rapid growth and construction (Moscow Metropolis Case Study, 2010).

In Melbourne, the State's Urban Development Program provides annually updated analysis of supply and demand for residential (broad hectare and major redevelopment projects) and industrial land across the metropolitan area and Geelong region. This annual monitoring assists the State Government plan for the provision and use of residential and industrial land; to link land-use with infrastructure and service planning and provision; to

take early action to address potential land supply shortfalls and infrastructure constraints; and to contribute to the containment of public sector costs by the planned, coordinated provision of infrastructure to service the staged release of land for urban development (Victorian Government Department of Planning and Community Development, 2010).

Reviewing progress of implementation together with the ongoing relevance of strategies, plans or policies is critical. Some cities have a regular review cycle. Others have identified triggers for review such as reaching a particular population level.

Gyeonggi Province's Growth Management Monitoring System

Gyeonggi Province is located in the central western part of Korea. It surrounds the cities of Seoul and Incheon and is bordered by Hwanghae Province (North Korea) to the north, Gangwon Province to the east, South Chungcheong Province to the south and the Yellow Sea to the west. The province has established a Growth Management Monitoring System using Geographic Information System technology to monitor land use plans and land development projects using growth management indicators. The system includes a range of geographic, regulation, planning, land development, and statistical datasets. The system plays a key role in supporting policy development and decision-making (Yu-sin, 2010).

Common failures of approaches to managing urban growth

- Lack of clarity around responsibilities across levels of government and other actors in the urban system, including lack of clear authority to enable responsibilities to be delivered.
- Inappropriate and narrow focus on economic development, thus sidelining other urban development issues across the domains of the ecological, political and cultural—including ecological and cultural sustainability, the politics of inhabitant ship and governance and the economics of equality.
- Lack of ownership of strategies by all levels of government, making strategies vulnerable when changes of government occur.
- Weak strategic basis and over-generalised or vague objectives.
- Lack of a clear focus and justification for development, particularly when masked by strategies intended just for city marketing.
- Lack of a commitment to implementation—including an inappropriate focus of resources on dealing with day-to-day trouble-shooting rather than longer-term strategic implementation.
- Lack of leadership by governments leading to strategies driven by interest groups or experts who engage in local political legitimisation and reflect niche rather than broader public interest.
- Failure to harness the energies of all levels of government and the network of broader stakeholders including civil society and business to contribute to implementation.
- Lack of communication or conviction, or poor communication based on an inaccessible academic or technical style.
- Failure to reflect local assets, issues, opportunities and distinctiveness, or equally a failure to reflect upon global pressures.
- Lack of tools for implementation and lack of investment and allocation of capacity/resources (UCLG; UNGCCP 2010; Villesendevenir 2010; Gleeson, and Darbas 2004; Sipe and Gleeson 2004).

Common characteristics of approaches to adequately managing urban growth

- Developing a shared understanding of the underlying potential of cities and agreement on what can be done now and what needs to be done later.
- Working with inhabitants and civil society organisations to gain local knowledge of challenges and expectations in developing strategies.
- Thinking beyond city boundaries and taking a regional perspective that links to national agendas and opportunities, and to the global context.
- Incorporating performance indicators in strategic plans during their development with those indicators chosen across the four social domains of economics, ecology, politics and culture.
- Involving the private sector transparently in development and implementation of strategic plans.
- Working across all levels of government with mutual commitment to the strategic goals.
- Plans used to make strategic choices, giving priority to actions.
- Supporting strong leadership, enabling action that publicly presents a vision of the future and anticipates problems before forced to act reactively.
- Integrating land-use planning and infrastructure planning and delivery.
- Integrating all aspects of physical and institutional change across the economic, ecological, political and cultural domains.
- Creating alliances of credible private, public and individual partners and champions.
- Instituting a process for regular review and updating that recognises the need to plan for change and continuity (UCLG; UNGCCP 2010; Villesendevenir, 2010; Gleeson, and Darbas, 2004; Sipe and Gleeson, 2004).

02.

INFRASTRUCTURE AND SERVICE

2.1. The good management of urban infrastructure

The provision and efficient management of urban infrastructure is one of the major challenges facing the institutions of urban governance, irrespective of the form they take or the sources of infrastructure funding – private or public sector, or both.

“Infrastructure provides a foundation for social and economic interactions. For that reason, it is of considerable interest to government. But the government’s role in enabling, or directly funding, the provision of infrastructure confronts tremendous policy challenges Infrastructure poses many complexities that are not encountered in more familiar markets for goods and services. Lagged supply responses, issues of lock-in and path dependency, the prevalence of substantial positive and negative externalities, and network characteristics with widely dispersed benefits or costs all combine to make infrastructure policy especially challenging.”

These remarks clearly summarise some of the key elements of formation of infrastructure policy and delivery of infrastructure that represent challenges to all governments. Infrastructure and the services it delivers are rarely like typical market-traded commodities, and have strong elements of public goods embedded in them. Adequate water supply and sanitation for example, are fundamental to human health and well-being, and have profound positive and negative effects associated with their presence or absence. Few countries have pursued the path of treating water supply and sanitation as pure ‘market commodities’.

Many practitioners and political leaders see the successful management of infrastructure and services – their planning, procurement and operation – as the heart of good urban management. This is both the case in cities in the developing countries (including those emphasising the provision of basic services such as water supply, sewerage, and legal power supplies to acceptable standards) and developed cities (particularly those that are moving towards integrated land-use, transport planning, and infrastructure development). At the same time, infrastructure provision fulfils a much wider role than simply enabling quality urban development.

Extensive infrastructure can support economic sustainability; it can link urban and rural economies while helping urban economies to function effectively; and it can both address environmental problems and create them. Infrastructure benefits some people but not all; and it is a significant call on taxpayers and consumer resources to fund its installation and operations (refer textbox below).

The East Asian Infrastructure Challenge

“We can take stock of East Asia’s infrastructure challenges in the context of five broader “stories” which have defined , and will continue to define, the region’s development:

The ‘Economic story’ is about the role that infrastructure has played in underpinning poverty reduction, investment and growth in the regions – it’s about levels of expenditure, stocks of infrastructure assets, access to infrastructure services, and infrastructure competitiveness, and what this implies for the future.

The “spatial and demographic story” is about the demands on infrastructure of rapid urban growth, and the contribution of infrastructure to that growth, and to meeting the needs of urban areas. But it’s also about the challenge of linking the poor in rural areas, both to services and to growth poles. And it’s about the challenge of infrastructure on a regional dimension – supporting trade, and spreading the benefits of growth across borders.

The “environmental story” is about dealing with the impacts of infrastructure on a range of environmental concerns – air quality, emissions, the availability of clean water and sanitation, and the function of ecosystems that provide livelihoods and other benefits. The environmental challenge is how to mainstream environmental issues, addressing environment not only at the project level, but in policy more broadly.

The “political story” is about who captures the benefits of infrastructure – who provides it, to whom at what price, at whose cost.

And the “funding story” is about the scale of East Asia’s infrastructure needs, and how to resource them. There are ultimately only two groups who pay for infrastructure – consumers and tax-payers; and a further set that can finance it – the private sector, and donors. What needs to be taken into account in structuring the roles of each? What can be expected of them?”

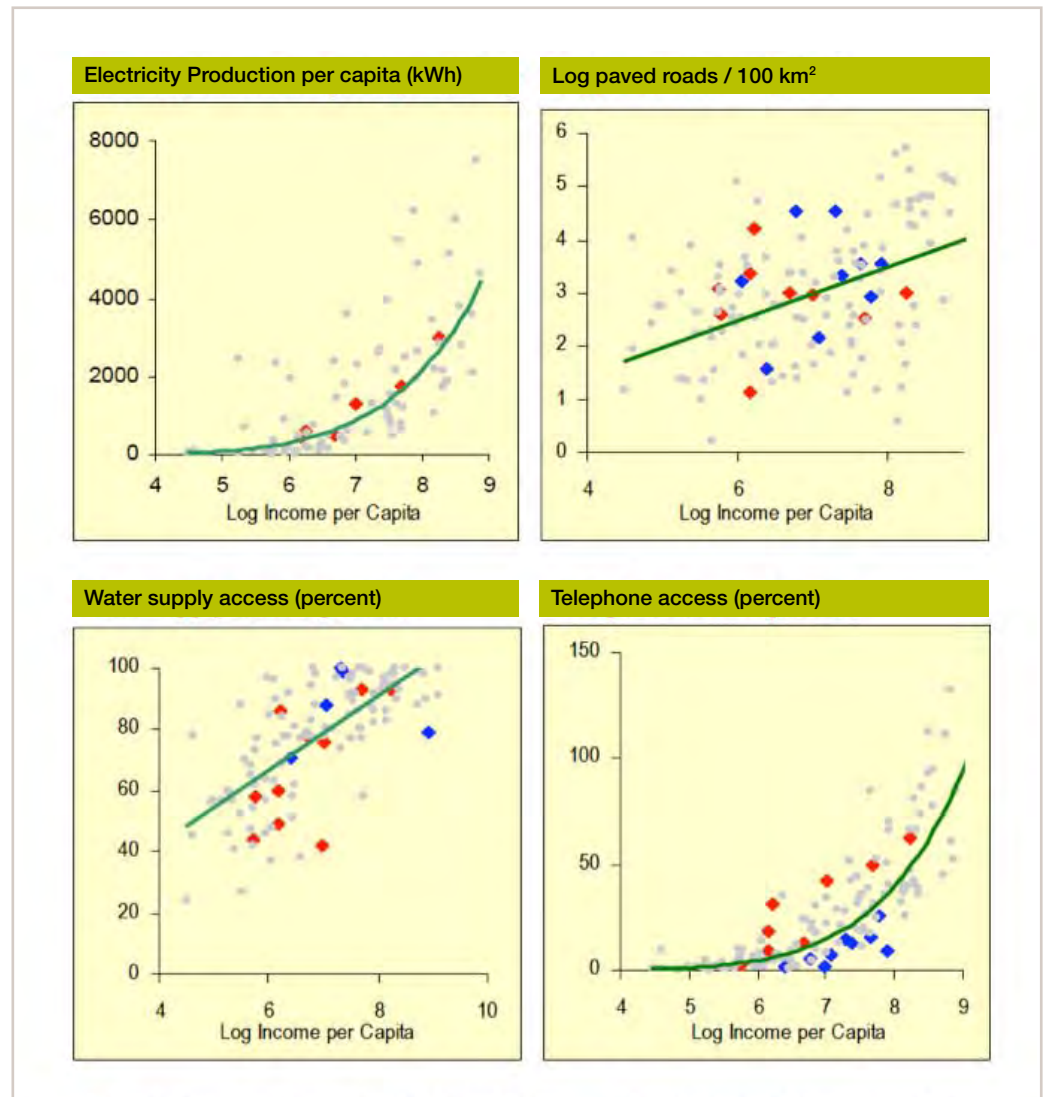
Asian Development Bank et al, 2005

The fundamental importance of infrastructure in economic growth and development is readily illustrated in two areas.

The first area concerns the association between the availability of basic infrastructure and economic outcomes in terms of per capita income. As data for the Asia-Pacific region show in relation to production of electricity, the extent of paved roads, access to water supply and access to telephone, the wider the availability of these infrastructure elements in an economy the greater the average per capita income (Figure 2.1). This is not to claim a correlation rather than a causal relation. The strength of the correlation varies across the sectors, being stronger with the production of electricity and telephone-access than with water-supply and roads (Asian Development Bank, et al. 2005).

Figure 2.1: CORRELATION BETWEEN INFRASTRUCTURE OUTCOMES AND PER CAPITA INCOMES

- East Asia, excluding Pacific Island States middle and low income countries
- Pacific Island States
- All



Sources: IEA (2004). World Bank (2004h), country-specific sources (publications, interviews, etc). ITU Télécommunications Indicators Database

The second important correlation is the link between infrastructure investment and regional economic development. Bhattacharyay argues that both hard infrastructure (roads, telecommunications, and railways) and soft infrastructure (appropriate policies, effective laws and regulations) have facilitated interregional, cross-border economic connectedness among many Asian nations. 'Regional transport infrastructure is considered to be one of the major determinants of the economic integration process. It enhances international (and regional) connectivity through the free flow of goods and factors across borders, allowing countries to benefit from a more optimal allocation of resources' (Bhattacharyay, 2010).

Impacts of Infrastructure on Poverty

“In the first place, infrastructure provides people with services they need and want. Water and sanitation, power for heat, cooking and light, telephones, computers and transport all make immeasurable differences in the lives of people. The absence of some of the most basic infrastructure services is an important dimension of what we often mean when we talk about poverty.

Infrastructure also impacts on the activities through which people earn their livings. It contributes to the health and education that people need to fill jobs, or create them. But infrastructure is also an intermediate input into production. Without power and water, all but the most basic production processes would grind to a halt.

Infrastructure raises the productivity of factors of production – by generating the power that allows factories to mechanise, by allowing workers to get to work quicker, or by providing the networks through which information can pass electronically. Infrastructure connects goods to market, workers to industry, people to services the poor in rural areas to urban growth poles, infrastructure lowers costs, it enlarges markets and facilitates trade.

In sum, infrastructure both impacts directly on poverty through services, and supports the processes of growth on which much poverty reduction depends. And at its best, infrastructure draws poverty reduction, service provision and growth into a reinforcing cycle.”

Asian Development Bank et al, 2005

2.2. The scale of the infrastructure challenge

Providing urban infrastructure and services to adequately meet the needs and demands of the world’s massive urban growth is a central driver of the world’s economy. The Asian Development Bank estimates that Asia needs to spend around US\$750 billion per year between 2010 and 2020 to provide adequate network infrastructure and service. For East Asia and the Pacific alone the estimates are that investment needs amount to over US\$200 billion per year, 80 percent of that in China, where in excess of seven per cent of annual GDP is necessary for infrastructure investment.

An OECD study titled Infrastructure to 2030 shows that global infrastructure investment needs amount to around US\$50 trillion for investment in roads, water, electricity, telecommunications and rail alone in OECD countries between 2005 and 2030. This calculation covers both new investment and maintenance.

While there appear to be few, if any, truly global estimates we can say that, annually, infrastructure investment could consume trillions of dollars to meet the assessed needs across the world. This massive scale of demand will not diminish. Instead, the forces of population growth; economic globalisation; urbanisation in the developing world; poverty reduction, wider participation and increased living standards; availability of consumer finance in the growing economies of the developing world; and people’s consumption patterns and expectations all will combine to drive infrastructure demands and needs to higher levels. This chapter addresses some of the key issues that the provision of adequate urban infrastructure raises, and responses to those issues.

Figure 2.2: QUALITY OF OVERALL INFRASTRUCTURE

How would you assess general infrastructure (e.g. transport, telephony and energy) in your country? (1 = extremely underdeveloped; 7 = extensive and efficient by international standards) / 2008-2009 weighted average



Source: World Economic Forum, Executive Opinion Survey 2008, 2009

2.3. Responses

Data from the World Economic Forum, Global Competitiveness Report 2009, illustrates a fundamental reality about infrastructure – its adequacy varies widely among nations and, as a consequence, the competitiveness of those nations with poorer infrastructure provision, in the global economy, is lower than that of nations rich in infrastructure. The implications for economic growth and social development, including urban development, are profound.

This raises the first set of significant issues in the area of infrastructure, and that is meeting the challenge of raising the standards, scope and accessibility of infrastructure across many nations to a level that adequately supports their economic, political cultural and ecological sustainability.

2.3.2. Central overview and strategy

National governments and business organisations around the world see good urban infrastructure and services as a key plank in productivity, employment, and economic sustainability. They are turning to reform-based urban management as part of national economic development. Taking a national view of infrastructure needs and priorities enables government investments to be targeted at those needs that are of greatest national economic benefit, while also enabling opportunities for the private sector to contribute to infrastructure investments of national significance and priority.

The past experience of rapidly expanding Asian economies, for example, points to the value of an overall national vision from which priorities are drawn:

“One could argue that the infrastructure strategies of East Asia’s developing countries today were inspired to some degree by the approach of five of the region’s developed economies in a previous era: by Hong Kong (China), Japan, Korea, Singapore, and Taiwan (China), as well as by one of the more successful developing countries, Malaysia. Of course, in each case, that approach has been heavily adapted to country circumstance, and there have been many other influences, but an inspiration can still be discerned.

In these six economies, political leaders and senior policymakers played a major role in creating the long-term development vision, and the sectoral strategies which flowed from that vision. All these economies had a strong emphasis on export-led growth, high savings and investment levels (sometimes with an FDI focus), and generally balanced social development. Infrastructure strategies were formulated to help achieve those objectives. These strategies usually enjoyed broad consensus amongst the policymaking elites. Policy enjoyed a high degree of predictability (Asia Development Bank)”.



With nations like Australia returning to centrally-managed setting of priorities, and other national governments increasingly engaged in infrastructure investment as a measure to stimulate their economies during the Global Financial Crisis, it is probable that there will be some re-emergence of national-level attention to urban infrastructure investment programs globally.

Most nations address sectoral needs from a central perspective. National transportation networks, aviation and ports, telecommunications, and water all are areas where there are examples of national strategies and programs. Until recently however, few have paid specific attention to the spectrum of infrastructure and the capital strategies necessary to ensure its delivery. Recent reports by the multilateral agencies (OECD, World Bank, Asian Development Bank, World Economic Forum) have all drawn attention to the significance of national infrastructure investment in economic performance of nations and their competitiveness, and these stimuli are creating a greater level of national interest and response.

Where national governments have not paid a great deal of attention, city governments, sub-national jurisdictions and metropolitan associations are acting independently and internationally to promote their cities' competitiveness and liveability.

2.3.3. Investment co-ordination

The lofty aims of co-ordinating urban services with population growth and economic sustainability have seldom been met, including integrated transport-land use planning and development. As a result there has been a partial rethink of aims and methods, and a partial retreat from pursuit of comprehensive state-driven metropolitan systems. Increasingly, cities have embarked on a search for resilient, locally-appropriate solutions for delivery and management of infrastructure and urban services.

The technologies of producing and providing urban infrastructure and services have been supporting trends to spatial disaggregation, in some cases dramatically: district power-generation and smart energy grids, mobile telephone and distributed broadband telephony, local water sourcing and recycling, district waste-management and water runoff and flood management, local and often informal transport systems. Indeed technology is underpinning new urban services.

There is a good, shared body of experience in relation to co-ordinating urban growth forecasts, strategic planning, allocating land, mobilising service provision, monitoring and financing. However, the success of such arrangements depends on long-term policy continuity and political attention – often more integrated forms of urban management are the victims of changes of politics, complacency or neglect.

More effort has been put into planning and co-ordinating hard network infrastructure in urban growth management than in catering for the technically more apparently forgivable human services such as health, education and security. Yet the availability of appropriate human services for new urban areas, urban infill, redevelopment and in-situ upgrading is vital to the success of urban management.

The challenges of co-ordinating the provision of infrastructure, and especially urban infrastructure, have been well categorised by the Asian Development Bank. They include the following challenges:

- **Co-ordination between levels of government:** Where national, state or provincial, metropolitan and municipal governments are all involved in aspects of infrastructure provision, co-ordination between them can be problematic. The most common issues arise in road networks, where national governments often fund national highway

systems that pass through metropolitan regions, provincial and metropolitan governments fund metropolitan arterial road networks and freeways, while municipal governments in some jurisdictions do the same (or at least provide local road networks).

