The Urban Nexus: Towards resource efficient and integrated solutions for cities in Asia and the Pacific

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UNITED NATIONS
ESCAP
Economic and Social Commission for Asia and the Pacific

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STRUCTURE OF THE PRESENTATION

- ***The Big Picture****: context, urban growth & its spatial patterns, impact on resources, limits of current approaches, opportunities for integrated planning*

- ***Key Challenges****: managing ecosystem resources holistically & efficiently, renewing planning & government frameworks*

- ***Seizing our opportunities****: towards an urban nexus framework*

UN-ESCAP and the Asia-Pacific region

- 53 members of UN-ESCAP
- 9 associated members

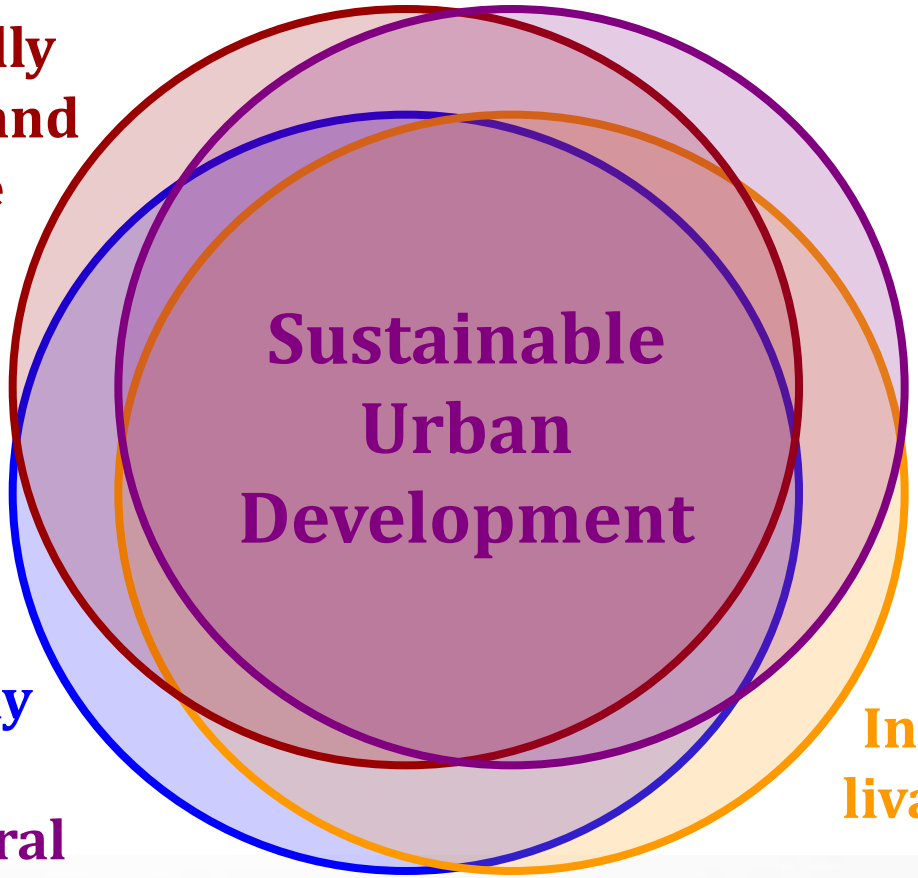
- 58% percent of world's population
- 60% of the world's poor population
- 40% of the world's land area

- Rapid economic transition but great inequality
- Increasing role of urban areas in economic growth
- Significant inefficiencies in resource use

As the regional development arm of the UN ESCAP fosters:

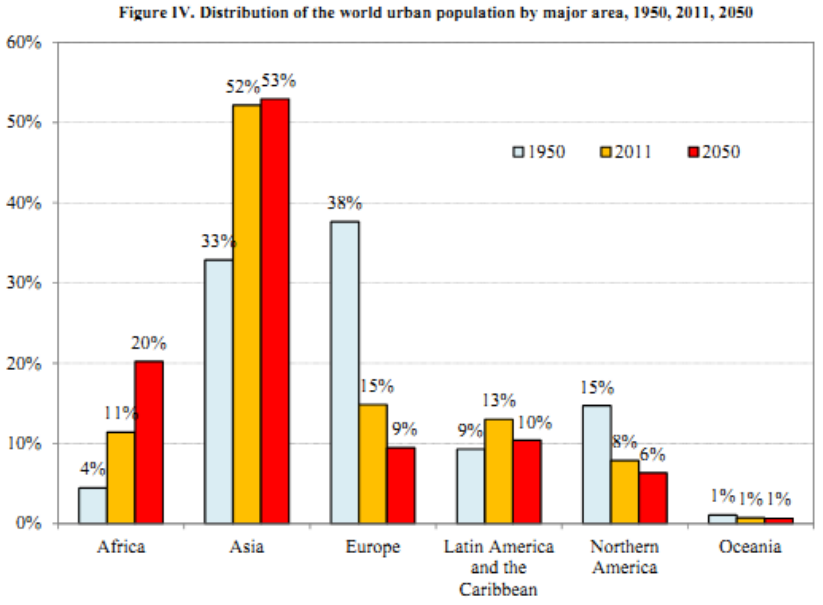
- Cooperation between its members for social and economic development in Asia-Pacific
- Policy, normative and technical cooperation at the regional level

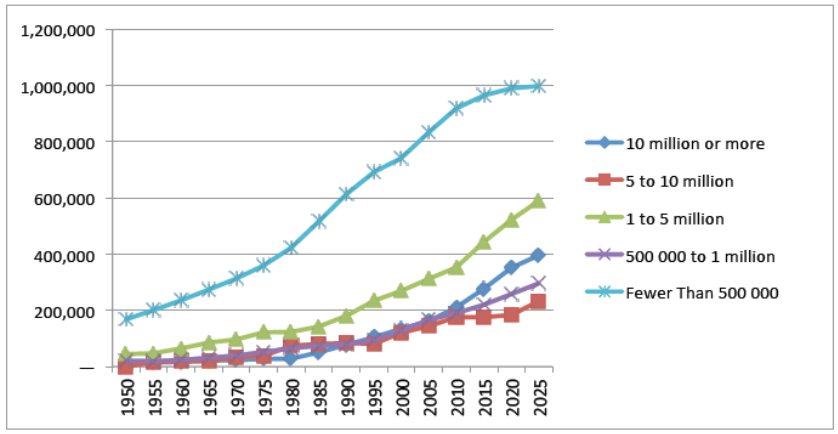
Towards Sustainable Cities: Sustainable Urban Development Section, ESCAP



Patterns of Urban Development: Demographic

- Urban growth in AP – this century's most important demographic trend
- **46%** (2012) ⟶ **52%** (2020) ⟶ **70%** (2050) will live in cities
- UN projections – almost 90% of urban population growth in 2014-2050 in Asia and Africa
- 2011: 13/23 world's megacities
- 2025: 22/27 world's megacities and 7/10 of the world's largest cities
- Growth rates are highest in peri-urban areas: core urban areas 'shrinking'
- Increasing importance of secondary and smaller towns & cities





Source: Derived from UN World Urbanization Prospects, the 2011 revision data.

Asia-Pacific urbanization: The place of secondary cities

- Intermediate cities (<5mn) - largest share of urban growth
- In India & China – secondary cities absorb half of urban expansion
- OECD – 43% of member's economic growth in 1995-2007 from secondary cities
- Their development will largely shape the region's urban future: a reorientation of research & policy attention
- On the frontlines of new urban agendas: innovations & policy initiatives at scale

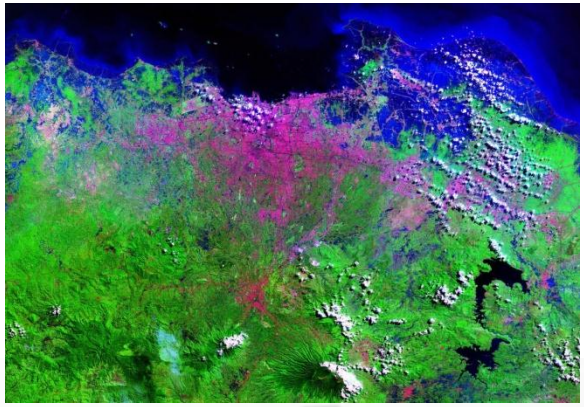
Challenges faced by secondary cities:

- **Economic** - sufficient and sustainable economic growth, job creation for large number of in-migrants, attractiveness for investment.
- **Social** - balance between wealth generation & poverty reduction, rapid social change & conflict, access to social support services.
- **Infrastructural/Environmental** – resource demand, infrastructure deficits, urban sprawl, degradation of farmlands and natural resources.
- **Governance** – weak fiscal base, dependence on allocations, information deficits, limited human resources; regulatory/legal frameworks;

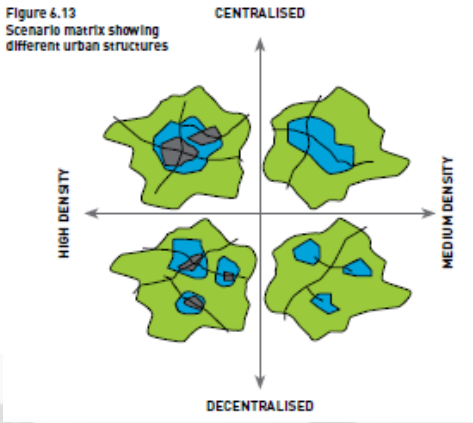
Patterns of Urban Development: Spatial inefficiencies

- Urban growth patterns in Asia-Pacific ‘radiate-out’ & ‘regionalize’ rather than concentrate
- Cities ⟶ megacities ⟶ mega-urban regions
- But these patterns can also be seen across city size

Mumbai



Jakarta



Land: A finite and vulnerable resource

- Land is a finite resource. It is also becoming a more fragile and volatile resource, whether this is a result of commodification, speculation and rent-seeking, degradation or misuse
- Nexus: more efficient, equitable effective use of land resources & ecosystem services
- Governance: cross boundary, intersectoral, beyond silos, managing the commons more effectively in context of scarcity
- Traditional forms of land-use planning have limitations
- Need for new and more adaptive systems, different legal frameworks and systems which can better adapt land use to the growing demands of the 21st century.

Impact of cities at the global level

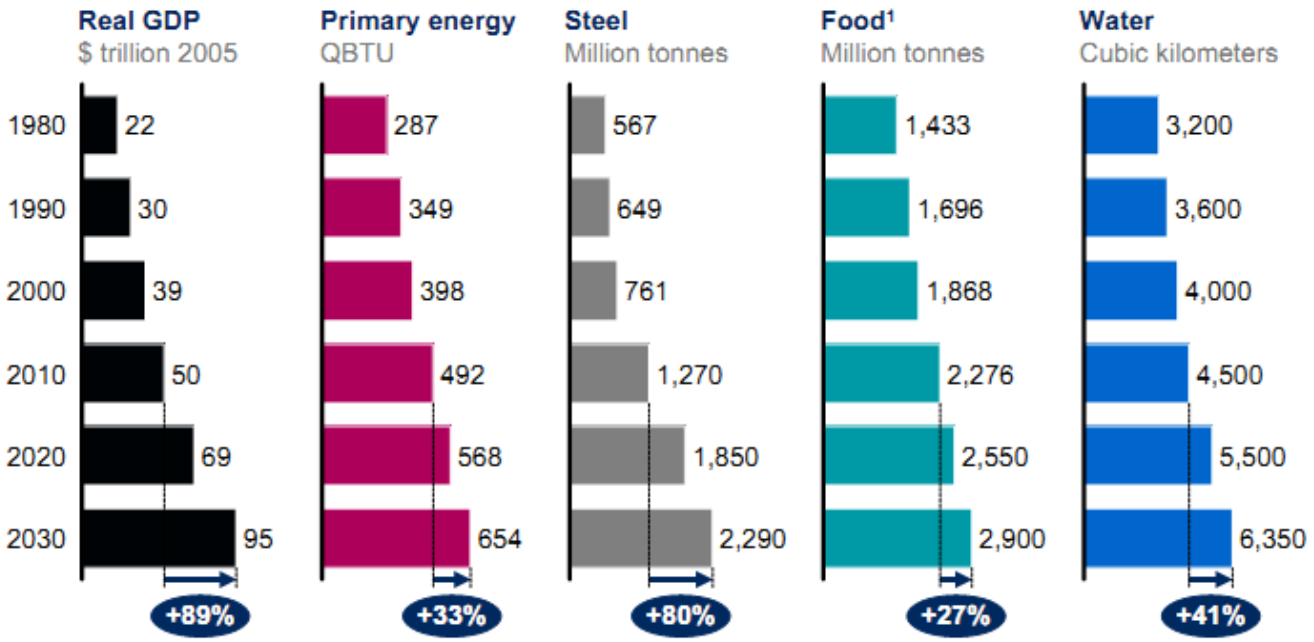
- The ‘resource map’ of cities illustrates increasing reach & impact
- Cities are consumers of regional resources; are sources of waste; and are vulnerable to this unsustainable pattern
- Continued degradation of ecosystem services through an exploitation model
- Significant and growing contribution to GHG

