

MAXIMIZING URBAN NEXUS OPPORTUNITIES IN THE ASIA-PACIFIC REGION

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WORLD WATER DAY 2014

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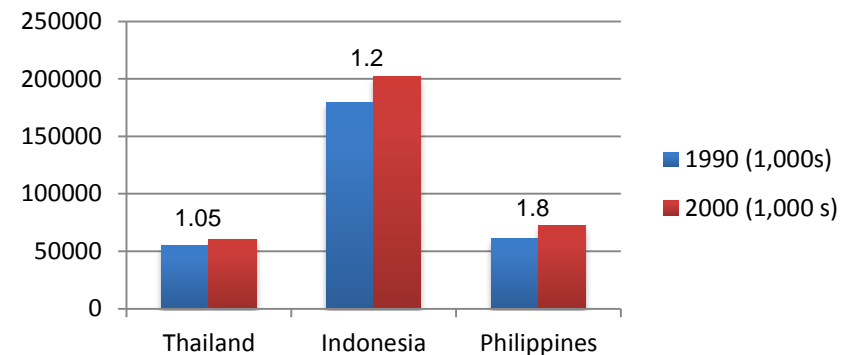
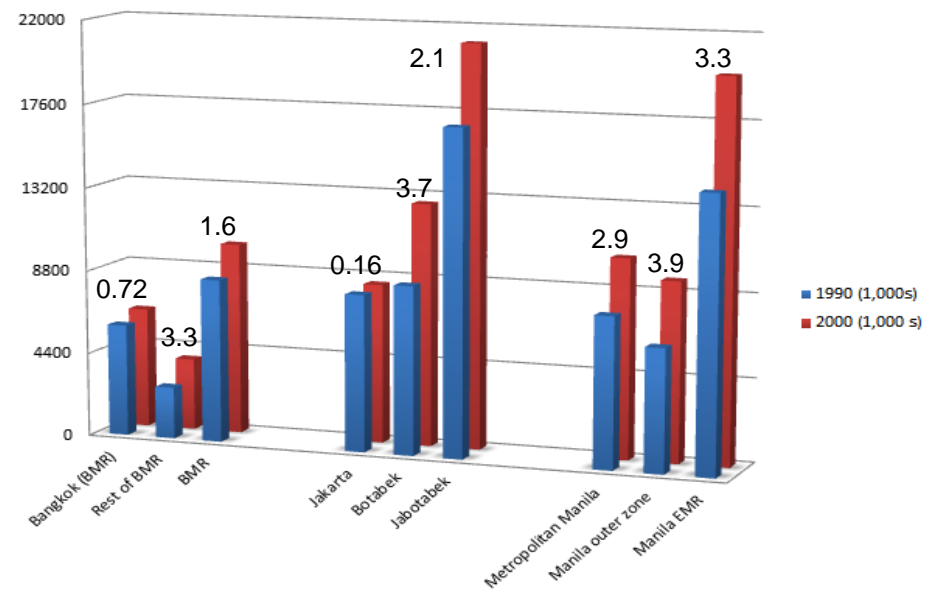
STRUCTURE OF THE PRESENTATION

- ***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, renewing planning & government frameworks
- ***Seizing our opportunities:*** rethinking governance and planning through an urban nexus framework



Patterns of Urban Development: Demographic

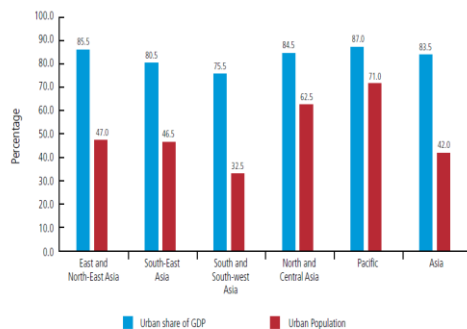
- 2012: **1.9** billion / 46% of region lived in cities
- 2020: **2.2** billion / 52%
- 2050: **3.2** billion+ / 64%
- 2011: 13/23 world's megacities
- 2025: 22/27 world's megacities and 7/10 of the world's largest cities
- Yet growth rates in small/medium sized cities are fastest & account for 60% of regional urban population
- Growth rates are highest in peri-urban areas: core urban area 'shrinking'



Patterns of Urban Development: Economic

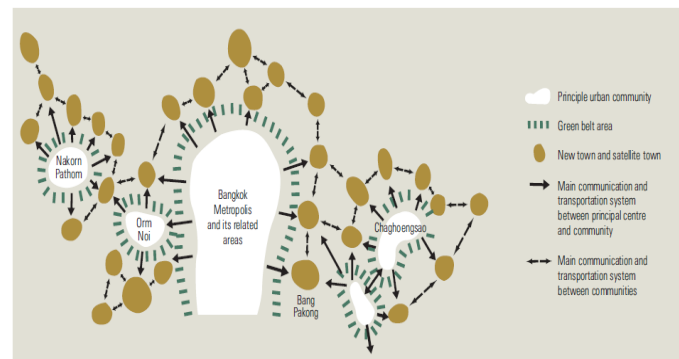
- Asian cities: continued concentration of population, assets, economic & industrial development and infrastructure
- Urban share of GDP is higher than population share – and growing
- Asia-Pacific cities are increasingly hubs of global & national economies through production, consumption, transportation & services