- **Managing spill-over effects:** The benefits (or costs in terms of negative impacts) of infrastructure investment in one jurisdiction or one set of city districts may spill over into adjoining districts that may not be contributing to the investment and may gain benefits without paying or incur costs without involvement. Upgrading infrastructure for freight management in one district may lead to roads being congested by heavy trucks in another. Alternatively, investment in a large-scale recreational or community asset may create benefits for many communities around who do not contribute to the costs. Achieving co-ordination to manage spill over effects is often crucial to worthwhile projects proceeding.
- **Destructive competition:** Where jurisdictions are encouraged to be competitive in the interests of greater efficiency perhaps, there is a significant risk of overprovision of infrastructure investment where local 'prestige' and competitive eagerness leads to excessive investment relative to actual need. This may be more common in the community and recreations sectors, but has also occurred in areas of heavy investment such as port and airports.
- **Jurisdictional fragmentation:** In metropolitan areas where emerging municipalities might be relatively underpopulated and property or other taxation revenues may be too small, funding may not be available for the infrastructure needs of an emerging community. In these circumstances either a broader provincial or metropolitan government can provide a measure of assistance, or jurisdictions can be merged to achieve an adequate size at which infrastructure responsibilities can be fulfilled adequately.
- **Institutional arrangements:** Although not specifically categorised by the Asian Development Bank work, the arrangements set in place by governments to manage urban development and infrastructure provision can drive or hinder co-ordination in infrastructure investment. Where municipalities and special-purpose area-based agencies have responsibility for planning across infrastructure sectors, delivery agencies can use these planning frameworks as systems for determining priorities from a common basis of knowledge and policy. Where such area-based planning frameworks are absent, each agency sets its own sectoral goals with little regard to what other infrastructure agencies are doing. Institutionalising coordination mechanisms is a significant aid to metropolitan governments.

2.3.4. Negotiation over participation and inclusiveness

In some economies, the technocratic paradigm of metropolitan planning and urban growth management is giving way, under political and popular duress as a result of failures to deliver results, to a focus on local empowerment, decisions relatively autonomous from state plans, and mobilisation of civil society to turn urban growth towards catering for peoples' needs.

The theme of resilience has become much stronger in urban growth management, not only as a buffer against natural disasters, conflicts and involuntary migration, but as means of enabling economic development and civil society to adapt in circumstances too complex to be incorporated into urban services and infrastructure plans

The theme of social equity continues to run as a strong theme through this field of practice, whether as 'territorial justice' of more equal proximity to the opportunities and resources of city regions, or as access through affordability and cultural appropriateness too often denied minority groups in large cities.

Issues facing urban growth management in this sphere may be expressed through urban social movements, disputes over indicators, measurements and entitlements, or the



quiet distress of isolated or desperately poor households denied the opportunities of the big city. A large part of official development assistance has been directed at urban services and infrastructure, with challenges to the priorities of recipient governments and urban regions and benefits not only in resources but, if well handled, continuing urban management capabilities.

Lack of urban management expertise, particularly skills and experience across multiple urban functions, remains a major barrier to effective urban services and infrastructure in cities at all levels of economic development.

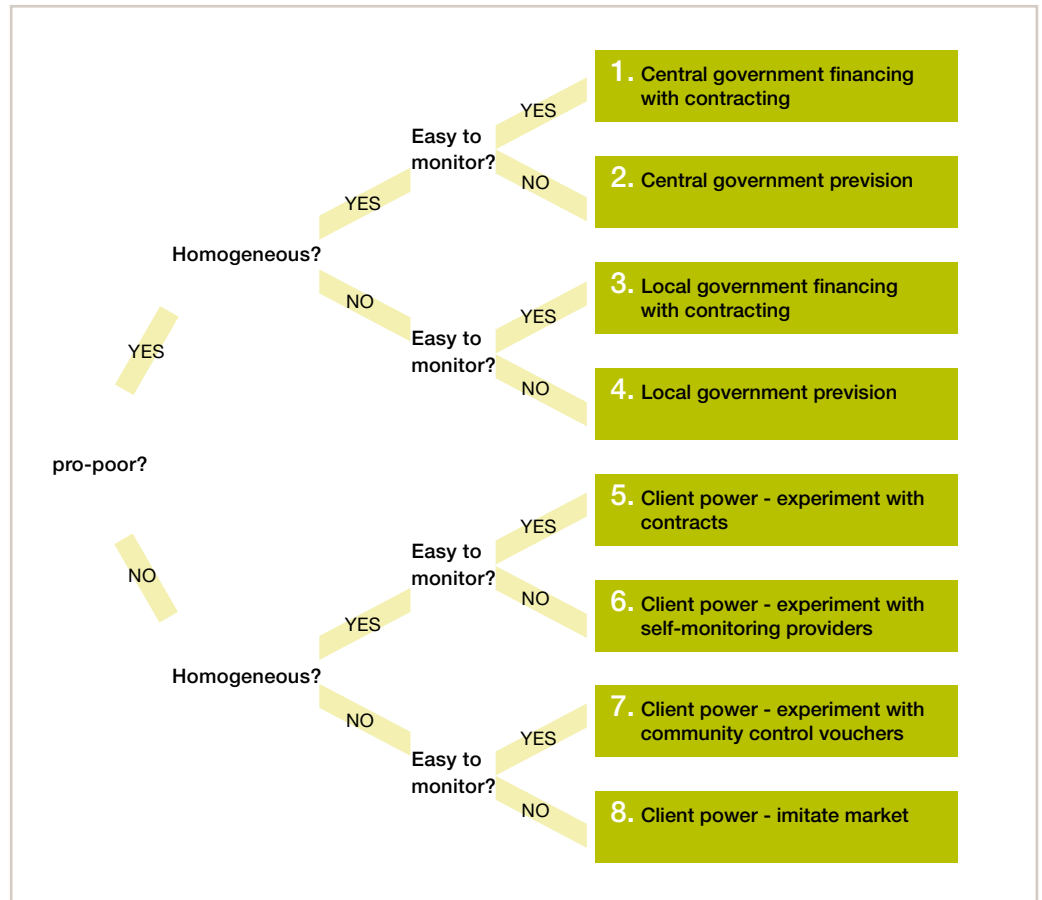
In other cases, originally sensible preconditions for receipt of infrastructure funding (from national governments or international development agencies) that require the formulation of long-term urban plans have brought about the proliferation of urban plans that are ultimately not implemented.

Capacity for implementation is probably the single most critical constraint in effective use of urban infrastructure and services in urban growth management. This is especially the case in poorer societies, where planning for infrastructure delivery raises expectations that often cannot be met simply because the funds are not available to fund the needed investment.

Nor are private sector funds readily forthcoming as they rely on commercial returns generated either from tariffs or subsidies that poorer societies cannot afford to pay. In these circumstances resorting to decentralised and inclusive models of planning and delivery is essential, mustering local capabilities and resources in whatever way is feasible, with the interests of the poor at the heart of organisational concerns.

The World Bank has identified eight different pathways to inclusive infrastructure delivery and management, each applicable to different circumstances—all are designed to protect the interests of the poor.

Figure 2.3: GOVERNANCE AND DELIVERY OF INFRASTRUCTURE ADDRESSING THE INTEREST OF THE POOR



(World Bank 2004)

Those arrangements that are government-led are generally regarded as more ‘pro-poor’ than those that place responsibility and leadership in the hands of clients and consumers, essentially because the poor are generally less powerful advocates of their own interests.

2.3.5. Integrated management of procurement

The connection between capital procurement and daily management and maintenance is often poorly understood. Infrastructure plans may not have sufficient input into the operating arrangements and whole-of-life project costs. Indeed with better management of existing systems, new investment may not be needed in some cases, or justifiably deferred. Under fiscal strain, however, too many cities defer major capital works for infrastructure, particularly in jurisdictions with short, or unstable, political cycles. Moreover, new capital stock is not always operated well, and a cheap up-front capital solution may have major downstream maintenance costs.

The recent attractions of public-private partnerships (PPPs) not only include their bringing private capital and know-how into public service provision, but the potential to trade off initial capital cost and know-how of life maintenance for an overall commercially viable result. Henckel and McKibbin (2010) argue that while strong theoretical arguments are made for privatisation of a great deal of infrastructure, success in practice has been very mixed—especially in developing countries.

“In theory there remains a strong case for privatisation as it puts in place the correct incentives for cost reduction and for innovation to reduce dynamic X-inefficiency. However, in practice privatisation of infrastructure is proving very difficult in the instances that it has been tried in various countries... The benefits of privatisation therefore are not immediately apparent; it takes years for old inefficiencies to be purged and for new technologies and managerial processes to transform the industry... Moreover, the political forces favouring government intervention are powerful, there exists a strong status quo bias and bungled privatisation attempts in some countries (e.g. intercity passenger rail in the UK) has lessened the public’s willingness to experiment with alternative funding and provision arrangements (Ken Henry, Australian Treasurer, 2010).”

The use of PPP's has evolved as a middle way, avoiding full privatisation but drawing on private sector finance and skills to work with government in providing selected strategic infrastructure investments. But PPP's have had an equally variable success rate as has full privatisation.

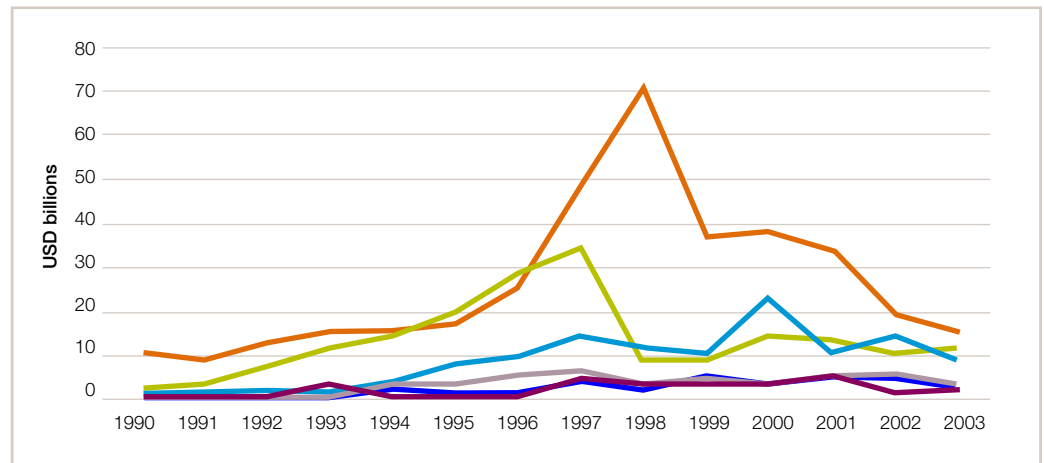
“Whether PPPs relieve public budgets is unclear. The government saves on upfront capital expenditures and ongoing maintenance costs but forgoes a stream of future revenues. Overall budgetary benefits must ultimately come from efficiency gains which would need to be appraised on a case-by-case basis. Social gains may come from innovations that are performed by the private sector but would not have been performed by the public sector... the complexity of infrastructure operations often requires renegotiation which itself is a source of significant inefficiencies. It opens doors to further pork barrelling, and the lack of competition and informational asymmetries at such a stage of a project can lead to considerable increases in cost and reductions in service quality. The evidence suggests that the costliness of renegotiation depends critically on the quality of industry regulation, on the presence and specificity of service and quality clauses, and on the presence of minimum income guarantees. Renegotiation may enable a firm to earn monopoly rents that were denied to it in the bidding process. Success of PPPs therefore depends on good governance of the renegotiation process and on the initial contract design (Timo Henckel & Warwick McKibbin, 2010).”

In developing countries the issue of private-sector participation is even more vexed. As the chart below shows, private sector participation has never been major in most developing regions of the world and has declined over recent years in others.

- EAP—East Asia-Pacific
- ECA—East/Central Asia
- LAC—Latin America;
- MENA—Middle East/North Africa
- SA—South Asia
- SSA—Sub-Saharan Africa

Source: World Bank Private Participation in Infrastructure database

Figure 2.4: PRIVATE SECTOR FINANCING OF INFRASTRUCTURE INVESTMENT

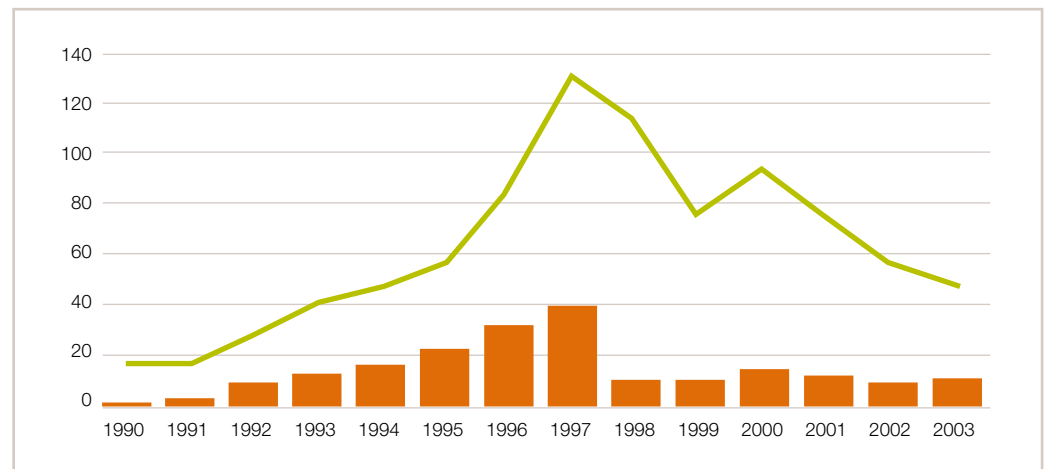


Part of the difficulty arises in ensuring that there are appropriate regimes for charging consumers for the provision of infrastructure services. Unless there is commercial profit, there will be no incentive for private-sector participation in infrastructure investments. On the other hand, poor people ‘tend to be extremely sensitive to prices of necessary goods; significant increases in water prices will be met with stiff opposition and possibly even social unrest. This constrains how profit-maximising firms can run their businesses.

Figure 2.5: TOTAL PRIVATE SECTOR INFRASTRUCTURE INVESTMENT 1990–2003, WORLD AND EAST ASIA

- East Asia
- Total

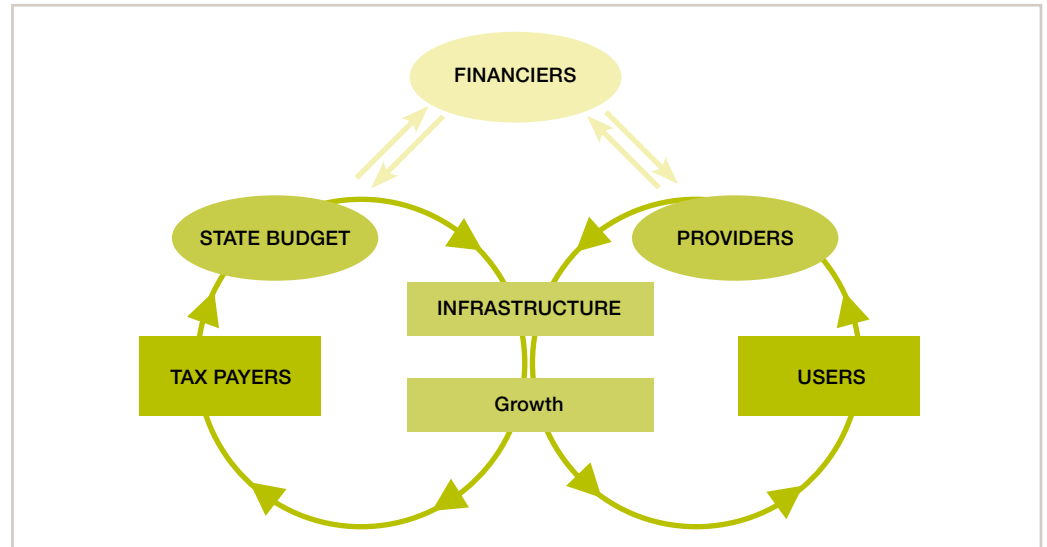
Source: World Bank Private Participation in Infrastructure database



For the world as a whole total private-sector funding for infrastructure has also been in decline. This is in part because the management of private investment has become more stringent in the face of early failures associated with over-liberal adoption of private-sector proposals, ultimately leading to poor outcomes in terms of assessments of public gains and benefits. While this is so, it remains useful under some circumstances that private-sector investment be drawn into the infrastructure development and funding processes, to expand the available capital base.

The question remains, however, is whether consumers or taxpayers will pay for the investment. The ability and willingness of consumers to pay is often the ultimate determinant of what is possible here. Experience shows, for example, that consumers are far more ready to pay for the costs of telecommunications (especially mobile services) than they are for water and sewerage or even power supplies. Charging regimes can isolate the poor from access to services when the returns on investment, in real economic terms as distinct from commercial terms, may well come from giving the poor priority access to basic infrastructure ahead of those who are better off in society.

Figure 2.6: THE FINANCING OF INFRASTRUCTURE: POSSIBLE FLOWS OF FUNDS



(Asian Development Bank, 2005)

The fundamental issue is that someone must pay in order for the private sector to generate acceptable investment returns. Ultimately it will be the political acceptability of charges to consumers or imposts on taxpayers (including investments foregone by the State through obligations to underwrite private sector investments) that will determine the most available pathway.

There are, of course numerous other issues that relate to individual infrastructure sectors, but all face the same global dilemmas discussed above. One of the key lessons learnt in infrastructure development over recent years is that there are no simple solutions at national, regional, metropolitan or local level that provide universal answers. All infrastructure investment decisions are tailored by the particular circumstances of society and place – and what works in one society and place may well not be appropriate to any other.

There are however some lessons that can be learnt in aggregate from reviews and studies by multilateral agencies, as well as from the experience of individual metropolitan regions.

2.3.5. Forward planning

One of the fundamental tools for those with responsibility for managing cities (and wider regions) is to understand their existing and emerging needs for infrastructure investment. Infrastructure is not static. Established infrastructure requires continuing maintenance. Often it is subject to capacity-constraints requiring upgrades; it can become technologically obsolescent; and, where there is growth, it must be extended to through network expansion, new head-works or entirely new systems.

Even where infrastructure provision is dominated by the private sector, as with telecommunications, strategic business-planning is essential in addressing all of the above factors, and none less so than planning for technological innovation and systems' obsolescence (witness the replacement of copper cable with optic fibre in telecommunications networks, and the rapid growth of wireless systems).

One of the primary reasons for planning ahead at the city, metropolitan, regional, national and international level for infrastructure provision is the demand for capital that it creates. Whether the need is for infrastructure to accommodate new growth – or for ca-

capacity -increases to address both new growth and back-logs; for investment to address technological change or complete new technologies; or to install infrastructure to meet unmet demand in less developed communities – there is demand for substantial capital, most of which has come from the public sector through income derived from taxation, borrowings and other sources. The capacity of public-sector budgets to fund new infrastructure investment is limited, in part by the growing demand in many countries for investment in recurrent expenditure on health, education and other forms of social support systems for both the wealthy and the poor, especially in ageing societies.