Source: Global Initiative for Resource Efficient Cities, UNEP

Cities as voracious resource consumers at the local level

- **1 billion** new consumers in emerging market cities by 2025
- Annual consumption in emerging cities is set to rise by **$10 trillion** by 2050

Demand for most resources has grown strongly since 2000, a trend that is likely to continue to 2030

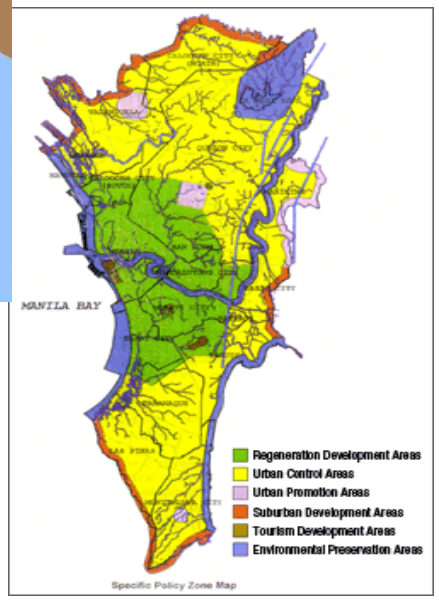


1 Only cereals.

SOURCE: Global Insight; IEA; UN Environment Program (UNEP); FAO; World Steel Association; McKinsey analysis

Managing Cities – A changing paradigm

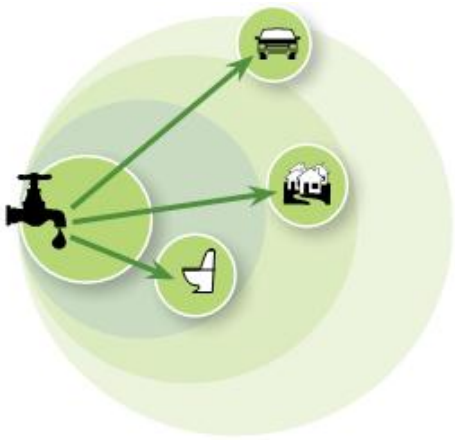
- Cities now transcend their administrative, institutional and regulatory boundaries
- But resource demand– water, energy, and food sectors – are rarely considered through a ‘policy nexus’
- Working in silos – disconnected approaches and sectoral thinking results in planning gaps
- An urgent need to change paradigms from exploitation to investment and toward an integrated framework of thinking, planning & acting – the nexus approach



Source: Physical Framework Plan for Metropolitan Manila, 1996-2016

Water Energy Food – through a sector lens

Water	Energy	Food
- Hydropower - Production of biofuels - Extraction of fuels - Coolant in industries - Potable water	- Pumping of water - Sewage treatment - Transport of water, food - Desalination - Basic services	- Increase productivity - Pump efficiency - Agro-industries - Biofuels - Pollution load - Fertilizers