The OECD has been undertaking studies into infrastructure needs to the year 2030 in OECD countries, and has drawn the following conclusions:

“Infrastructure systems – transport, electricity, telecommunications, water, etc. – play a vital role in economic and social development. Increasingly interdependent, they are a means towards ensuring the delivery of goods and services that promote economic prosperity and growth, and contribute to quality of life...”

Demand for infrastructure is set to continue to expand significantly in the decades ahead, driven by major factors of change such as global economic growth, technological progress, climate change, urbanisation and growing congestion. However, challenges abound: many parts of infrastructure systems in OECD countries are ageing rapidly, public finances are becoming increasingly tight, and infrastructure financing is becoming much more complex...

As a result, a gap is opening up in OECD countries between the infrastructure investments required for the future, and the capacity of the public sector to meet those requirements from traditional sources. Bridging the looming “infrastructure gap” will demand innovative approaches, both to finding additional finance and to using infrastructures more efficiently and more intelligently through new technologies, demand management strategies, regulatory changes and improved planning (OECD, 2008).”

This infrastructure gap extends well beyond OECD member countries of course, and presents a major challenge in developing economies where capital for growth is even scarcer and infrastructure backlogs are massive. But the type of international review undertaken by OECD highlights both the demand for infrastructure and the opportunity to mobilise international financial markets to provide private capital to invest in this sector—an important element of forward planning.

At the national level, countries have undertaken surveys of their own infrastructure investment needs and opportunities, not least during the recent Global Financial Crisis when infrastructure spending was regarded by many nations as an essential element of public sector provision of ‘economic stimulus’ packages. Such packages were intended to offset the lack of availability of private capital to support growth and maintain employment throughout the crisis.

In 2009, the Canadian Foreign Affairs Ministry surveyed 32 countries that had prepared or were preparing national plans for infrastructure investment as part of their economic strategies for dealing with the Global Financial Crisis (Foreign Affairs and International Trade, Canada). These countries ranged from the USA, across Europe, Latin America, the Asia-Pacific Region to the Middle East and Africa. They included countries as diverse as the USA itself, the major European nations and smaller nations like Romania, as well as Israel, Egypt, and South Africa, China, India, Malaysia, Indonesia and Australia, and Mexico, Chile, Brazil and Peru.

While it is fair to say that planning in the face of a crisis does not represent embedded systemic planning for infrastructure investment as part of ‘normal’ government busi-

ness, it is highly likely that the Global Financial Crisis has driven home to governments the importance of infrastructure investment as an economic management tool. It has also made apparent the shortage of 'shovel-ready' infrastructure projects through which capital could be quickly delivered to the economy in the form of consumption hampered the effectiveness of these strategies to a sufficient extent that countries now highlight the importance of infrastructure planning for the future.

As the Secretary of the Australian Treasury, Dr Ken Henry, recently pointed out (Henry, 2010):

"... However, attempts to bring infrastructure online as part of fiscal stimulus packages were hampered by difficulties in finding ready-to-deliver, nationally significant infrastructure investment proposals. As it happens, such projects were not simply lying on the shelf ready to be picked-up and implemented by policy makers... The Government tasked Infrastructure Australia to conduct a national audit of the nation's infrastructure in late 2008... The process revealed a systemic lack of long-term infrastructure planning, with major project proposals requiring significant development before they could even be assessed... These difficulties were not unique to Australia. Other developed economies, including the United States, that pursued similar strategies faced the same difficulties. While some of the United States Government's infrastructure projects have been rolled out, many others have been subject to major delays and other difficulties. Even though a significant share of projects is still scheduled to commence, one year after the US stimulus package was signed, some 70 per cent of its US\$ 275 billion in stimulus grants and contracts have yet to be paid out... There is considerable scope for improvement in this area, in many countries. Improvements in planning have their own benefits, ensuring that infrastructure networks are best positioned to enhance productivity growth. And, the extent to which infrastructure projects can be brought online as 'shovel ready' during cyclical downturns also has the potential to enhance the conduct of macroeconomic policy."

This is an important conclusion for governments internationally, coming as it does from the leading macroeconomic management agency of the Australian Government.

At the metropolitan scale, experience with forward planning for infrastructure investment again varies widely. In the 1960s and 1970s, transport land-use planning was firmly in vogue internationally, and many Western cities and some developing countries prepared long-term transport investment plans.

Few, however, covered the full range of physical and social infrastructure in forward plans. Barcelona illustrates an interactive planning process (Metropolis Barcelona Case Study, 2010).



Barcelona metropolitan strategic plan

Various projects have begun in the metropolitan area designed to act as catalysts for metropolitan change. On the one hand, important projects have been rolled out to improve the territory's international competitiveness, such as the Prat airport terminal, the port expansion and the creation of new infrastructures related with research and the new knowledge economy, including the 22@innovation district, the Technology Park, the Alba Synchrotron light facility and the Besòs inter-university campus.

One important agent in the identification and promotion of strategies that foster economic, political and cultural development is the Barcelona Metropolitan Strategic Plan (PEMB). This is an association comprising the thirty-six municipalities that form the Barcelona metropolitan area and which features the participation of the administrations and the most important economic and social agents in the territory. The Barcelona Metropolitan Strategic Plan promotes public-private collaboration to generate new synergies and move forward with projects that can generate wealth, promote the internationalisation of the economy, boost innovation and investment, and attract talent.

Riyadh, capital of Saudi Arabia, in 2003 approved a metropolitan strategic plan for the city to guide its growth from some 4 million people to an anticipated ten-million people sometime after 2021. As part of the plan (MEDSTAR – the Metropolitan Development Strategy for Arriyadh) the city adopted development plans, including network and head-works staging plans, for water and sewerage, water reclamation and recycling, power supply, roads and public transport, as well as selected social infrastructure. These plans were costed and an overall infrastructure budget in five-year time period, to 2021, was prepared.

Underlying the plan and budget was a land-use Structure Plan for the city's future growth, which provided the basis for estimating infrastructure needs and for the locational planning of infrastructure provision. While ensuing years have seen changes to both the underlying Structure Plan and the infrastructure programs, the work served as an effective guide and priority-setting mechanism for the relevant infrastructure agencies, at the macro-level, while separate functional strategies were refined for each infrastructure element.

A more recent version of a similar approach is the plan for the metropolitan region of South-east Queensland in Australia encompassing the major urban agglomerations of Brisbane, the Gold Coast and the Sunshine Coast. Following preparation of a South-East Queensland Regional Plan 2005–2026, in 2004–2005, the Queensland State Government prepared a South-East Queensland Infrastructure Plan setting out the infrastructure needed to serve growth to 2026. The Regional Plan and the Infrastructure Plan were both updated in 2009.

The South-East Queensland Infrastructure Plan – Australia

The SEQ Infrastructure Plan was first released in 2005 and is updated annually to reflect and align with the latest planning and budget commitments. It sets timeframes and budgets to ensure infrastructure is delivered to support the region's growth. The SEQ Infrastructure Plan 2009-2026 remains in effect under the Sustainable Planning Act 2009. the plan will be updated to reflect the requirements of the new Act. The 2009 edition of the plan identifies \$124 billion in estimated infrastructure investment (inclusive of federal government contributions and other revenue sources), which is expected to create up to 900,000 jobs through to 2026:

- \$94.6 billion in road, rail and public transport
- \$4.6 billion in water
- \$5.8 billion in health
- \$3.3 billion in energy networks
- \$6.8 billion in social and community infrastructure
- \$9.1 billion in completed projects

Highlights of the SEQ Infrastructure Plan and Program 2009-2026

- It is the largest infrastructure program in the country.
- The plan identifies \$124 billion in estimated infrastructure investment, which is expected to create up to 900,000 jobs through to 2026.
- There are 32 new projects in the plan, at an estimated investment of about \$1.9 billion.
- The plan comprises 378 identifiable projects to 2026.
- 87 projects are complete at an investment of \$9.1 billion.
- Another 173 projects are underway, with 91 projects currently under construction – worth an estimated investment of \$56 billion.
- The bulk of the program remains similar to previous versions of the plan.
- Four years into the program, \$16.4 billion have been invested and 140,000 jobs have been created.
- In the year 2009-10, forecast spend is set to reach around \$22.2 billion, leading to a total of 175,000 jobs.

<http://www.dip.qld.gov.au/regional-planning/seq-infrastructure-plan-and-program>

(Department of Infrastructure and Planning, Queensland, 2010)

The Infrastructure Plan provides comprehensive coverage of future investments in transport, water, energy, health, social and community infrastructure. Projects are mapped and sit within the planned 'urban footprint' that provides for future forecast population growth in the metropolitan region. It is a comprehensive plan, but clearly flexible in terms of the precise timing of investment and sources of funding, but it does allow a clear appreciation of the future capital requirements for strategic infrastructure investment for the city.

It obviously does not cover local detail – such as the infrastructure needed for particular land development projects – but it addresses the region's strategic needs. It represents a reasonable working example of forward infrastructure planning that those responsible for city governance can use as a guide.

More difficult, of course, is the challenge of infrastructure planning that is inclusive and reflects the interests and needs of the poor in society. The following extract from the Asian Development Bank study illustrates the dilemmas, and the fact that remedies need to be tailored specifically to local challenges and needs (Asian Development Bank 2005).

Managing the contribution of infrastructure to inclusive development

While infrastructure is important, on its own it is not enough. Infrastructure has to work with other policies and interventions that also impact on inclusive development: on investment, innovation or policy stability that impact on growth; on those factors that impact on people's ability to access services.

The impact of infrastructure on inclusive development also depends on a range of choices that countries have to make, and balances that they have to strike. Sharing of the benefits of infrastructure is not automatic. Broad-based impacts on poverty may be positive, but the local impacts can sometimes be negative, unless deliberately mitigated. There are genuine choices to be made between investments that will impact more on poverty, and those that will impact more on growth – on rural roads, for instance, as opposed to port logistics. There are trade-offs to be made between the interests of the poor and the non-poor.

How infrastructure contributes to inclusive development will vary by the nature of each country's growth and poverty challenges. In Lao PDR it may be through greater links with the region. In Thailand it may be the creation of high-transaction business environments with easy accessibility. We know that infrastructure does impact on poverty, but precisely what investments are needed depends on whether a country faces mass poverty, or whether poverty is location specific; whether isolation is a root cause of poverty, or whether other factors such as caste, race, or a history of discrimination are more important.

2.3.6. Integrated infrastructure funding and delivery

Two multilateral studies attempt to summarise and draw conclusions from international experience in infrastructure financing and delivery – the Asian Development Bank and the OECD being the responsible agencies respectively. The Asian Development Bank work focuses on developing countries and the OECD on OECD member countries – the 'developed' world for the most part. The conclusions of the Asian Development Bank work are as follows:

- The centre matters. Infrastructure demands strong planning and co-ordination functions. This involves developing new models of strategic planning and co-ordination that engage democratically and encompass decentralisation, independent regulation, private participation and commercialisation of service provision.
- Decentralisation is important, but raises a host of co-ordination questions. Vertical and horizontal co-ordination problems, duplication and overinvestment, jurisdictional capacity and institutional arrangements all need careful attention.
- Fiscal space for infrastructure is critical. When governments have macro-economic capacity, fiscal space for infrastructure investment (whether direct or in support of private sector investment) must be created.
- 'Subsidy' is not a dirty word. Subsidies are important, but are always risky, and should be handled with care. Subsidies can be justified in the interest, for example, of environmental protection or poverty reduction. But subsidies can become open-ended and can delay or impede fiscal and economic reform.
- Regulatory independence matters more in the long term than the short term. Where competition is not firmly in place regulation of monopolies will be needed. Regulatory independence is important in the long term to ensure service providers can earn reasonable returns from their investment while public interest is protected.
- Competition is hard to achieve in infrastructure development, but it is one way to bring accountability. Infrastructure is often a natural monopoly, but technology and institutional innovation can generate useful competition among providers.
- Civil society has a key role to play in ensuring accountability in infrastructure provision. Through consumer participation, NGOs, parliament and regulatory processes, civil society can do a great deal to ensure accountability of infrastructure institutions.
- Addressing corruption is a priority. Infrastructure is often provided by monopolies, and can generate large returns. Often services are of high political interest. In the absence

- of adequate accountability these circumstances provide fertile ground for corruption.
- Public sector reform matters, but this needs to be done with realistic aims. If the private sector cannot be attracted because the state is unpredictable and lacks vision, or tariffs plus subsidies do not generate adequate returns, it is likely that public-sector performance may also be sub-standard. But public-sector reform is difficult to achieve and can be destabilising so care needs to be taken.
 - Local capital markets matter, but are not a panacea. Domestic savings tend to be less footloose than foreign savings, and are less exposed to foreign currency risks. But their application needs to be carefully managed across sectors and priorities, and their contribution to infrastructure depends on the quality of the projects to be financed.
 - Infrastructure development needs reliable and responsive development partners. Infrastructure is a long-term asset and development partners need to stay for the long haul.

All of these conclusions point to focused and conscious policy-setting by governments – national, provincial and metropolitan – that involves vision, forward planning, infrastructure programming and priority setting. Decisions need to be made about the most appropriate means of financing each type of infrastructure project and then there needs to be the creation of the regulatory and institutional settings that facilitate private-sector and community engagement.

While not easy and requiring long-term political commitment, there is sufficient international experience among major metropolises to show that it can be achieved. International experience is that, in reality, government generally delivers key and ‘essential’ infrastructure in most urban settings. The private sector can play a role in those services that are fee-earning, and are consumer-oriented (energy supply, water supply), in some sectors of public transport, and in the selective provision of toll roads. Sewerage is often linked with water supply in private-sector hands, with water charges meeting the cost of sewerage provision.

While numerous attempts have been and are still being made to expand private sector participation, the public goods nature of much urban infrastructure means that there are limits to what communities will accept politically in terms of private-sector, profit-driven, service provision (Metropolis Tehran case study, 2010).



Delivery of infrastructure in Tehran

In Tehran the main infrastructure services and network systems are delivered by central government, not by the municipality. The Ministry of Power provides water and electricity. Tehran as yet does not have an overall sewage system, and the Ministry for Power is also responsible for this service through its Tehran Sewage Company.

Gas is provided by the National Iranian Gas Company. Almost every household in Iran is connected to the gas network, including Tehran and its environs. Telephone and other communication services are also supplied by the government.

Whilst the delivery of these services is not integrated, a limited level of coordination is undertaken by the Municipality of Tehran, so that that new works and the maintenance of networks do not disturb the normal flow of traffic and the functioning of public spaces.

In a second significant review in 2006 the OECD developed and presented 24 'Principles for International Investor Participation in Infrastructure' that provide a very useful evaluation framework for choices involving private sector participation in infrastructure financing. These principles are appended in Appendix A; they have an emphasis on the following:

- Assessing the need for public subsidies in infrastructure
- Deciding on public or private provision of infrastructure services
- Enhancing the enabling institutional environment
- Building capacity at all levels of government
- Making public-private cooperation work
- Encouraging responsible business conduct

Like the Asian Development Bank conclusions, the OECD guidelines are very useful as a checklist to follow and debate in planning ahead for infrastructure development and financing, and in choosing the most appropriate and manageable partnerships between the government, private sector and the community, especially in less developed nations.

The integration of infrastructure provision across sectors is a complex one, relying on infrastructure providers working from a common information base about the future of the city, a common development strategy for the city and a shared awareness of the need for cooperation, joint planning and joint investment programming. This is hard to achieve, especially where players are both public and private sector.

Melbourne provides one example of how this task is approached:

"The Government made a commitment to prepare integrated infrastructure plans for urban areas experiencing substantial growth and key strategic activity centres to ensure more timely delivery of state and location government investments (Planning for all of Melbourne). Work has been undertaken in relation to this and three key areas for focused action have been identified:

1. Development of a shared understanding of the implications of the metropolitan strategy in managing growth. A shared understanding of what Melbourne will look like in the future, informed by population projections (Victorian in Future) and land-use/transport modelling, underpinned the development of the Victorian Transport Plan (VTP) and Melbourne @ 5 million (M@5M) which set out integrated land use and transport planning and investment initiatives. The VTP is central to all Departments' forward planning and M@5M provides a clear policy statement about lo-

cational priorities and the Government's vision for where Victorians live, work and play. GAA (Growth Area Authority) will continue to develop other spatial datasets to assist Departments to gain a better understanding of how population growth and change can best be met.

2. Identifying the infrastructure need in strategic locations. In the five designated growth areas of Melbourne (Casey-Cardinia, Hume, Melton-Caroline Springs, Whittlesea, and Wyndham), the GAA (Growth Area Authority) has been established to provide advice to Government on planning for and delivery of required infrastructure for new communities. This is being achieved through the Development Framework Plans, Precinct Structure Plans (PSPs) and related Precinct Infrastructure Plans (PIPs). The GAA initiates and coordinates this work in consultation with departments and councils.

A similar mechanism does not currently exist in relation to established areas. It will be critical that integrated infrastructure planning is embedded within planning for identified priority locations within established areas (e.g. Central Activities Districts (CADs)) given that established areas are anticipated to accommodate 53 per cent of Melbourne's new dwellings.

3. Establishing Government's priorities for managing Melbourne's growth. Traditional Government structures built around policy and service delivery portfolios do not easily allow the integration of planning and investing in shared priorities at particular places. Whole of Government approaches and policies (e.g. Growing Victoria Together and A Fairer Victoria) are mechanisms to align portfolio priorities. Both these examples have Government endorsement (Melbourne case study 2010)."

The intended benefits from integration of infrastructure investment are principally the timely delivery of infrastructure needed by a growing community as it needs increase, and the efficiencies gained when the city is substantially fully developed on a series of fronts. For example, rather than having fragmented delivery of infrastructure elements requiring re-excavation of trenches, or of road surfaces.

The sooner a community can become liveable and operational, with all its necessary services including community services or soft infrastructure in place, then the sooner it will be making its full social contribution to the life and well-being of the whole city.

03.

INEQUITIES AND SOCIAL INCLUSION

For wealthy cities and nations, the time has come to question whether the goal of growth, particularly economic growth, continues to serve its purpose. Henry Wallich, a former governor of the US Federal Reserve Bank and Yale University economist, has been quoted for his opinion that ‘Growth is a substitute for equality of income. So long as there is growth there is hope, and that makes large income differentials tolerable’ (quoted in Wilkinson & Pickett, 2009, p. 221). In their breakthrough book, *The Spirit Level: Why More Equal Societies Almost Always do Better*, Wilkinson and Pickett argue that the reverse is also true: equity can substitute for growth, as far as human development and happiness are concerned. In fact, examining decades of data from countries worldwide, they show that developed nations have crossed a threshold such that continued growth in strict economic terms no longer moves us toward any of our core developmental goals, be they life-expectancy, happiness or life-satisfaction, levels of trust, mental health, educational performance, or safety. Growth in the economic gap between people instead blocks our path toward all these aspirations.

The Millennium Development Goals expose the shocking cruelty of the most severe forms of poverty – the hunger and desperation that is the only reality for a quarter of the population of the world’s developing countries (UN, 2009). And the MDGs compel action to improve the lives of this most vulnerable and growing group of people worldwide. The question of social inclusion asks us to extend our consideration of hardships endured by the “have-nots” when seen in less stark, more relational terms. Indeed, from a social inclusion perspective, MDGs aiming for universal primary education for girls and boys, to empower women and girls, guarantee health care for young children and mothers, ensure to environmentally sustainable development (e.g. housing and conditions for slum-dwellers), also appear as fundamentally interlinked to lifting the crushing heartbreak of poverty.

A key argument in effective planning and policy for social inclusion is that equality lifts everyone. In cities leading the way in this area, investments in social development are seen to be crucial to economic development and liveability over all, benefiting those in our cities who never set foot in a homeless shelter or squatter settlement or stand in a soup-kitchen line. Indeed, evidence is mounting that the connection between equality and healthy development outcomes is real and strong, and that all of us, regardless of socio-economic status, are vulnerable to the challenges of inequality and injustice. Nations, cities and even neighbourhoods that are highly unequal are also highly exclusive, in social terms. For example, the United States is a country with some of the highest levels of income inequality, with the top one per cent of earners holding close to half of all the wealth. These disparities in themselves damage society as a whole, such that American infant mortality rates are higher, poverty rates are higher, and life-expectancy is lower throughout the entire life course than in other rich nations. A consensus is emerging that the gap between rich and poor is the key determining factor of health and well-being and that positive social inclusion is a co-benefit of reducing this disparity.

3.1. Defining positive social inclusion

Social inclusion can be understood as policy which moves individuals and groups towards negotiated integration into society, whether by removing legal barriers to inclusion or by creating policies to encourage inclusion. René Lenoir (1974), who was at the time the French Secretary of State for Social Action, coined the term ‘social exclusion’

in response to poverty and deprivation analyses that focused only on symptoms (low income) and not systemic causes of deprivation. Key factors that cities need to plan for in this respect include housing, and social as well as physical infrastructure, taking into the different needs and capacities of individual cities.

Typically in contemporary debates, social inclusion is treated as a social good to be achieved and exclusion is a bad thing to be avoided (M. Eames and M. Adebawale, London, 2010). The issue that this very common conception of the problem elides is that in certain circumstance it is exclusion that leads to a social good. For example, in places where harassment is common or social difference is threatening, there may legitimately be a need to exclude outsiders from certain activities or places. Sometimes even the open and mobile presence of others in a zone of difference – for example a customary sacred site – renders that site cultural and politically dead. A second, and more abstract point, is that concentrating on overcoming questions of exclusion tends to leave issues of exploitation unaddressed. Unless, for example, we take seriously the forms of poverty specific to being marginalised under contemporary conditions of globalisation, exclusion is seen to have no perpetrator.

Seen in this way, exclusion or exploited inclusion is the form that poverty develops in conditions where the realisation of profit occurs through organising economic operations in [globalising] networks. It represents the exploitation of the immobile by the mobile and therefore suggests that a city, community, or organisation act to tie-down the perpetrators of such exclusion-inclusion exploitation.

The point is that only by coming to grips with how – on what terms and who – a city, community or organisation includes and excludes some and not others that sustainable development in its most meaningful sense can be implemented. In this sense what we are arguing for is negotiated and reflexively understood forms of inclusion – positive inclusion – rather than inclusion for the sake of it or empty inclusion akin to the over-generalised liberal notion of equality of opportunity for inclusion (this parallels the earlier discussion of the need to negotiate the relationship between participation and authority. See Sections 1.4.2 above and 3.2.4 below).

Unplanned urban growth presents particular challenges for social inclusion. The case of India's cities is illustrative. India already has some of the most densely populated cities in the world, with cities like Mumbai and Kolkata experiencing ten times the population density of New York or five times that of London. At the same time, Indian cities are subject to an influx of over 38,000 new residents every day as India continues to urbanise at a rapid rate. This in-migration does not even account for half of urban growth overall. This situation puts basic necessities such as access to shelter, secure tenure, and land rights in question as the physical, cultural and governance infrastructure in these cities are stressed and strained (Boos & Co., 2010). It creates large 'floating populations' of itinerant workforces and households, invisible to formal registration and state recognition, political rights and service entitlements. Poorly-serviced, temporary settlements become permanent and continue to expand with these newcomers, significant portions of whom suffer from forced relocations and are cultural minorities or original peoples, struggling to retain and recover basic human rights. Thus while cities in developing countries explode with population, they may be also splitting and dividing, fostering conflict and insecurities, and calling out for policy responses to span the growing gaps in human and social service provision, in addition to the physical infrastructure deficits.

Population growth creates challenges and costs for urban governance, but adequately anticipated and well-managed growth puts cities in good standing for spreading the wealth of liveability further amongst more residents. The usual narrower focus on urban liveability or competitiveness aims to attract more work and workers in skilled sectors – professionals, technologists, and artists. A concomitant focus on social inclusion recognises that this work and these workers are always dependent on the services provided

by those working in less glamorous occupations. If this latter larger group of people cannot make ends meet, feel a sense of belonging and a sense of hope for their children, a city's liveability will surely be short-lived.

In this way, a focus on positive social inclusion engages rich countries and poor countries alike. It addresses the particular challenges posed by the fact of rich and poor, powerful and powerless sharing the limited space within, between and across cities. The notion harkens back to old ideas about the need in life for choice to take part in the life of the community. This is a core component of overcoming poverty, as for example the inability to participate in secure employment and gain secure credit often leads to economic impoverishment, which in turn leads to other deprivations like homelessness and hunger. Social exclusion is both a cause and effect of poverty.

Social exclusion has economic, ecological, political and cultural dimensions. From a socio-economic perspective, exclusion can mean a lack of income, as well as the production and recognition aspects of employment. In the socio-cultural domain, the negative forms of exclusion include an inability to access social services such as health and education, the labour market (precariousness of employment as distinct from low pay), and informal social networks that are key to guiding people away from crime, desperation, and preventing homelessness. The political dimension includes the denial of rights like personal security, rule of law, freedom of expression, political participation and equality of opportunity, as well as democratic rights (Bhalla and Lapeyre 1997, 419).

Social exclusion happens when people or areas experience a combination of linked and mutually-reinforcing problems, such as unemployment, discrimination, poor skills, low incomes, poor housing or homelessness, social or political isolation, high crime, ill-health and family breakdown. Sen (2000) refers to two types of social exclusion, active and passive. Active social exclusion is promulgated by law or other pronouncement, such as not allowing a group of people to participate in a process because of ethnicity or some other defining reason. Passive social exclusion comes about through social (as opposed to legal) processes such as poverty or isolation. The key question is whether individuals are prevented from engaging in what they consider to be normal social activities and relationships by financial or other infrastructural or social constraints (Gordon 2000). Social exclusion creates tensions and misgivings between and across households, families, neighbourhoods, faith-based and other social and cultural networks. It can be felt more acutely by particular groups, such as children, the elderly, women, ethnic minorities, and the disabled.

3.2. Positive responses

Fortunately, cities around the world are experimenting and innovating with a wide range of different approaches to the challenge of creating socially inclusive cities. Across this enormous range of policies and practices, many good ideas and successful case studies can be identified. A variety of responses are profiled here, beginning with a discussion of the need for a holistic approach, followed by efforts to ensure individuals' ability to cover their basic needs (the content dimension), to increase individuals' opportunities to improve their life-chances and improve social relations (the process and relationship dimension), and to increase their socio-political capability, rights and access to resources (Gerometta 2005). Questions of leadership in social inclusion responses as well as monitoring and assessment in social inclusion will be covered at the end of this chapter.

3.2.1. Holistic approaches – Social inclusion frameworks

Social inclusion is clearly a multifaceted concept that demands a multi-pronged approach. Different cities have different ways of answering questions about the complex relationship between, for example, social inclusion and integration, inclusion and equity or justice, inclusion and solidarity. Some leading cities have developed home-grown social inclusion policy frameworks in order to ensure coherence, efficiency, and co-ordination of multiple efforts in this realm of policy action.

A social inclusion framework (SIF) is a municipal strategy to bring coherence to social goals by linking inter-connected social issues under one policy umbrella. Sometimes called social development plans or social well-being plans, these frameworks take a co-ordinated long-term approach to issues including housing and homelessness, safety, immigration and diversity, belonging and inhabitantship, arts and culture, and economic security. SIFs are designed to put a social 'lens' on the work of all civic departments, boards or commissions regardless of their core functions. SIFs are characterised by an emphasis on promoting a civic culture of community engagement, capacity building and community participation. In this way, they are typically both outcome-driven and process-driven in their approach. SIFs reflect a growing recognition that local governments have an important role to play in enabling social inclusion by better co-ordinating the services and functions for which they are already responsible, creating new policies where needed, improving avenues of community participation, and advocating to higher levels of government on social issues where the city has limited or no direct authority.

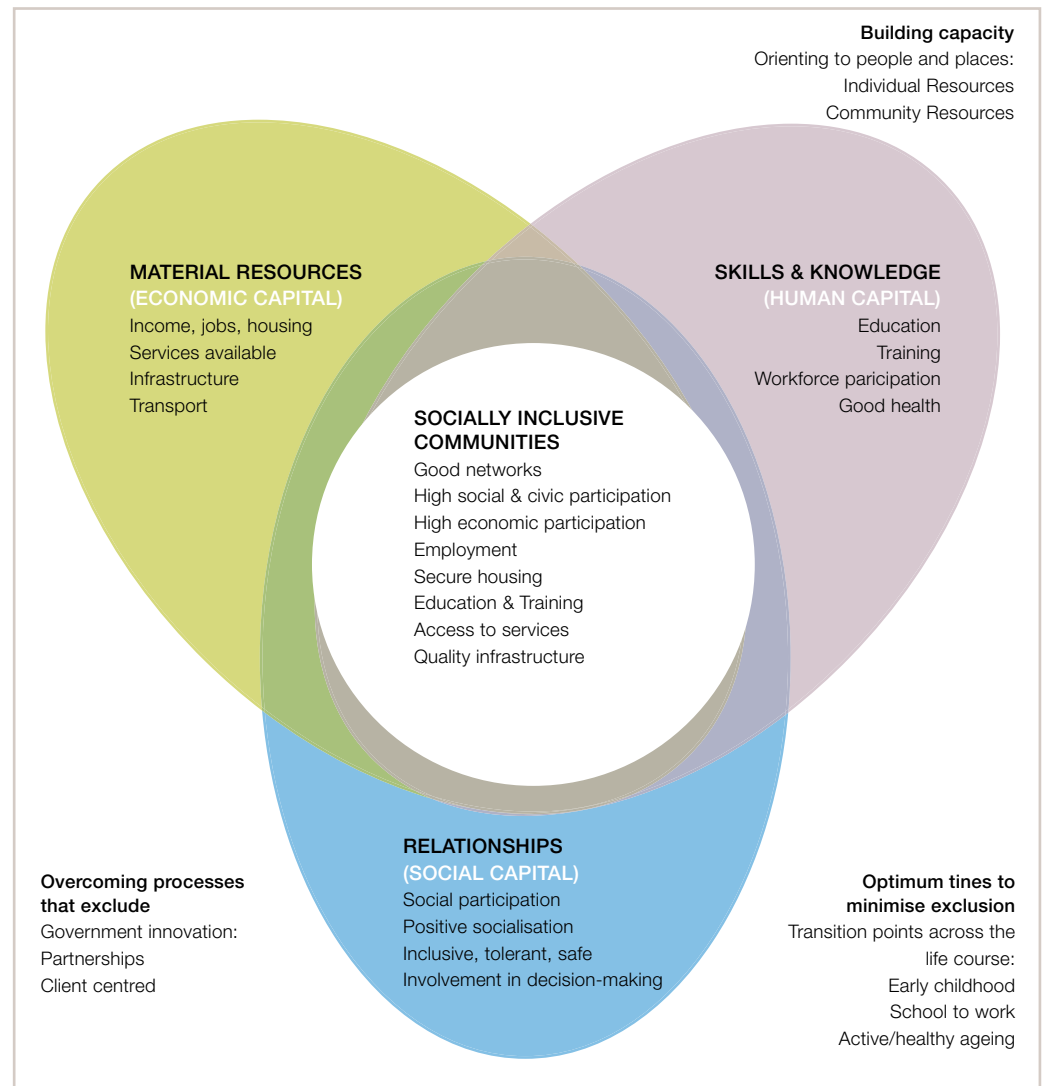
A key value of a social inclusion framework is to provide a means of setting policy priorities in a context of limited resources. Different initiatives will be more critical depending on development context, emerging issues and trends, technological possibilities and political changes. At the most basic level, distributional aspects of social inclusion are key in developing country contexts, while relational aspects emerge more prominently in importance in cities in the developed world. In more nuanced terms, a SIF can provide an important tool for community resilience, or the ability to cope with change over time, especially related to urban development, and to respond to emergency or crisis events.

The state government of Victoria, Australia, launched the Fairer Victoria initiative in 2005. In 2010, investments in the fairness agenda amount to \$1.35 billion AUD, bringing the total dollars invested to \$6.4 billion. The initiative has four pillars of emphasis: getting the best start in childhood, improving education and entry into the workforce, improving health and wellbeing, and developing liveable communities. These are complemented by five objectives:

- Increasing access to universal services (maternal and child health, kindergarten, education and health)
- Reducing barriers to opportunity (individual capacity and access)
- Support for disadvantaged groups
- Supporting places with locational disadvantages (due to the compounding effects of unemployment, poor services and infrastructure, low education levels and poor health)
- Making it easier to work with government (state government in partnership with the community sector, local communities and other levels of government to reform services, provide clearer pathways through service systems, and work better at a regional and local level)

The Victorian approach to social inclusion is illustrated by a Venn diagram:

Figure 3.2. SOCIAL INCLUSION FRAMEWORK, STATE OF VICTORIA, AUSTRALIA 2008



Victoria's sustained emphasis on addressing social inclusion has yielded results with improved trends in almost all focus areas. The state also compares favourably to other Australian states in most areas. Targeted groups in need of additional supports and strategies include the highly disadvantaged, indigenous people, teenagers, and particular (suburban and rural) geographical communities. Innovative strategies being implemented in Victoria to address these needs include the Wannik Education Strategy for Koori Students, aiming to close the education gap for Indigenous residents, a Youth Compact to guarantee subsidised government training for eligible young people, and targeted social and health services in specific communities.

3.2.2. Poverty alleviation

A social inclusion approach does not ignore or supplant policy action to alleviate poverty. Instead, it considers overcoming poverty via developing resources and capacity to cover one's basic needs as the key precursor for lasting social inclusion. People need basic capacities and knowledge to avoid, deal with, and escape from disadvantage, building upon individual and community-level strengths rather than fixing deficits.

The phenomenon of urban growth within developing countries is substantially a phenomenon of the spread of slums. One in three urban dwellers is a slum dweller, or

nearly 1 billion people. In certain countries in Sub-Saharan Africa, up to 78 per cent of the urban population lives in slums (UN-Habitat 2003). Should we fail to take the action required to meet the MDGs, the slum population in low and middle-income countries will likely double in less than 30 years. Slum dwellers not only live in precarious, unhealthy conditions, lacking water, sanitation, sufficient living space, safe and sound dwellings, and/or secure tenure, but are also excluded from opportunities to be a part of city life in ways that others take for granted. The call for slum upgrading (security of tenure, affordable access to land, basic services, and housing finance), improved urban planning and design, and the provision of adequate alternatives to slum formation is urgent. Although local and national governments are responsible for initiating much of this work, a great deal of mounting evidence supports the fact that the urban poor themselves are driving the change that is needed.

City of Pune

Federations of the urban poor are community-managed savings and credit groups. In Pune as in more than fifty other cities in India, the National Slum Dwellers Federation and Mahila Milan are led by women savers who collect small quantities of money from members on a daily basis. From this small savings, they provide crisis credit, savings accounts, housing and relocation services, upgrading and toilet-block building and maintenance, in addition to a trustworthy social network, and opportunities for participating women to learn about local conditions and solutions. They are in a sense the urban corollary of the Self-Help Group movement in India, recognised as the largest microfinance program in the world, which services primarily rural households. The time and 'sweat equity' invested by members of these collaborative is often their chief resource.

Savitri Marketing Institution for Ladies' Empowerment (SMILE) began as an initiative of Ms. Vandana Chavan, who saw women's empowerment of a means to social and economic development in society overall. During a one-year term as mayor of the City of Pune in 1997, Ms. Chavan replicated what had been a micro-scale program in women's functional literacy and vocational training city-wide, reaching more than 40,000 women. Now a partnership with the Pune Municipal Corporation, SMILE trains women in tailoring, crafting and marketing a wide range of products. The State Government of Maharashtra is funding the replication of the SMILE program in cities state-wide, and also supporting the opening of a chain of SMILE retail outlets throughout the state. It is cited as an innovative practice as a component of the National Strategy for the Urban Poor project of the Ministry of Housing and Urban Poverty Alleviation, Government of India and UN Development Program (UN-Habitat, 2008).



3.2.3. Urban equity

A positive social inclusion approach identifies people not as isolated individuals but as living within a network of relationships with household, family and a range of communities. Assuming this network-based view brings into focus the stark inequities of life for people across a city: wide gulfs exist in different people's access to resources, to a supportive social environment, to shelter from risks and dangers, and to the processes of government and the economy. A city may be categorised as having an equity agenda if there is 1. an explicit recognition that poverty and inequality are unacceptable; 2. an inclusion of poverty reduction and/or amelioration in the stated priorities of city government; and 3. a demonstrated commitment to act in accordance with that priority. Prioritising development and planning activities to disadvantaged sectors of the city is part of a systematic attempt to redistribute equitably services, income, wealth and participation opportunities.

However, in this respect of social inclusion policy in particular, the formal commitments and actions of government fail to tell the complete story. Capacity development within groups and communities as well as in state and civil society organisations, including faith-based organisations where appropriate, is a key to effectively addressing inequities.

3.2.4. Empowerment

In addition to a focus on ensuring material wellbeing, human development and equal opportunities and safeguards, a social inclusion approach demands attention to less tangible, but crucial, elements of what in some literature is called empowerment: valued recognition, human rights and dignity, involvement and engagement (Mitchell 2002). Part of the task of local governments making progress in the realm of social inclusion is to avoid creating false hopes, and the disillusionment that participation with authority often engenders. Across cultures and contexts, the poor have proven that they are capable of organising and advocating for themselves as they generate and use scarce resources to collective benefit. Part of the task of leadership is for governments to acknowledge existing organisations of the poor where these exist, and supporting the efficient functioning and up-scaling of these initiatives. In recognising and giving qualified but clear lines of authority to these groups, governments gain partners in social inclusion campaigns, fresh and proven ideas for reaching the chronically poor and excluded, and representatives of the poor able to act as conduits for more direct flows of information and resources. In scaling up activities, urban governments can recognise the potential for changes within their formal government systems to reflect learning from partnerships with federations of the urban poor regarding how to address the most difficult structural issues, such as the allocation of land and infrastructure to urban poor organisations, changes in official norms and standards, and changes in the ways government agencies work with poor and homeless groups (UN-Habitat, 2003).