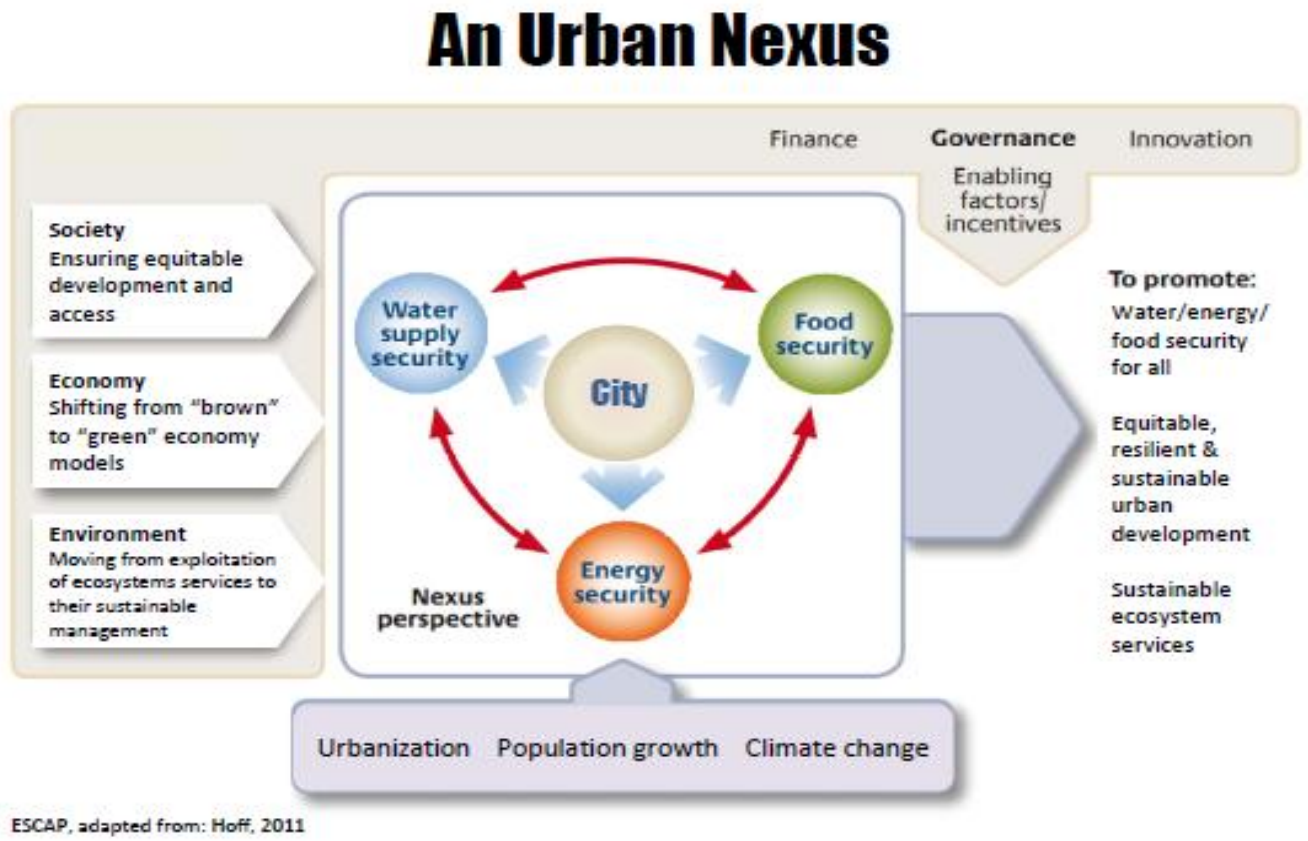


Managing scarce resources through sectors:

- ✓ Unsustainable development patterns
- ✓ Inefficiencies
- ✓ Inequities

An integrated approach

- The inter-linkages between critical and scarce resources, namely water, food, and energy, have been widely recognized.
- There is a need for more integrated planning across key sectors.