Makati City

Makati City is one of the sixteen cities that constitute Metro Manila, and serves as the nation's financial and commercial centre. Its population is growing at about the national rate of 1.91 per cent but balloons from a resident population of 510,383 to almost four million during the working day. Despite its status, the unemployment rate in the city is higher than the national average and nearly half the city's residents are estimated to live at the subsistence level, many in packed living spaces on the banks of Tripa de Gallina, the Taguig Creek and the railway right-of-way, as well as taking over whole streets such as Metropolitan Avenue and Panama Street (Makati City, 2005). The city sees its people as the pillar of urban governance and espouses

a 'womb to tomb' approach to creating programs necessary to improve health and quality of life in the city. Notable socially-inclusive policies include the Yellow Card free comprehensive health care system that permits the poorest residents to benefit from excellent health care facilities, free public education, including highly subsidised post-secondary education, and initiatives targeting the inclusion of seniors and persons with disabilities. As is the case throughout the Philippines, the city also pursues a bottom-up approach to empowerment and community engagement.

The devolved governance system in the Philippines offers opportunities for engagement and empowerment of urban residents as well as constraints in terms of leadership, co-ordination and resource provision at the national level. National policy to address deficiencies in affordable housing, for example, exists, but remains unconnected to urbanisation and actual shelter provision at the scale of cities and barangays. Planning in Makati City is guided by the Makati 21 City Development Agenda. This agenda establishes a goal of balanced growth, focusing on the three pillars of jobs and employment opportunities, affordable shelter for informal as well as formal settlers, and pride of place or sense of belonging. Devolving governance further to the level of the barangay, the lowest level of governance, participatory planning is used widely. Typically, participatory planning exercises lasting five-to-six days are held, resulting in a detailed five-year plan and budget with a pledging ceremony that motivates community members and local officials to commit time and funds to the plan. It is common for five-year plans to be completed in three years, indicating a high level of cooperation (One World Action, 2007). Ugnayan sa Barangay is an additional means by which the City Government of Makati consults with residents beyond the formal voting mechanism. These consultations serve to inform and educate people at the smallest political scale, the barangay, about matters of concern to them. Strong community organisation is a pre-requisite for effective participatory planning and implementation.

3.2.5. Leadership (the process dimension of social inclusion)

Leadership and recognition of authority are different but closely related features in a social inclusion policy strategy. No less than a fundamental redefinition of the political relationship between excluded inhabitants and their governments is what is called for. Creating effective and sector-specific processes for participation in planning and urban development decisions is a key means of avoiding the risk of over-promising and empowering inhabitants at the same time, particularly those from marginalised and discriminated groups for whom the opportunity to participate may be a watershed event in their human development and realisation of human rights.

Issues of poverty and inequity are perennial ones in cities around the world, and will remain so for the foreseeable future. Restrictions of formal powers and jurisdiction, resources and capacity, and deep-rooted structural disparities of wealth, income and rights virtually guarantee that some issues are practically unreachable in urban interventions. Good urban governance entails principles of equity, efficiency, transparency and accountability within city leadership, in addition to the components of empowerment addressed above. Effective initiatives take significant measures to involve those who have been traditionally excluded from politics in making decisions about policies that affect them. Measures may include public consultation programs, participatory planning and budgeting and e-democracy initiatives. Whatever the process of focus, the key is that they be developed and shaped by the participants, include formal mechanisms for ensuring accountability, and that they take account of diversity and conflicts among and between different excluded groups (One World Action, 2007).

The concept of the right to the city has been developed to counter the structural process of active and passive exclusion of the urban poor. The concept of the right to the city defends the use-value of the city as a public site of interaction, difference and struggle, distinct from its position as a site of economic production, consumption, and exchange (Lefebvre, 1996). A rights-based or rights-plus approach can help generate the political will and create a culture of resource allocation that places the needs of vulnerable groups and individuals on an equal footing with the interests of those who are better off (Iwamoto, 2008).

Legal redress of social exclusion of the poor has taken such forms as squatters and slum dwellers' rights to settle on urban land and protections from forced evictions, for men and women alike. Secure tenure ranges in nature based on context-specific factors, from full land titling to local customary rights of tenure (Brown and Kristiansen, 2009).

3.2.6. Monitoring and assessment

Key to mounting and maintaining effective strategies to combat social exclusion is the ability to gauge trends and assess the impact of particular responses on these. While the manifestations of social exclusion and policies to move toward inclusive societies are specific to context, efforts have also been undertaken to standardise measures, goals, and progress. In developing nation contexts, the Millennium Development Goals and Targets are the key barometers. Within the European Union, the Social Inclusion Process, the Open Method of Coordination on poverty and social exclusion, points in the direction of more robust and continuous tracking of trends in social inclusion with a view to more responsive policy. The Nice Summit in December 2000 adopted four objectives to combat social exclusion: facilitating participation in employment and access by all to resources, rights, goods and services; preventing risks of exclusion; helping the most vulnerable; and mobilising all relevant bodies (Stevens 2003). At the 2001 Laeken European Council, 18 initial "Laeken Indicators" of social exclusion were endorsed; these indicators were subsequently refined in 2006 as part of a new integrated monitoring framework. Every two years, European nations are to produce a National Report on Strategies for Social Protection and Social Inclusion, laying out progress toward agreed-upon goals on a variety of social indicators.

Collecting the data is one thing, and using it to inform more effective policy is another. To date, these reports and measures have not been used to their full effect. They do, however, embody an agenda to improve the measures of social inclusion, enhancing their ability to speak to performance over time in a comparative way, to improve statistical capacity within nations, to set context-specific targets for aspects of social inclusion, and to embed a trackable social inclusion effort within political processes (Marlier et al., 2007).

Work on developing more meaningful and policy-relevant measures of social inclusion continues outside of the formal policy process as well. Here, we note the English Indices of Deprivation, last published in 2007, which are reported for local areas across that country (UK Communities and Local Government, 2010). This assessed relative deprivation for all 8414 wards in England across income, employment, health, education, housing, access and child poverty. Another example, the Migrant Integration Policy Index (MIPEX), takes an immigration-focused approach to social inclusion. The most recent report was published in 2007, with the forthcoming report to include new EU member states as well as, possibly, the USA, Australia, and New Zealand, in comparative context (Geddes 2005, www.integrationindex.eu). The Chronic Poverty Report examines the question of chronic poverty and policy responses to this around the world and at the scale of selected nations (currently Bangladesh, Uganda and India).

Brazil City Statute of 2001: The Right to the City

Brazil is more than 82 per cent urban, with some of the fastest-growing cities in the world, and a rapidly expanding economy. About half the urban population lives in slums or favelas. Before the 1988 Brazilian Constitution, favela residents were denied rights and ignored within planning, policy, and governance processes. The Constitution included a chapter calling for the right to the city, the recognition of the social function of property, and the democratisation of urban management. This movement has brought about remarkable changes, crystallising in the City Statute which became law in 2001, rebuilding the national urban governance policy around the right to the city.

Few other countries have witnessed such a remarkable collaboration of actors around the need to improve the lives of the urban poor. Participants in the agenda include national and local leaders, central and local government, professionals, learning institutions, civil society and the poor themselves. The coalition has presented a World Charter for the Right to the City (Osorio, 2006); Brazil also themed the 2010 World Urban Forum, hosted by Rio, around the right to the city. Brazil is an example of the fact that measurable improvement in the lives of slum dwellers depends largely on the convergence of policy and action by a variety of actors in the direction of effective decentralisation and community empowerment. Initiatives of note include the National Cities Council which has promoted master plan development for over 1500 cities, to the Papel Passado program which has initiated property regularisation for up to one million dwellings (Brown and Kristiansen, 2009).



04.

LOCAL, REGIONAL AND GLOBAL ECONOMIES

This chapter briefly explores the issues and challenges of tying economic development to good urban growth management, reviews responses that cities and citizens are making, and suggests areas of action for further attention.

Urban growth is driven mainly by demographic forces and economic development, and efforts to manage urban growth often focus on managing the underlying economy. The options considered are: speeding up or slowing down the economy; changing industry structures; making economic opportunities more equitable; or influencing the timing and location of economic development, in favour of new urban areas or areas with unemployed, under-served, excluded or otherwise-disadvantaged households.

City growth managers have difficulty dealing with economic growth. Economic growth is a cause of urban growth and potentially a tool to moderate the rate of urban development, especially to bring economic development to new areas. In addition, economic growth can be a consequence of urban growth, bring larger markets and new business, and, in the best circumstances, creating a virtuous cycle of sustainable urban development. However, these conditions are rare, and the task before city growth managers is either to promote economic development to create business and jobs to cope with waves of urban growth, or to break the urban development planning obstacles to keep up with fast economic development, including through the informal sector of many cities.

Whether or not urban growth and economic development are in balance, in almost every city the urban development industry at large – including housing and construction, planning and development, transport and infrastructure – is a major part of the whole economy (refer to the Tehran case study).

4.1. Issues and challenges

4.1.1. The employment factor

In many cases urban growth outpaces the formation of jobs, enterprises and investment, cutting off major parts of society from jobs in the formal sector and giving rise to unemployment or underemployment in urban regions.

A main task of urban management in many cities is therefore to enable investment, enterprise development and jobs growth to keep pace with urban development, ideally matched to urban development needs at the right time and place – for example, as Cairo seeks to redistribute its metropolitan population. In other cities, the problems are of a different kind – in situations of wealthier urban growth, cities do not face a large pool of unemployed people or a dormant urban economy, but instead face shortages of skills, supply bottle-necks, and overheating and price escalation in housing and service markets.

The urban development industry in its totality – planning and administration, building and construction, infrastructure and services – is also a significant part of most urban economies. Fast urban growth has been seen by many city leaders as necessary for urban economic development, and is taken by some to be a sign of success. In one way this belief has been put into practice through the massive counter-cyclical stimulus spending around the world in the urban sector during the recent (or current) global financial crisis. Whether this has been effective or not is a matter for debate. For example, see the lim-

ited results of decades of stimulatory spending on urban public works in Japanese cities (Bruckner and Tuladhar 2010 and Fackler 2009).

4.2.1. Urban growth and the economic context

Some metropolitan planning has been criticised for being too focused on economic issues to the exclusion of other social concerns. For example, Sipe and Gleeson 2004 cite the planning of London, Singapore and Sydney in this regard. Recent discussion on how city economies can escape from relying on raw city growth for further economic development, and move onto a more sustainable path, offers some useful lessons for the integrated urban growth management of the future, and an important theme for this report. More sustainable and better-managed urban growth need not be measured by how fast the populations of cities are growing.

City regions compete among themselves globally now in ways that nation-states did in the past, and national governments understand the importance of good urban-growth management to economic efficiency, equity and national competitiveness. Countries with an active national urban policy that address competitiveness include Egypt, Finland, France, Ghana, Ireland, the Netherlands and the United Kingdom (Refer World Bank 2009 for an overview).

International cooperation in urban economic development takes place through associations such as Metropolis and the sharing of best practice through the UN-Habitat Dubai competition (also refer Campbell 2009). Inter-city cooperation also occurs through the global diasporas of ethnic and national groups and their remittances, the sought-after return of expatriate experts to their home cities, and the growing web of transnational company networks and supply chains increasingly managed from cities in emerging economies (The Economist, 2010).

However, globalisation can just as readily sap the economic vitality of an urban region as contribute to it (e.g. loss of talent through brain drain), and the task before cities is to tie economic development forces appropriate to their urban growth trajectory and needs (IEDC 2008).

City development strategies around the world tend to have common economic development themes, seeking to attract or generate investment and employment in advanced industries, create liveable environments and good qualities of life to attract and retain managers and skilled professionals, generate jobs accessible to households, match infrastructure to their changing economies, encourage local entrepreneurship and promote an attractive city identity or image (e.g. Brand Auckland).

Increasingly, technology is being harnessed for economic development, both for leading clusters of innovation and learning, and for seeking to bridge the 'digital divide' that is emerging within cities as well as between cities.

The Urban Alliance (2001, 2007) has been a leader in the practical application of local economic development planning to urban growth management, as indicated by improved access and terms for municipal credit, improved revenue streams, improved service delivery, an engaged private sector, an engaged informal sector, reduced municipal debt, economically active women, and improved access to and terms of credit within the informal sector.

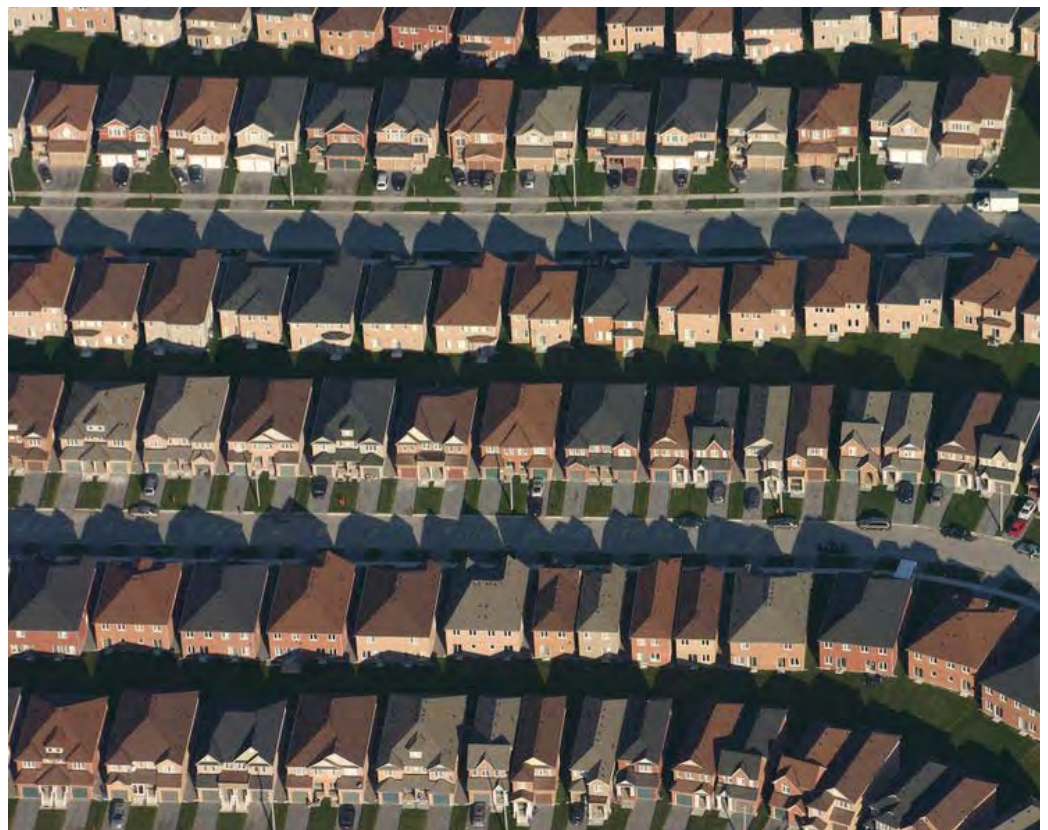
Some cities take advantage of distinctive approaches to city development and link it to their image. For example, in Atlanta transit centres have become economic nodes, Singapore for its planned moves into high value-added sectors, Portland for its economic leverage off strict urban growth management and its entry into the green economy.

A dramatic example is Moscow for managing the urban consequences of fundamental economic reforms and deep structural change in the economy. Unlike comparable regions, it took a more socially oriented approach and set itself the main task of ‘the creation of comfortable conditions for business work, private business support’ while managing a real estate boom that put it first in Europe for investment appeal (Moscow case study, 2010).

Economic development ideas can also come from close to home. In the rush to tap the springs of international and inter-regional prosperity, some economic development strategies can overlook resources from within the urban region itself. Encouraging local enterprise development (For example, through Barcelona Activa, the local development agency of Barcelona Council), removing regulatory barriers and corruption, recognising and formalising the economic contributions of the informal sector (e.g. UN-Habitat, 2007), investing in the education and skills of residents are all ways that this can be done.

For urban growth management, economic development issues and challenges lie within districts and localities, not only in the city region as a whole. Disparities in wealth and income; inequitable growth and distribution; affordable housing available only in distant jobless suburbs; poorly serviced slums; exploitative local pricing of land, housing, services and food; outright denial of local residency or land use rights; local decline and disruption of living and working environments; displacement and redevelopment under conditions not secured by land tenure; lack of access to local employment opportunities and services and a host of other expressions of wide inequalities within cities are addressed as part of urban growth management.

However great the effort, and despite many successes through this period of great city building, many of the major cities of the world remain in crisis, facing continued growth in slums, large areas of extreme poverty, and unsustainable rates of population growth and in-migration.



4.2. Responses in the economic domain

Responses to the challenge of tying urban growth management to economic development, and vice-versa, can be taken up on a region-wide basis or within cities. They can be located in particular precincts, or enlist the urban development industry itself in regional economic revitalisation. Though important to this theme, issues of financing urban development are addressed elsewhere in this report.

4.1.2. Regional economic development

Promotion of the economic development of urban regions is a well-established field of practice (Refer Blakely and Leigh 2009, one of the standard texts, and IEDC 2008 for a brief review of forty years of USA practice). However, as a tool for assisting the management of urban growth, metropolitan-wide actions are often indirect. Typically, the aims are to do the following:

- Enable economic development in a static urban region to promote productivity, prosperity or population growth to regenerate the region.
- Generate employment to catch up with the emerging and otherwise-unemployed workforce under conditions of rapid urban growth.
- Promote particular sectors of the urban economy so as to support plans for urban growth, for example Bangalore's strategy of knowledge development in its new metropolitan strategy (Chandrasekhar and Mahesh, 2009); San Jose and its aim to create 25,000 clean tech jobs and be a world centre of clean tech innovation; Dubai's planned aspiration to lead in aviation; Bilbao's regeneration based on culture and tourism.
- Upgrade the quality of business and employment to support high-quality urban growth as part of a higher standard of living.

Urban economic development may assist urban growth management across all these aims, and by many means. These include:

- **Improving the sub-national investment climate, especially reductions in bureaucratic barriers, investment attraction and retention.** In Toronto this is being done by strengthening its business climate through investment promotion facilitation and retention, city marketing and branding, city intelligence gathering and building up a coherent investment system (Clark 2010). In Gyeonggi Province/City of Suwon has a similar role at the heart of South Korea's economy, with more than 20 per cent of Korea's total GDP, despite being only one urban province. The aim is to induce foreign investment through planning and restraining urban growth (Metropolis Gyeonggi case study, 2010).
- **Encouraging business start-ups and local development.** This is seen as a way of responding to urban growth needs whether jobless suburbs, depressed inner districts, slums lacking formal economy opportunities, brownfield redevelopment for urban revitalisation to transform idle land into productive re-use (Milano Metropolis's special reindustrialisation and urban regeneration projects in deteriorating areas).
- **Developing partnerships for participation, especially business and civil society,** planning and visioning. For example, Cape Town Partnership's strategic public-private partnership for the Central City and the Central City Improvement District, an urban management organisation providing services to improve the attractiveness, performance, safety and sanitation of the area (Clark 2009 2010).

- **Enhancing real estate and infrastructure development** (New York City's large and active Economic Development Corporation). Associated processes include development of land and housing markets through land-release programming, removing regulatory barriers, assembling land including through eminent domain and through reuse of public lands, corporate leadership and comprehensive development, local housing finance assistance, social and rental housing support.
- **Increasing local investment in education, training, research and development.** This includes programs for expatriate return programs as successfully implemented in Vietnam and China (Welch and Shen, 2008).
- **Setting up learning networks among cities.** In this process cities join organisations such as Metropolis or the Global Compact Cities Programme to transfer know-how quickly, or form bilateral partnerships including sister cities, with utilitarian economic aims related to urban development. For example, Seattle Trade Development Alliance's organised and funded efforts to visit and understand benchmark cities, one at a time. (Campbell 2006).
- **Developing a green economy.** The effort and some see as the imperative, to make the cities more sustainable and resilient in the face of climate change and economic crisis, has compounded the challenge. Some cities such as San Jose (San Jose, 2010) have embraced climate prosperity or a green economy as the means of improving the quality of urban development rather than as a means of boosting growth. Udaipur has the aim to manage water-related risks to its extraordinary heritage and tourism-related urban growth management (Jain, 2009). HafenCity Hamburg, Europe's largest inner-city urban development zone has a range of social and green development initiatives (Clark 2010).

4.2.2. Economic development within cities

Economic development occurs on a complex and changing urban game-board, and the connection between economic development planning and urban growth management may be different among different urban sub-regions. Success at the local level happens in many ways:

- Providing for employment zones in urban growth plans. Traditionally, urban planning and urban-growth management make provision of land and infrastructure for economic development areas, to enable, if not ensure, local or district economic development. Most cities' metropolitan plans do that. But cities that rely on zoning or master planning this way often fail to serve the development of their region as mere reservation of land does not of itself bring about economic development (For example, refer to the conclusions of IEDC, 2008).

Tehran has systematically converted old military sites and airports to major urban commercial and urban centres, tying district economic development to repositioning of the city's economy (Tehran case study, 2010).

Barcelona's strategy for the territorial distribution of industrial activity has led to adjustments because of unpredicted consequential urban growth from trade and leisure land uses, towards a diffuse plan that its present territorial plan redesign is attempting to correct (Barcelona case study 2010).

In developing cities, unplanned economic development is a large challenge. While the National Capital Territory of Delhi is, like India, in theory, a planned economy, it has opened up to markets and accommodated a large number of unplanned settlements due to the lack of adequate developed land at affordable prices. Its Master Plan for Delhi 2021 seeks in the same plan to make Delhi a global metropolis and a world-

class city while making it safe and inclusive, environmentally and socially sustainable, seeking to resolve the issues of informal settlements and creating a robust, employment generating economy (Metropolis Delhi case study 2010).

Areas in Gwanggyo, Gyeonggi Province in South Korea, adjacent to Seoul, are being 'reborn as original and creative places' through civil investors (i.e. private sector) and international expert groups. Each of the new specially planned zones in Gyeonggi Province has a distinctive economic base, e.g. an 'education town' (Gyeonggi Case Study 2010).

In Madrid the focus has been on promoting 'the sustainable regeneration of the periphery', renovating old industrial areas as 'productive areas for innovation technology'. These include new spaces for entrepreneurs in advanced technological activities and the development of a Technological and Scientific Park in Villaverde (Madrid Case Study 2010).

- **Providing for land assembly and eminent domain.** Where land availability is tied to the capacity to assemble land, particularly through the use of compulsory acquisition, these provisions can be stronger tools for economic development. However, this is only legitimate if handled as a positive form of exclusion within the law and in accordance with human rights obligations, including to customary land-holders and undocumented settlers (For example, refer UN-Habitat 2007).
- **Establishing plans for integrated economic development and land-use.** Integrated land-use and transport development is an important subset of activities in economic development and a fairer distribution of job opportunities. Melbourne, for example, formally requires simultaneous transport and land-use planning decisions (covered elsewhere in this report). Actions to co-ordinate household location, employment/enterprise location and transport networks can create powerful economic development nodes within growing cities, preferably at large scale through the accumulation of linked activities. In turn, this creates private investment conditions for economic development and can enable public and community-service locations to be located as part of the management of urban growth.
- **Centralising metropolitan planning and authority.** Sometimes, metropolitan development may fully integrate urban growth management in the one agency. Developing one comprehensive development plan is more easily accomplished when there is one metropolitan jurisdiction. However this is rare.
- **Demarcating particular economic precincts.** Technology precincts and urban-based actions to enable innovation, science and technology can be part of, or to give rise to, urban growth. Development and redevelopment corporations, public and private, aim at business development to help match jobs with urban growth as well as brownfield redevelopment and regeneration areas and agencies, slum-upgrade areas (including sites and services). The category includes Incheon's Free Economic Zone (Incheon 2010) China's Special Economic zones (For example, in Xi'an and Suzhou), and technology development areas such as Tianjin's Economic Technological Development Area (TEDA 2010). The problem with separating off these precincts is that it either decreases liveability in the zones or extends travelling times for workers.
- **Developing a capacity for urban economic development in growth management.** This area of intervention is critical in matching economic development and urban growth management. Generally, for cities in the developing countries, efforts at official development assistance through capacity-building have been the least successful form of support (Fukuda-Parr 2002). However, strengthening capacity is perhaps the greatest task in bringing economic development planning, and especially local economic development practice, together with urban growth management to

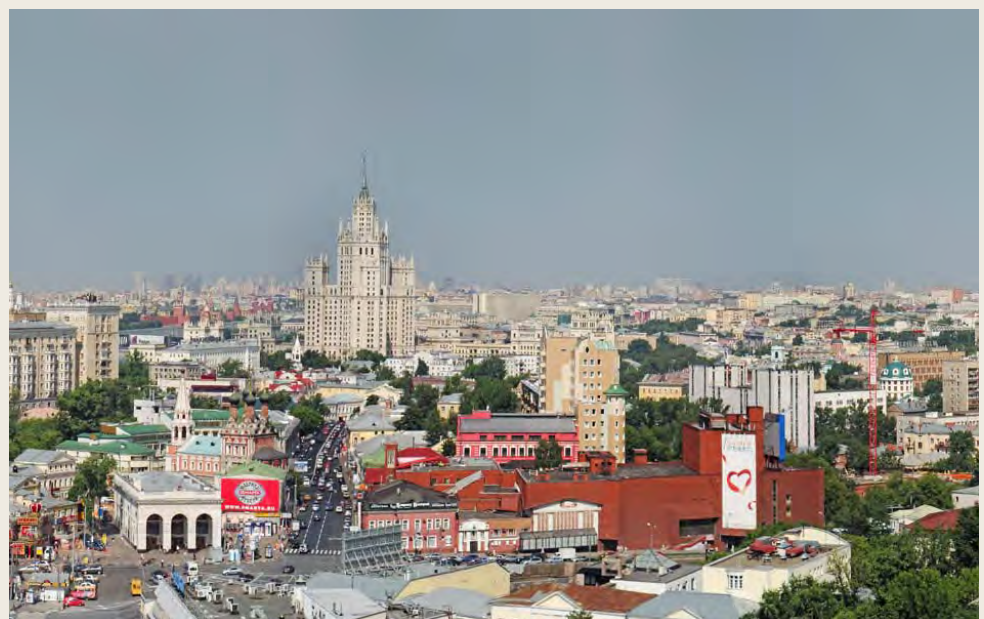
find ways to build capacity effectively. Mashhad is seeking to convert a sprawling pattern of urban development, much of it caused by unofficial and 'tainted' suburban development, into a more cohesive city, spatially and socially. To do this, the City is building its capacity to attract and create formal-sector jobs in or near transformed areas (Mashhad Case Study, 2010).

- **Using urban growth itself as an economic driver.** The current debate is over whether many urban economies are unduly dependent on urban growth, the growing tax base from land and housing development and the employment and economic muscle of the urban development and construction industries. Exemplary urban development can contribute greatly to urban liveability, as Portland, Seattle, Vancouver, Melbourne, Zurich and Geneva show in competitive rankings. Even in some of those cities – in particular in North American and Australia – urban sprawl has qualified liveability.

City of Moscow creating comfortable conditions for business

Moscow is one of Europe's major industrial and economic centres, home to an economically active population of 6.65 million people many of whom are migrants drawn to the city's economic opportunities. Recent decades of deep structural change and radical reform have changed the links between urban growth management and economic development. To strengthen its role as Russia's largest research, industrial, educational and cultural centre, the Moscow City Government set 'as its main task the creation of comfortable conditions for business work, private business support', especially attraction of investment into the innovation sphere and high technology manufacturing.

This 'intensification in development of the business support infrastructure' has led to the creation of multipurpose business centres, incubators and techno-parks, set in specific functional zones with defined development parameters, and supported by major new transport infrastructure and upgraded housing. Innovation in property financing regulations has brought a major private sector role in urban development, with Moscow leading in European ranking of real estate investment appeal (Moscow Case Study, 2010).



05.

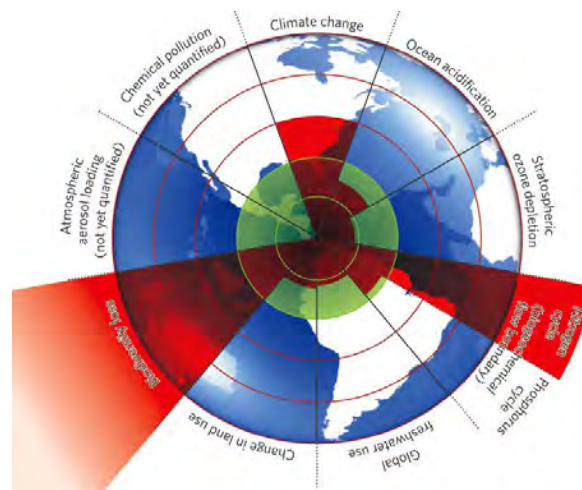
THE ENVIRONMENT

Urban growth and environmental management must be viewed and understood as inter-connected issues. History shows that economic and livelihood considerations often override environmental practises and that short-term economic and/or social gain in urban management result in long-term environmental degradation.

To gain an environmental perspective it is essential to understand human dependence on a functioning natural environmental system. People need shelter, food, and access to clean water and air to lead safe and healthy lives regardless of geography, politics, or cultural and social status. Maintaining a balance between preservation and equitable access to environmental resources presents challenges for both developed and developing countries.

Cities are dependent on natural environmental systems, but urban expansion places immense pressure on these resources. If everyone consumed as much as the highly urbanised average Australian, four planets would be needed to support them (UK sustainable precinct expert, Pooran Desai).

A Safe Operating Space for Humanity



Planetary Boundaries (Rockström et al. 2009)

'A safe operating space for humanity' outlines different biophysical processes that human action have affected and tried to define thresholds, or planetary boundaries, that we should not cross in order to keep the Earth habitable for our societies. Three of nine of these thresholds may have already been crossed:

- the atmospheric concentration of carbon dioxide causing climate change
- the extinction rate of species
- the amount of nitrogen extracted from the atmosphere for human use, affecting the global nitrogen cycle has been increasing at a dangerous rate in the recent past

The nonlinear nature of biophysical responses is often hard to grasp. Being aware of it is crucial for sound policies. In addition, indicative thresholds are presented for altering phosphorus cycle, stratospheric ozone depletion, ocean acidification, global freshwater use and change in land use.

Defining these thresholds is an ambitious exercise, as the processes are interlinked in many ways, and the ultimate limiting factors might be hard to track down. Types of targets need be convertible into political measures.

5.1. Issues and challenges

5.1.1. Population growth and urban expansion

Population growth and the continuing migration of people from rural areas to cities place immense pressures on the environment. In developing countries the combination of urban growth and entrenched poverty have resulted in the decline of natural resources, as people struggle to meet their basic needs. The lack of capital investment in infrastructure to ensure efficient use and equitable access to these resources are leading to depletion of environmental systems. In developed countries where population growth is not as rapid, pressure on environmental resources comes from high consumption levels.

Failure of physical, socio-economic, institutional, and ecological systems may lead to disastrous consequences, directly or indirectly affecting urban populations.

Urban trends: urban sprawl now a global problem

Urban sprawl, a trend long associated with North American cities, is fast engulfing many developing countries where real estate developers are pushing a world class lifestyle.

Urban sprawl in the Mexican city of Guadalajara is a good example: Between 1970 and 2000 the surface area of the city grew 1.5 times faster than the population. The same is true for cities in China; Antananarivo, the capital of Madagascar; Johannesburg, South Africa's largest commercial hub and the capitals of Egypt and Mexico, Cairo and Mexico City respectively.

In many developing countries, urban sprawl comprises two main, contrasting types of development in the same city: one is characterised by large peri-urban areas with informal and illegal patterns of land use. This is combined with a lack of infrastructure, public facilities and basic services, and often is accompanied by little or no public transport and by inadequate access roads.

The other is a form of suburban sprawl where residential zones for high and middle-income groups and highly-valued commercial and retail complexes are well-connected by individual rather than public transport.

Outcome of sprawl

Urban sprawl has a negative impact on infrastructure and the sustainability of cities. In most cases, sprawl translates into an increase in the cost of transport, public infrastructure and of residential and commercial development. Moreover, sprawling metropolitan areas require more energy, metal, concrete and asphalt than do compact cities because homes, offices and utilities are set farther apart. In many places, urban sprawl encourages new developments that cause significant loss of prime farmland. Unchecked urban sprawl also adds to environmental degradation. Such is the case around several cities in Latin America where sizeable damage has been caused to environmentally sensitive areas. These include Panama City and its surrounding Canal Zone, Caracas and its adjacent coastline, San José and its mountainous area and São Paulo and its water basins.

5.1.2. Climate change

Climate change is affecting cities. The findings of the Intergovernmental Panel on Climate Change (Fourth Assessment Report), establish a 90 per cent certainty that current global climate trends are related to human activity.

The impact of climate change on cities ranges from unpredictable weather patterns and flooding due to rise in sea level, to heat related illnesses and damage to infrastructure from increased extreme weather. In 2009, 117 million people around the world suffered from some 300 natural disasters including devastating droughts and massive flooding, costing nearly \$15 billion in damages (UN).

Climate change directly affects ecosystems that produce the food and provide the water on which cities depend, with disproportional impact on the poor and vulnerable urban populations. Extreme weather patterns threaten many cities, especially those in coastal areas, making them more vulnerable to natural hazards like sea level rise, storm surges and tsunamis.



Coastal cities with more than 1 million inhabitants situated within 100 km of the coast line. Cartographer: Hugo Ahlenius, Nordpil

Major coastal cities, many with populations exceeding 10 million, may be inundated if sea levels rise by one metre (e.g. Buenos Aires, Rio de Janeiro, Los Angeles, New York, Lagos, and Cairo Karachi, Mumbai, Kolkata, Dhaka, Shanghai, Osaka-Kobe and Tokyo). Similarly, many smaller cities and island nations are also threatened (UN-Habitat, The State of the World's Cities 2008/9).

A primary consequence of climate change will be the damage to essential infrastructure that supports movement of people, goods and services, and assures livelihood opportunities and economic benefits to increasing numbers of urban inhabitants.

Secondary implications of climate change include increased use of air conditioners during heat waves that could lead to a drop in power, halting sewage and drinking water treatment. Similarly, a lack of water, due to drought or water lines destroyed in a flood or storm, could disrupt power delivery because water is vital in cooling power grid systems.

5.1.3. The health of urban environments

Healthy natural systems equate with healthy people. The environmental setting of a city and the way it functions affects the health of its people. A major urban growth concern is the degradation of green spaces within and around cities and the ecological footprint on adjoining regions. Lack of green space within densely built cities contributes to the urban heat island (UHI) effect, where urban areas experience higher temperatures in comparison to rural areas.

The UHI effect occurs due to the predominance of impermeable and dry surfaces of buildings and pavement in urban areas that capture and retain heat. Impacts of the UHI include: increased energy consumption; elevated emissions of air pollutants and greenhouse gases due to increased energy consumption; health related issues (e.g. heat strokes); and, reduced water quality.

5.1.4. Consumption patterns

The prosperous lifestyle of cities in the developed world – and aspired to by developing countries – is not sustainable. Affluent liveable cities are characterised by high per-capita consumption levels which have led to the depletion of natural resources, and the preference for large homes further exacerbates urban expansion.

People living in urban settings are removed from the cycles of ecosystems: energy comes with a flick of a switch, water at the turn of a tap and waste is conveniently removed by the responsible authorities. Moreover, urban developments on the periphery of metropolises often lack essential transport networks. The reliance on the car as the primary mode of transport in these areas contributes to increased pollution and greenhouse emissions, extending well beyond the locality.

In many developing countries environmental resources are actually being used to support the high consumer lifestyle of developed countries. An example of this is the purchasing of agricultural land in Africa to maintain food supplies in urbanised Asian countries, at a time when many of the continent's population have no access to reliable and secure food sources.

5.1.5. Limited natural resources

Natural resources are finite and their efficient use underpins future human survival.

Water – Drinking water is a precious resource. Although water covers over 70 per cent of Earth surface, only three per cent is fresh water and of which 75 per cent is locked in ice the caps (mostly in the Antarctic).

The World Health Organization has recognised access to clean water as a fundamental human right (WHO 2010). Yet, in developing countries potable water is not only scarce, but often contaminated. This often is the result of poor water management, lack of planning and investment in infrastructure, unequal distribution of water and increasing costs of drinking water. The problems are exacerbated as cities grow and populations increase.

For cities in developed countries the challenge is to provide sustainable and affordable potable water to growing populations from increasingly declining resources. They also face supply problems associated with aging infrastructure. For example, America's ag-

ing infrastructure, with 'ruptures in aging water systems cause pollutants to seep into water supplies' (The New York Times, 15 March 2010), affects the quality and ongoing reliability of water supply.

Climate change is also affecting existing and future water supplies. In Barcelona where the city's catchments are augmented by water supplies from remote areas, new initiatives to optimize efficient use of water that encourage water saving and reuse have been introduced. These activities resulted in reducing the per-capita consumption to 113.79 liters/day. By comparison, the drought-induced Melbourne target is set at 155 liters/day. Despite this, both cities adopted desalination technology to ensure future reliable water supplies. The Barcelona desalination plant, costing €230 million, commenced operations on July 2009; and Melbourne's desalination plant, at a cost of \$3.5 billion, is due to commence operation at the end of 2011. Many cities are not able to justify such a high cost.

Urbanisation can also affect underground water. For example, the water aquifers that supply Manila are being depleted because of unsustainable consumption practices.

Land – Traditionally, cities have been built close to ports and on flood plains to allow the easy transportation of goods and services. These flood plains are generally high in nutrients making them areas of prime agricultural value. As cities expand they often consume valuable agricultural land at the urban-regional interface.

Natural resources and natural landscapes are also being traded off for urban growth. As well as agricultural land, there is a loss of biodiversity. The introduction of pollutants and non-indigenous life forms also has negative impact on endemic species and biodiversity.

In Delhi for example, much of the Aravali hills have been flattened to accommodate the encroaching urban expansion. Only a small portion of the 'Ridge' has been saved and protected, leaving a much reduced green space as the city's 'lungs' to help maintain its environmental balance.