An Urban Nexus

- By integrating policies and measures across critical resources, the nexus approach aims to;

  - *enhance synergies;*
  - *reduce trade-offs and;*
  - *ultimately support transition to sustainability*

- By shifting towards sustainable resource management, the urban nexus fundamentally promotes green urban growth/economy through;

  - *water-energy-food security for all;*
  - *equitable, resilient and sustainable urban development;*
  - *sustainable urban & peri-urban ecosystem services.*

- Integrating “resource nexus” into agreed IGDAs:

  - *Balancing the social, economic and environmental dimensions*
  - *Achieving coherence across goals*

Resource Efficiency and Urban Nexus

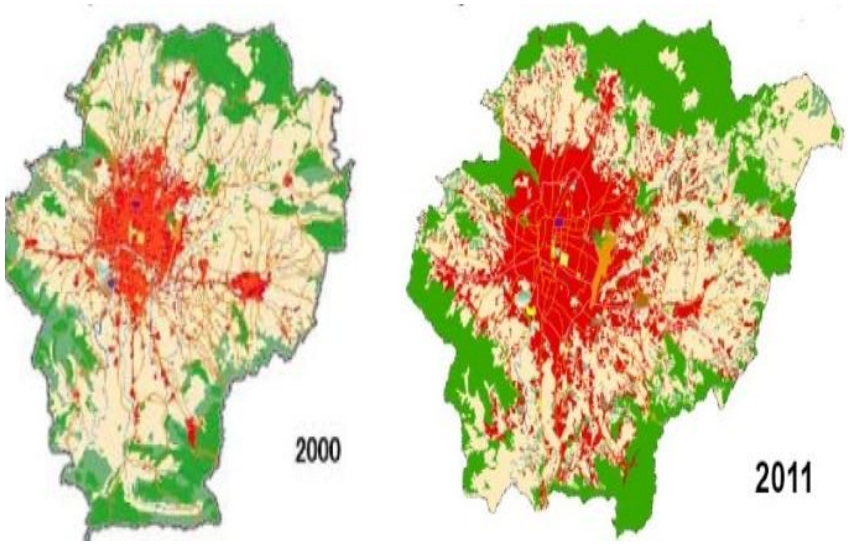
A number of opportunities have emerged within the nexus perspective:

- **Increased productivity of resources** – sustainable and inclusive intensification can be achieved through technological innovation, recycling and reducing wastage.
- **Waste as a resource in multi-use systems** – Cross-sectoral management can boost overall resource use efficiency
- **Stimulating development through economic incentives** – a nexus approach can help to avoid 'sunk costs', i.e. investments that lock development into non-sustainable pathways.
- **Regulation and collective action** can help to guide investments and innovation to minimize negative externalities and share benefits equitably.
- **Improved ecosystem management and investment in natural capital** can provide multiple ecosystem services and increase overall benefits
- **Sustainable use of resources** strengthens a wide range of ecosystem services and maintains the human 'life support system'.

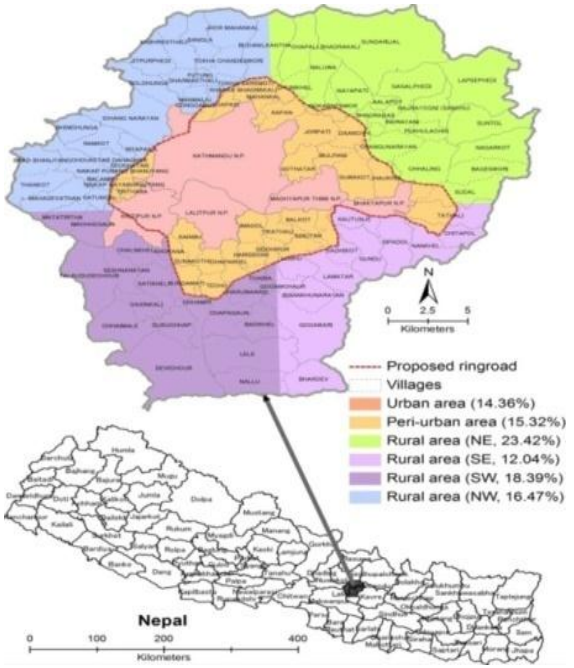
Source: Bonn 2011 Nexus Conference

Highlighting the governance dimension

- The need for integrated planning requires a multi-stakeholder approach underpinned by effective governance
- Resource footprint of cities, as well as ecosystem boundaries, transcend administrative boundaries, calling for coordination across actors and institutions

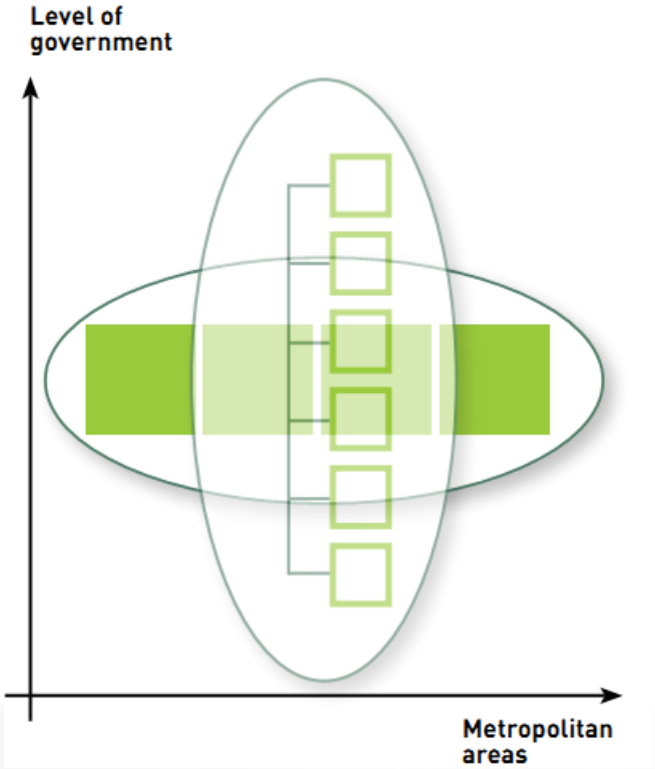


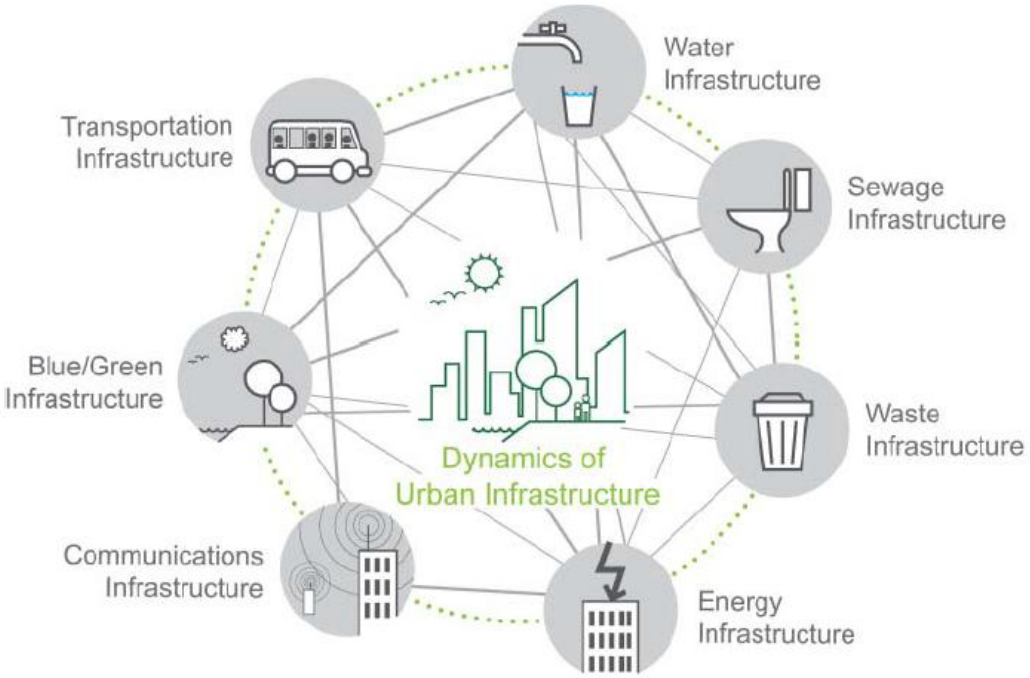
Kathmandu Valley



Urban Nexus: Vertical and horizontal integration

- A Nexus approach requires coordination and integration at different levels:
  - Vertical integration – between institutions and actors
  - Horizontal integration – between sectors

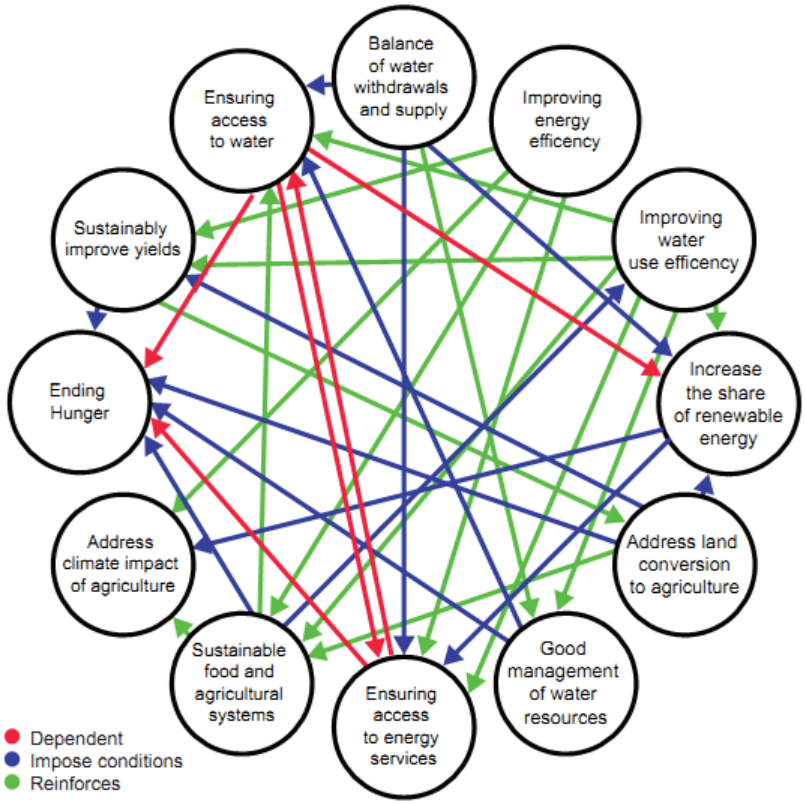




Source: The SymbioCity Approach

What is required?

- Existing institutions/policy frameworks require transformation/ renewal: collaborative governance
- Policy responses must consider impacts/relationships beyond urban boundaries & across sector silos
- Need for integrated and well-organized spatial planning
- Shift from short term resource exploitation towards long term investment
- **Challenges**: financial & technological, but also political, organizational & information-related



Source: Discussion Brief, SEI

Linking with the global agenda

- Nexus features in proposals for the post-2015 Sustainable Development Goals (for example, the "**integrating approach**" advocated by the Colombian government), which are currently being debated by the UN.
- The **outcome document of Rio+20** underlines the importance of water, energy, land and biodiversity as priority areas for SDGs.
- Urban issues features prominently in the **Post-2015** Development Agenda debate.
- Recent report of Working Group II of the Intergovernmental Panel on Climate Change features the "Water-Energy-Food/Feed/Fibre Nexus as Linked to Climate Change" as a **cross-chapter theme**.
- **HABITAT III** in 2016 will be the first global conference after the Post-2015 Development Agenda and will define the “New Urban Agenda”

THANK YOU

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