The most significant issue for the City of Moscow is the lack of suitable urban land. Moscow is not alone. Many coastal and climate change vulnerable cities like Xiamen and Lianyungang in China resort to creating new urban expansion land through filling reclaimed marsh wetlands.

Air – Urban air quality is one of the world's worst pollution problems. Industry and motor transport are the main contributors to airborne pollution in cities. The problem is further exacerbated in expanding cities where the car is the main mode of transport. The phenomenal rise in car ownership in Delhi has resulted in increased congestion that make car exhaust the main source of air pollution. About 20 per cent of total air pollution in Delhi is estimated to be generated by industrial activity.

Carbon dioxide emissions from personal vehicles in the United States equalled 314 million metric tons in 2004. That much carbon could fill a coal train 55,000 miles long – long enough to circle the Earth twice (www.edf.org).

As well as emissions from motor vehicles, burning of fossil fuels for energy and heating contributes to poor air quality and greenhouse gases.

Air pollution affects the liveability of cities and the health of their inhabitants. And although many cities have set up centres that monitor air quality, they are yet to invest in, or introduce, pollution reduction measures.

Food, energy and other resources – Securing food for a growing population is an emerging issue across the globe and there is inadequate research to provide a clear way

forward for cities. Ensuring food supply for cities calls for environmental management far beyond the urban area. It requires whole of cycle planning extending from food production, distribution systems, sale, household food preparation and consumption to food wastage and recycling. Such degree of planning is seldom addressed.

Transporting food across the globe results in significant environmental and financial impact. These food miles (i.e. the energy and distance used to transport food) are not widely considered by consumers. Another concern is food security. London's dependence on global food supplies to sustain the food needs of the city was highlighted when the Iceland volcano erupted in April 2010. The resulting ash cloud stopped all air freight from African and other food sources.

Awareness of sustainable agriculture and local food supplies is increasing, particularly as expanding cities are taking over valuable agricultural land. In Western countries the slow food movement is striving to preserve traditional and regional cuisine and promoting farming of plants, seed and livestock in keeping with local ecosystems.

People living in slums and informal settlements with little or no infrastructure inevitably rely on existing central urban systems to gain access to public services, utilities and sometimes for basic services such as sanitation and fresh water.

Energy provision is overwhelmingly dependent on non-renewable resources and is vulnerable to 'Peak Oil' pressures where oil becomes increasingly scarce and production costly. And whilst climate change is driving the push for sustainable energy use, many governments are yet to adopt measures to reduce dependence on fossil fuels.

5.1.6. Policy implementation

The impact of urban growth on the environment is incremental, building up over a long time with many unforeseen and unexpected consequences. A major challenge for decision makers is the sustainable management of the environment.

Sustainable environmental responses require careful planning, are costly and take time to implement. In the face of strong, rapid economic and urban growth, the preference often is for simple, short term answers which do not necessarily address the continued outward expansion of cities.

Developing and implementing policies require a political commitment to make necessary changes and a willingness to engage the community in the strategic planning process.



5.2. Responses

Urban growth is often seen as antithetical to environmental values, through conversion of land and other resources into urban development, creation of living environments with low environmental standards (including especially informal settlements) production of environmental pollution, and generation of carbon-based and other atmospheric emissions that cause global warming.

In good environmental practice, this need not be so. In many countries per capita carbon emissions are lower in cities than across the country (New Scientist, 2010). There are urban growth management responses around the world that have conserved resources, improved environmental standards, mitigated the worst of environmental impacts, and helped create resilient environments that can adapt to the uncertainties of climate change, resources depletion and environmental hazards.

These responses include the following:

- Taking a strategic approach to integrated planning and management
- Encompassing urban growth management into a holistic view of sustainability
- Engaging with climate change mitigation and adaptation
- Empowering relevant communities and interest groups through participation and leadership
- Building up organisational and community capacity and resilience

5.2.1. Integrated environmental and urban development planning and management

Cities may take a strategic approach to the management of environmental resources, of which urban growth management is an integral part, and put into practice policies, programs and projects for integrated urban growth and environmental management. For example embedding good practice in the selection of land for conversion to urban use, the choice of standards, the provision of infrastructure and services, and the development of communities with appropriate environmental conditions and protections are hallmarks of integrated strategic urban development.

Reducing cities' ecological footprint – or at least the rate of their increase – has become an aim of urban growth management. Cities are recognised as a part of the environmental landscape, and urban growth management a means of conserving and wisely using environmental resources. Urban growth can place immense pressure on existing and strained environmental systems if not well managed. City development strategies increasingly strive to be contained within environmental catchments such as bio-regions and water catchment basins.

Governments of sprawling cities, communities and companies take many actions to seek a more compact form, often also involving higher densities. Other cities such as Cairo, and many others with large dense slum areas, respond by lowering overall urban densities. In either case, limiting urban expansion outwards can make better use of land resources and protect natural resources. City growth can be physically limited this way through legislated urban growth boundaries, non-urban green belts and the quarantining of development in certain areas.

The response is to choose land for new urban development on integrated principles to minimise negative impacts and maximise environmental quality. In this manner, land categories exempt from urban development include protection and conservation areas, steeply sloping land, contaminated land, hazardous areas (especially conflict areas near cities), flood liable land and land subject to sea level rises, areas facing wildfire risk, areas

of heritage significance, valid non-residential institutional commitments, sacred lands, rare ecological habitats, water catchment areas, prime agricultural land, mine subsidence areas, national and other significant park, and key open space and recreational areas.

Tehran's green band

In Tehran, urban growth will have to respect a green band around city's boundaries and avoid any construction on the conservation areas indicated in the urban plans. New satellite cities around Tehran will help keep the equilibrium of the settlements within the metropolitan area. The priority has been given to the four new cities of Pardis, Parand, Hashtgerd, and Andisheh, and each situated at a distance of more than 30 to 40 kilometres from Tehran.

Limiting outward urban expansion can lead to urban consolidation and higher densities but it may require retrofitting existing settlements. Recycling the city to optimise resources, and using already developed resources and innovative investment instruments are practiced by many cities.

Opportunities for restructuring and retrofitting into environmentally compatible and resource efficient urban areas can be as diverse as the communities involved, and, in varying environmental and cultural circumstances, can foster new prototypes. The favelas of Rio de Janeiro, the vast US suburban 'carburbs' and the historic cities of Europe and Asia offer very different scenarios for these.

5.2.2. Strategies for sustainability

Urban growth management has long sought to create sustainable urban environments and there is a large body of experience for cities to draw upon to inform their responses. Though this section focuses on responses linking environment and urban growth management, sustainability encompasses economic and social dimensions as well, without which environmental sustainability cannot be pursued.

For example, responses that take the form of public-private partnerships often take a whole-of-project life approach to urban development, such that it is more economic to spend to develop low-maintenance environments even if more costly up-front.

One common response is to ensure city monitoring systems provide 'triple bottom line' reporting (economic, social, and environmental) to city management and political leadership, so that environmental factors are not compromised by attention to a single financial bottom line.

The 'greening' of cities – their buildings, communities and regions – is a major area of response. For example Sweden's ministry of Culture sees urban growth and cities as catalysts for an eco-smart society. 'Urban development is dynamic and embodies human aspirations of experimentation and innovation.' New forms of development are emerging from individual buildings to city regions.

Green buildings: In the Bronx of New York City, a public housing project on the roof of a six story block, 1000 m², will operate as a cooperative, meeting 100 per cent of the fresh vegetable demand for 400 people while retaining 750,000 litres of stormwater per year, capturing 225000 kWh of waste heat, and mitigating 80 tons of CO₂ annually. If an optional grid-tied solar photovoltaic system is installed, the net electrical footprint will be zero (Caplow, 2010)

Zero Emissions Neighbourhoods (ZEN): This program is a US\$6 million equivalent government funding grant program designed to shape the future of sustainable residential development in Melbourne and Victoria. Four to six zero emission communities will be developed over four years. They will showcase innovative water, waste, transport and energy solutions, such as local renewable energy supply, sustainable master planning and design, onsite recycled water and smart meters to help manage energy usage. ZEN neighbourhoods will include sustainable infrastructure such as solar energy, recycling facilities, walkable streets and bicycle paths. More information is available at www.resourcesmart.vic.gov.au/zen

Carbon limiting communities: The Beddington Zero Energy Development (BedZED) was completed in 2002 and is the UK's largest carbon-neutral eco-community – the first of its kind in the country. BedZED is a mixed-use, mixed-tenure development that incorporates innovative approaches to energy conservation and environmental sustainability. The design is to a very high standard and is used to enhance the environmental dimensions, with strong emphasis on roof gardens, sunlight, solar energy, reduction of energy consumption and waste water recycling. Results based on monitoring results in 2003, after the first year of occupation were the following: space heating reduction at 88 per cent, fossil fuel consumption reduction for private car use at 65 per cent, hot water 57 per cent, mains water 50 per cent and electricity reduction 25 per cent.

Eco-cities: China is pioneering the establishment of low-carbon eco-cities. Four types of low carbon cities have been identified:

- Technological innovative-orientated eco-cities (solar energy technologies)
- Liveable eco-cities (Green and open space, green infrastructure)
- Evolutionary eco-cities (co-evolution of humans and nature in urban areas)
- Post-disaster reconstruction eco-cities (post earthquake, flood)

The opportunities and techniques used in these cities may be transferable to urban expansion elsewhere, from new town growth developments to retro-fitting existing cities.

Regional eco-cities: Dongtan, 15km north of Shanghai, aims to be the world's first sustainable city with zero greenhouse gas emissions, and has the potential to show advanced sustainable technology and new modes of urban development to the world.

The city is being created with an ecologically sensitive design that provides modern living conditions for up to 500,000 people. It has been designed to function so that the elements of organic waste, biomass, water and energy technology work with building design and urban layout to create an ecologically progressive development.



Project benefits include energy consumption at 66 per cent savings per annum, load supplied by 100 per cent renewable energy, recycled solid waste up to 80 per cent, transport system pollution free fuel cell and other zero carbon technologies.

Masdar City, 17km southeast of Abu Dhabi, is a planned carbon-neutral city being built on six square kilometres and it will be home to 50,000 people and 1,500 businesses, primarily commercial and manufacturing facilities specialising in environmentally friendly products, and more than 60,000 workers are expected to commute to the city daily.

The city will rely entirely on solar energy and other renewable energy sources, with a sustainable, zero-carbon, zero-waste ecology. The US\$22 billion project will take eight years to build and the first phase was completed in 2009. Results to date are impres-

sive: zero carbon emissions, zero waste, 50 per cent reduction in water consumption, 80 per cent reduction in water recycling and a fossil-fuel-free, solar-powered personal rapid transit system.

Renewable resources: With the prospect of oil production peaking, the integration of renewable and less environmentally damaging energy sources is becoming essential. New energy supplies using solar power, wind power and thermal power will be a greater part of urban infrastructure and integrated with urban growth management. City leaders are embracing technology and innovation to provide low energy solutions, design sustainable cities and resilient communities.

Understanding the lifecycle of environmental resources is leading to the recycling of waste materials and water.

Delhi's renewable projects

A number of renewable projects are being implemented:

- Solar lighting is being encouraged in parks and gardens
- Reusing treated wastewater discharged from sewage treatment plants for gardening and cooling purposes
- Making use of bio-degradable kitchen solid waste for vermi-composting at community level and utilising compost for gardening purpose
- The Department of Environment has supported various schools for purchasing paper recycling equipment
- About 900 tonnes of the 6800 tonnes of waste generated per day by the city is being turned into compost in three compost plants
- The Delhi Pollution Control Committee has granted consent for generation of power from garbage (waste to energy project)



Concern for the landscape of cities is also changing in a positive way. Natural areas of bio-diversity are being protected, reinstated and integrated with urban expansion. Melbourne has a policy of no net loss of native vegetation requiring development to secure areas for introducing bio-systems into cities.

In addition, new ideas are emerging and being adopted such as ‘the city as a farm’ and green buildings that control their environment. New dispersed resource systems and localised energy is be utilised such as solar homes, rainwater tanks and local food, as opposed to singular centralised systems.

5.2.3. Influencing climate change and adapting to it

Cities are major areas of contribution to carbon and other emissions causing climate change, whether higher than rural areas or not. Recognising the role of urban growth in contributions to global warming, cities around the world have been at the forefront of actions to mitigate or adapt to climate change. Therefore urban growth managers are seeking to make the best responses to climate change, with a proliferation of programs and projects, some already successful, but most still forming.

Many of the responses in the area of urban growth management are continuations of, or at least consistent with, measures taken for environmental quality improvement, cost containment or other reasons, but the unprecedented scales of potential climate change and global attention to it have given new urgency to these responses.

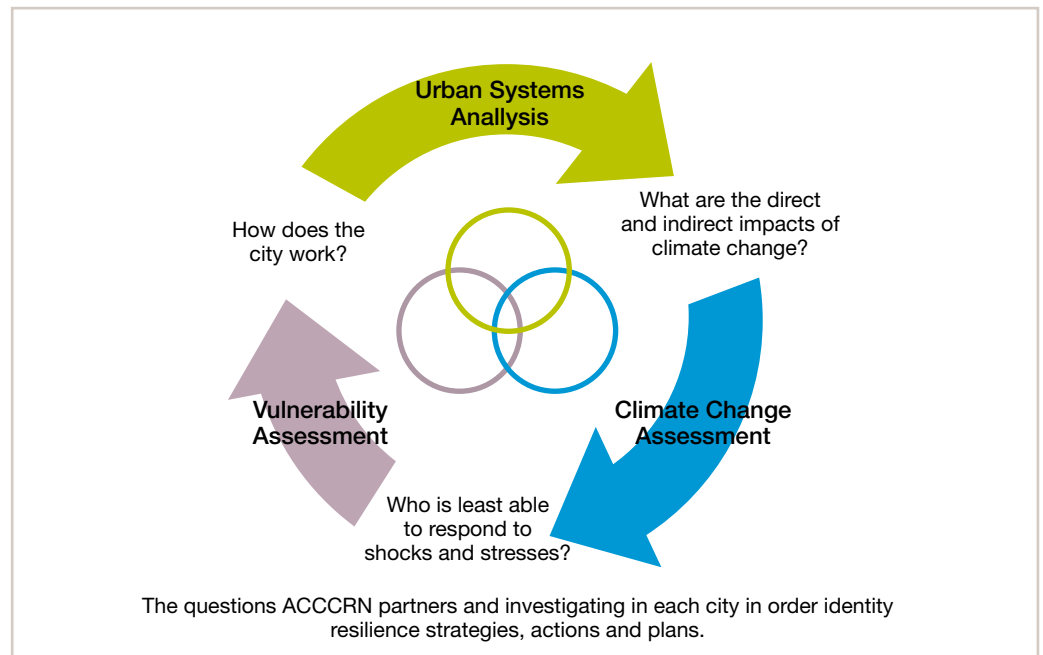
a) Mitigation – Responses aim to mitigate climate change through creating more resource-efficient new urban development through subdivision design, the use of technology, stricter building standards – including mandatory green performance ratings – and, in those cities that sprawl, more compact forms of urban development. Such measures reduce the demand for energy at source and in households or business use, thus reducing emissions or the rate of growth in emissions.

Many cities have mitigation responses already in place. They include:

- Future urban growth planned within increased physical risks to health, safety and wellbeing
- Resource efficient development that works with and optimises localised resources and renewable energy
- Strengthening and replacement of existing infrastructure
- Avoiding future retrofitting – more efficient and easier to design communities and buildings in an energy efficient way from the beginning
- Reducing oil dependency
- Distribution of water – diversity of distribution leading to resilient supply systems - whole of catchment management
- Transport integrated with community – reduction of car dependency – Transport Orientated Design (TOD) walkable, public transport focused mixed use neighbourhoods
- Urban heat mitigation

The Asian Cities Climate Change Resilience Network (ACCCRN) recognises that environmental responses to climate change should include processes not just plans. It utilises a particular analytic process to prepare city strategies.

ONE APPROACH TO DEALING WITH THE URBAN CLIMATE CHALLENGE



An urban systems analysis is undertaken to understand how the city is functioning at the moment. The impacts of climate change are assessed. Areas, urban services and populations most at risk and vulnerable are determined. A vulnerability assessment, then, determines how the city could work. Strategies, plans and actions are then evolved to deal with climate change.

Cities of the Future program is a collaboration between the Norwegian Government and the 13 largest cities in Norway that encompasses almost half of the country's population (Oslo, Bærum, Drammen, Sarpsborg, Fredrikstad, Porsgrunn, Skien, Kristiansand, Sandnes, Stavanger, Bergen, Trondheim and Tromsø).

The aim of Cities of the Future (2008-2014) is to reduce greenhouse gas emissions and make the cities better places to live. This is achieved by making more use of available resources and developing effective measures to encourage greener cities. Focus is on: Land use and transport, consumption and waste, energy and climate change adaptation.

City municipalities are encouraged to share their climate friendly city development ideas with each other and with the business sector, authorities, industry, the general public, the regions and the government. They come together to participate and cooperate on all levels and this contributes to the development of practical policies. In due time, the programs will function as binding agreements between the government and the chosen cities and will help fulfil plans. www.citiesofthefuture.no

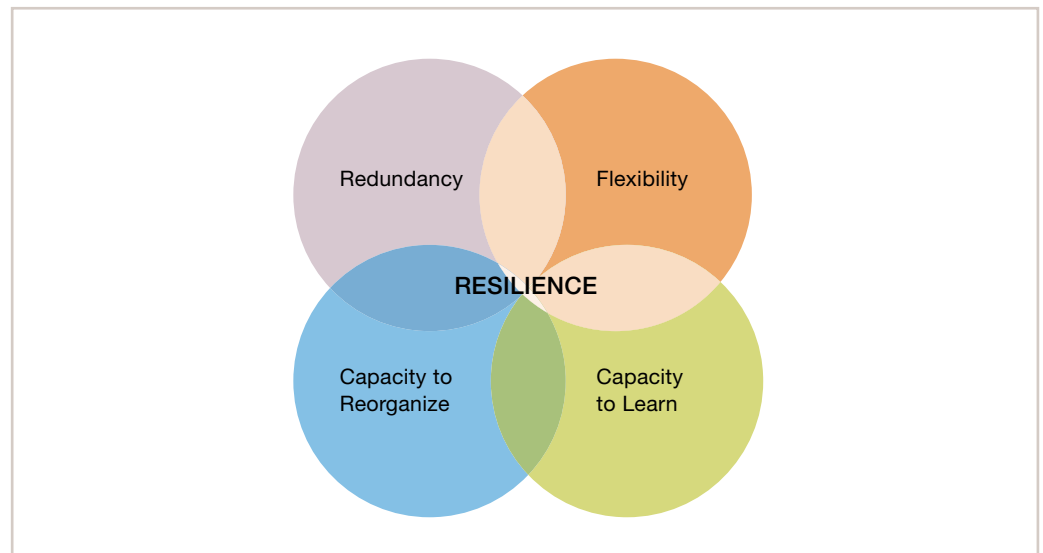
b) Adaptation – Responses in urban growth management aiming to adapt to climate change include restrictions on urban development in areas prone to sea level rise and flooding, along with plans to install protective infrastructure and / or relocate urban areas.

Resilience is essential to climate change adaptation. Resilient cities create, enable, and sustain the services and institutions required for basic ongoing survival and are characterised by their ability to generate new opportunities for their residents. They avoid relying on solutions that depend on anticipating specific hazards, and instead take a

broader, integrated approach.

A resilient city is able to withstand a variety of challenges if the following elements are incorporated into urban systems and the ways in which people construct and maintain those systems.

ELEMENTS OF URBAN RESILIENCE



Adapted from the Resilience Alliance

Redundancy is featured when several urban systems serve similar functions and provide substitutable services when another system is disrupted, such as using multiple energy sources with a variety of pathways distributing power to all parts of the city. It reduces a city's vulnerability and can also build social capacity. For example, training individuals in dispersed neighbourhoods in basic health and emergency response can assist for an extreme event, when fragmented neighbourhoods can provide immediate triage and basic medical services until transportation and communication systems are restored.

Flexibility is important for resilient cities to have the ability to absorb shocks and slow-onset challenges in ways that avoid catastrophic failure if thresholds are exceeded. In the event that a system or institution fails, it does so with minimal impact to other systems. Flexibility can include such things as a diversified economic base not solely dependent upon agriculture or a single industry, or actions like coastal ecosystem restoration to serve as a buffer against flooding, rather than relying on levies.

Capacity to reorganise covers the ability to change and evolve in response to changing conditions, including the ability to reverse the processes of degradation. It also means recognising when it is not possible to return to previous methods, with a focus on the continual effort to find new solutions and strategies to changing challenges. This can include, for example, the capacity to introduce new structures, organisations, and land use measures in response to increased risk of wild fires around the fringes of cities during hot, dry weather.

Capacity to Learn encompasses the ability to internalise past experience, respond to them, and avoid repeating mistakes to ensure that future decisions are made with appropriate caution and forethought. It could include, as an example, explicit efforts to document and integrate lessons from previous disaster management efforts into future planning, or to monitor watershed conditions to ensure adequate wetland and floodplain areas are maintained to buffer floods.

Makati City

Aware that the bulk of efforts towards addressing climate change impacts should shift to adaptation measures, Makati City embarked on various projects including:

- Establishing a comprehensive Disaster Risk Reduction Program, institutionalised through the Makati Rescue, Makati Control Communications Centre (C3) and the Makati Command Centre.
- Commenced a Risk-Sensitive Urban Redevelopment Planning Project, which aims to modify and lessen the physical, social and economic vulnerability of the city to earthquake-related hazards through comprehensive land use planning and mainstreaming of a Disaster Risk Management Plan (DRMP) at the local government level.
- Adopted a city-to-city sharing initiative on disaster risk reduction with Kathmandu and Quito.
- Continuously invests in facilities towards disaster risk management, setting human security at the forefront of its development agenda.
- Conducted capacity-building programs to improve emergency management and response.
- Relocating 1500 families of informal settlers to city-funded, decent housing, strategically located outside the city jurisdiction.
- Continuous monitoring of the ambient air quality through the H.A.N.G.I.N Project aimed at localising environmental health monitoring system, as well as increasing the capacity and capability of local government units to draft appropriate policies and plans that integrate pollution reduction and health aspects.
- Regular de-clogging of the city's drains, waterways and canals is undertaken to prevent the aggravation of flooding hazards during rainy seasons.

5.2.4. Exercising leadership and empowering communities

Governments have a role in setting the approach to the management of environmental resources and can introduce policies aimed at reducing the environmental impact of cities. They can promote long-term environmentally sustainable planning and move beyond short-term political cycles. In addition, governments can provide leadership with community engagement, education and in support of innovation.

It is crucial to engage the wider community, educate people and aspire to a culture in which people and businesses understand the value of the natural environment. Communities can also take empowered roles within a city's society to help find their place in the environment. The idea of what is liveable can then equate to sustainable, and behaviours of excessive consumption can be addressed.

Examples relevant to urban growth management include encouraging people to walk and cycle rather than drive, and structuring communities with walkable access. As well as having the least impact on environmental resources they also offer health and social benefits. Rainwater tanks can be introduced, locally grown food relied on, and energy-saving shower heads utilised. Effort can be spent on changing transport to electric cars and reducing vehicle exhausts, or using natural gas to reduce dependency on oil or coal.

City leaders must embrace innovation to design sustainable cities and resilient communities. Innovation has already brought energy saving light bulbs, solar homes and other green products that should become commonplace.

Cities that have effective community engagement in environmental planning and urban growth management so that development plans and environmental standards are underpinned by public support, voluntary actions, compliance and trust.

5.2.5. Capacity strengthening for environmental planning and urban growth management

Cities that consciously build up the organisational and personal capacity of its people – skilled workers, empowered communities, effective planning and development organisations, well-established companies and adequate training and education programs – are better able to manage urban growth consistent with environmental aims.

Cooperation and sharing: Cities can benefit and gain insight from examining approaches to environmental resource management taken by other cities around the world. The exchange of information and cooperation allows environmental challenges to be addressed more effectively.

Strategic partnerships also offer greater intellectual input and pooling of limited resources and are important in fostering regional networks for exchange of information.

The online digital world now provides the opportunity to share information quickly on a global level, and then act on what we learn in a local Indigenous way to preserve biodiversity.

In addition, cities can learn from others and the past by avoiding the same mistakes and introducing innovative new ideas and best practice in planning and managing environmental resources in their cities. Urban development in emerging economies can aim for better cities than in the developed countries of the past, and cities in developed countries can aspire to more sustainable urban regions. Global companies such as IBM are tying their strategies to the business of enabling smarter, better monitored cities to grow around the world.

Delhi has introduced city management through a system known as the Bhagidari (partnership) system. In this, a number of civil society groups like the Resident Welfare Associations, Market and Traders Associations, Industrial Associations and NGOs have been empowered to take joint action with the various government agencies on issues such as water management, rainwater harvesting, water and energy conservation, power distribution and solid waste management. In addition to Bhagidari, three other significant initiatives of the Government of the National Capital Territory of Delhi (GNCTD) are assuring the right to information, with any person being able to approach any one of the 119 departments of the GNCTD to seek information and make copies of documents; redress of public grievances; and the implementation of e-governance.

Bogotá recognises the benefits of urbanisation

Raised standards of living do not always have to equal material consumption. Bogotá has recently reviewed its urban planning to ensure resources such as education, libraries and open space are a part of the community. This has been achieved through making communities more walkable and providing greater access to public transport where large portions of the population have no cars. This kind of community engagement and shared consumption can only occur in an urban setting.



Measuring the performance of integrated urban management and environmental planning requires adequate organisational capacity. The former Metropolis Commission 5 promoted performance measurement techniques as an integral part of the strategic planning process, citing an increased awareness of performance measurement techniques amongst leaders and noting that most cities have introduced specific indicators to determine the breadth and depths of the environmental issues they face.

This provides city managers with reliable information to deal with urban environmental challenges, to set priorities and reach objectives, and enables them to measure the efficiency of their programs and initiatives. It also enhances government accountability demanded by policy makers and the public.

However, comprehensive environmental systems are required to measure and monitor city performance and the quality of life in urban growth areas. Established sets of city indicators with an internationally standardised methodology allow for information sharing and the exchange of lessons to be learnt by cities worldwide.

Global City Indicators Program

This web based monitoring system (www.cityindicators.org) is structured around twenty-two themes that measure a range of city services and quality of life factors. Cities that become members measure and report on a core set of indicators through a web-based relational database.

City services

- Education
- Energy
- Recreation
- Fire Emergency Response
- Governance
- Health
- Social Services
- Solid Waste
- Transportation
- Urban Planning
- Water and Waste Water

Quality of life

- Civic Engagement
- Culture
- Economy
- Environment
- Shelter
- Social Equity
- Subjective
- Well-Being
- Technology and Innovation

LESSONS LEARNT

Urban growth is manageable. It is not easy, it is not always politically popular, but it can be achieved. This report and the case studies with it show that. Many cities in developed countries have taken urban growth management as the supervision of suburban development. It no longer fits the task of managing the world's exploding urban regions.

The suite of initiatives under development and in application to effect urban growth management applies to cities with rapid, slow or even declining growth. Urban growth management is a dynamic part of public policy, private practice and community action around the world, as the most severe impacts of rapid unplanned growth move through the global system of cities.

The role of leadership cannot be underestimated. The early, high-level plans that give rise to good urban growth management frameworks come from leadership that includes the many groups with an interest in realising the visions that city growth seeks. The long-term path-dependency of urban development (where once we make a decision we cannot go back), means that in accommodating urban growth, good decisions at the point of initial urban development are vital. Urban form changes slowly, even though we can adopt new urban land uses to old urban forms.

This lesson underlies the need for resilience in urban growth management. There are new ways to 'future-proof' cities, to build in adaptability, to be efficient in managing risk and in the use of the vast resources that go into making urban settlements. Single-issue solutions are no longer possible: we need to think of the city as an ecosystem and manage the many interactions that provide solutions for as they will live in or changed urban areas.

Technology is often mistaken in urban development, either because city growth managers fail to recognise new ways that people and organisations use urban settings (for example, local energy generation and water harvesting and re-use methods) or because ambitious city leaders seek to implant new expensive systems when a proven simple one will do (for example, sophisticated traffic management or GIS systems). However there is no doubt that our cities will be more instrumented, with urban growth management including real-time monitoring and assessment, and that technological advantages can give cities a competitive edge.

Promoting urban growth can be an unsustainable treadmill. Many cities have no choice but to cope with a tide of population growth as best they can. But those that promote urban growth for its spin-off economic benefits can be 'unleashing a tiger', because the management task often becomes increasingly difficult and slowdowns or fluctuations remove the growth dividend the economy has relied upon. As quoted in the report, 'for wealthy cities, the time has come to question whether the goal of growth, particularly economic growth, still serves its purpose'. A governance focus on growth to the exclusion of other local development priorities can have adverse effects on quality of life for those currently living in the city. The lessons learnt are that each city has to find its own sustainable balance between managing urban growth and pumping up growth beyond its own capacity to manage.

The most liveable cities are not the most sustainable. Reviewing cities at many stages of economic and social development brings us face to face with a stark reality: attrac-

tive as those cities ranked as most liveable might be, the world cannot afford to have its growing population consume the resources and emit the wastes that these cities do. They are simply not sustainable; indeed these cities too will need to reduce their ecological footprints. Rather, many of the best lessons for urban growth management come from cities in emerging economies that are quietly improving the quality of life of their residents and visitors within reasonable resource limits and on a sustainable basis.

There are still massive gaps in urban infrastructure and services and in too many cities these gaps are growing. The flood of migration to cities, the betterment of living standards and further rising expectations cause demand for urban infrastructure and services still to outstrip supply, despite good case studies brought before this Commission. As indicated in the infrastructure and services chapter, the massive scale of investment demand for infrastructure will not diminish. Not only does this mean the further mobilisation of finance and real resources to provide for future generations, but new ways of financing city growth, decentralised means of meeting local demands, and smart use of new and appropriate technologies.

Decentralisation is important: infrastructure and service provision may be incremental, local and through innovative methods. Strategies to build social cohesion ‘from the ground up’ – micro-scale economic development, civic participation, education and infrastructure activities – are key to creating solutions that work for those most closely affected, those most in need of new services, and those who are marginalised from the benefits of life in the city. However, as shown in the infrastructure chapter, ‘the centre still matters’: urban infrastructure does demand strategic planning and co-ordination, and decentralisation does raise a host of co-ordination questions. An exemplary lesson learnt in Melbourne, for example, is that urban growth management, and in particular planning for urban expansion, must ensure that transport investment, land use and economic development decisions should occur as much a part of the same holistic process as possible.

Social inclusion and local or stakeholder empowerment mark successful urban growth management. Social inclusion policies and approaches represent a promising way to address the challenges posed by unequal access to wealth and other resources, recognising that these are not just problems of poverty but crucial to the wellbeing of the whole community, rich and poor. The engagement of local communities is a key to successful social inclusion policies. Cities that are able to engage inhabitants in urban growth management have more success than those with good technical solutions alone.

Participatory authority is linked to leadership; they are different but closely related features. This has important implications for metropolitan planning, where adaptive city development strategies that take account of changing needs and conditions can provide a more resilient basis for urban growth management than comprehensive master plans drawn up by remote technical experts. Examples at the local level include the Savitri Marketing Institution for Ladies Empowerment (SMILE) initiative in Pune which has spread to many other communities in India, and at the national scale the Papel Pasado program in Brazil which has initiated property regularisation for up to one million squatters’ dwellings.

No one form of governance best provides for urban growth management. Criteria for choosing the right levels of responsibility are widely known – subsidiarity and local responsiveness, economies of scale, externalities, equity, access and accountability – but the most effective governance frameworks for urban growth management are characterised by multi-sector partnerships of government, private sector and civil society such as practiced by the UN Global Compact Cities Programme.

A pervasive lesson for urban growth management is that its strongest tools are often indirect: the clarity of land use controls like zoning can be overshadowed by the unforeseen consequences of fiscal and tax decisions, for example, and the more that city managers can understand these consequences the more powerful their toolkit.

Cities that learn from others manage growth better than cities that go it alone. Many of the successful case studies reviewed by the Commission were marked by an openness to adapt lessons from elsewhere to local circumstances. Cities such as Bangalore make knowledge partnerships a key plank of their metropolitan strategies. The same applies to lessons from urban economic development: new means of encouraging investment, enterprise development and employment in cities, too often missing parts of urban growth management, can now call upon a bank of transferable ideas and experiences aided by the movement of key staff and advisers and by the exchanges of city networks such as Metropolis. But cities are so different that solutions are not transferable. Learning from others should not blind us to the power of local solutions to city growth problems: so often, it is the stakeholder commitment through the search for effectiveness that brings the best result, rather than the imported solution off the shelf.



APPENDICES

Appendix A: OECD Principles for International Investor Participation in Infrastructure

I. Assessing the need for public subsidies in infrastructure

Principle 1: No infrastructure project should be embarked upon without assessing the degree of subsidisation that will be needed to render it financially viable, the source of financing the subsidies and contingency plans for dealing with adverse financial outcomes.

II. Deciding on public or private provision of infrastructure services

Principle 2: The choice by public authorities between public and private provision should be based on cost-benefit analysis taking into account all alternative modes of delivery, the full system of infrastructure provision, and the projected financial and non-financial costs and benefits over the project lifecycle.

Principle 3: The balance of responsibilities between the private and public side should be considered in light of the public interest and reflect the amount of the project risk that the public authorities expect their private partners to assume in light of the model chosen for international investors' involvement in the project.

Principle 4: Fiscal discipline and transparency must be safeguarded, and the potential public finance ramifications of shifting responsibilities for infrastructure to the private sector fully understood.

III. Enhancing the enabling institutional environment

Principle 5: A sound enabling environment for infrastructure investment, which implies high standards of public and corporate governance, transparency and the rule of law, including protection of property and contractual rights, is essential to attract investors and maximise the benefits of their presence.

Principle 6: Infrastructure projects should be free from corruption at all levels and in all project phases. Public authorities should take effective measures to ensure public and private sector integrity and accountability and establish appropriate procedures to deter, detect and sanction corruption.

Principle 7: The benefits of international investor participation in infrastructure are enhanced by efforts to create a competitive environment, including by subjecting activities to appropriate commercial pressures, dismantling unnecessary barriers to entry and implementing and enforcing adequate competition laws.

Principle 8: Access to capital markets to fund operations is essential to private infrastructure investors. Restrictions in access to local markets and obstacles to international capital movements should be phased out.

IV. Building capacity at all levels of government

Principle 9: Public authorities should ensure adequate consultation with end-users and other stakeholders including prior to the initiation of an infrastructure project.

Principle 10: Authorities responsible for privately-invested infrastructure projects should have the capacity to manage the commercial processes involved and to partner on an equal basis with their private sector counterparts.

Principle 11: Strategies for private investor participation in infrastructure need to be un-

derstood, and objectives shared, throughout all levels of government and in all relevant parts of the public administration

Principle 12: Mechanisms for cross-jurisdictional cooperation, including at regional level, may have to be established.

V. Making the public-private cooperation work

Principle 13: To optimise the involvement of private investors, public authorities should communicate clearly the objectives of their infrastructure policies.

Principle 14: There should be full disclosure of all project-relevant information between public authorities and the private investors, including the state of pre-existing infrastructure, performance standards and penalties in the case of non-compliance. The principle of due diligence must be upheld.

Principle 15: The awarding of infrastructure contracts or concessions should be designed to guarantee procedural fairness, non-discrimination and transparency.

Principle 16: The formal agreement between authorities and private investors should be specified in terms of verifiable infrastructure services to be provided to the public; it should contain provisions regarding responsibilities and risk allocation in the case of unforeseen events.

Principle 17: Regulation of infrastructure services needs to be entrusted to specialised public authorities that are competent, well-resourced and shielded from undue influence by the parties to infrastructure contracts.

Principle 18: Occasional renegotiations are inevitable in long-term partnerships, but they should be conducted in good faith, in a transparent and non-discriminatory manner; whenever unilateral changes affect the financial equilibrium of a contract a case for compensation could be made.

Principle 19: Dispute resolution mechanisms should be in place through which disputes arising at any point in the lifetime of an infrastructure project can be handled in a timely and impartial manner.

VI. Encouraging responsible business conduct

Principle 20: Investors should participate in infrastructure projects in good faith and with a commitment to fulfil their commitments to the best of their ability.

Principle 21: Investors, their subcontractors and representatives should not resort to bribery and other corrupt practices to obtain contracts, gain control over assets or win favours, nor should they accept to be party to such practices in the course of their infrastructure operations.

Principle 22: Investors should contribute to strategies for communicating and consulting with the general public, including vis-à-vis consumers, affected communities and corporate stakeholders, with a view to developing mutual acceptance and understanding of the objectives of the parties involved.

Principle 23: Investors who are involved in the provision of vital services to communities need to weigh the broader consequences of their actions against purely commercial motives and work, together with public authorities, to avoid and mitigate socially unacceptable outcomes.

Principle 24: Investors in infrastructure should observe commonly agreed principles and standards for responsible business conduct such as the OECD Guidelines for Multinational Enterprises.

GLOSSARY

ADB	Asia Development Bank
ALGA	Australian Local Government Association
CEC	Commission of European Communities
COAG	Council of Australian Governments
EU	European Union
FDI	Foreign Direct Investment
GFC	Global Financial Crisis
IEDC	International Economic Development Council
MDGs	Millennium Development Goals
MEDSTAR	Metropolitan Development Strategy for Arriyadh
MIPEX	Migrant Integration Policy Index
OECD	Organisation for Economic Development and Cooperation
PPPs	Public Private Partnerships
RMIT	Royal Melbourne Institute of Technology
SIF	Social Inclusion Framework
SMILE	Savitry Marketing Institution for Ladies' Empowerment (Pune, India)
UHI	Urban heat island
UCLG	United Cities and Local Governments
UN	United Nations
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNGCCP	United Nations Global Compact, Cities Programme
URA	Urban Redevelopment Authority (in Singapore)
WB	World Bank
WEF	World Economic Forum

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Urban
Growth**

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