CHART 3.5: URBAN AREAS – SHARE IN GROSS DOMESTIC PRODUCT, ASIA AND THE PACIFIC, 2008



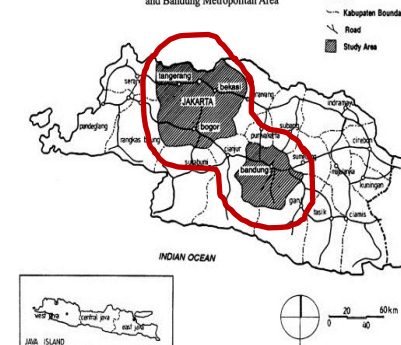
Source: Computed from ESCAP (2010)

FIGURE 6.2: THE CLUSTERING OF URBAN NODES IN THE BANGKOK METROPOLITAN REGION



Source: Laquian (2005:171)

Figure Jakarta Metropolitan Area and Bandung Metropolitan Area



Source: Firman (2009). *The Continuity and Change in Mega-Urbanization in Indonesia: A Survey of Jakarta-Bandung Region Development*

Patterns of Urban Development: Spatial

- Urban growth patterns in Asia-Pacific 'radiate-out' & 'regionalize' rather than concentrate
- Cities → megacities → mega-urban regions
- Examples: Mumbai Municipal Region 21m over 4,355 sq km most vulnerable city in world in exposure to coastal flood hazard; JABODETABEK 28m over 6,372sq.km encompasses 13 river systems

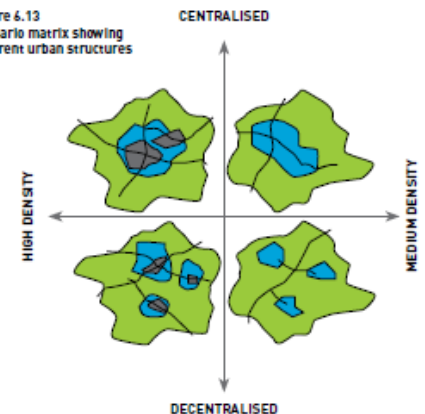


Mumbai



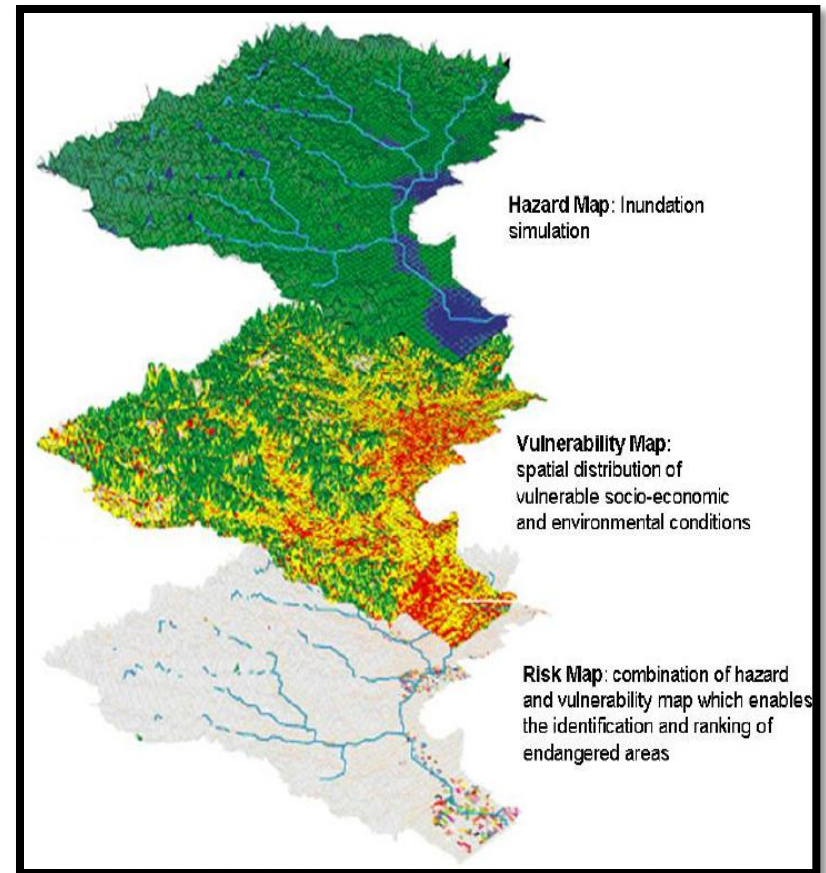
Jakarta

Figure 6.13
Scenario matrix showing
different urban structures



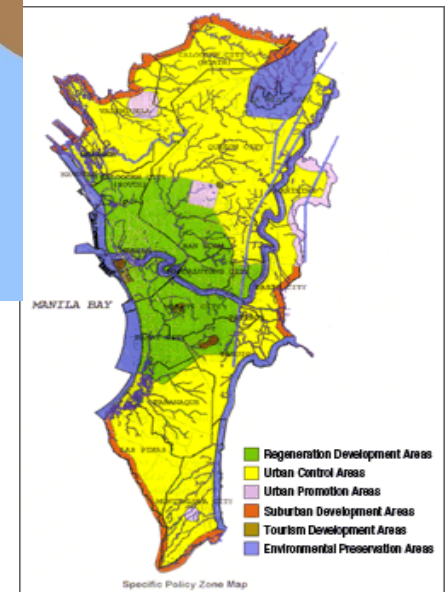
Urban Expansion Into Resource Hinterlands

- 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
- An urgent need to change paradigms from exploitation to investment and toward an integrated framework of thinking, planning & acting



Managing Cities

- Cities now transcend their administrative, institutional and regulatory boundaries
- 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

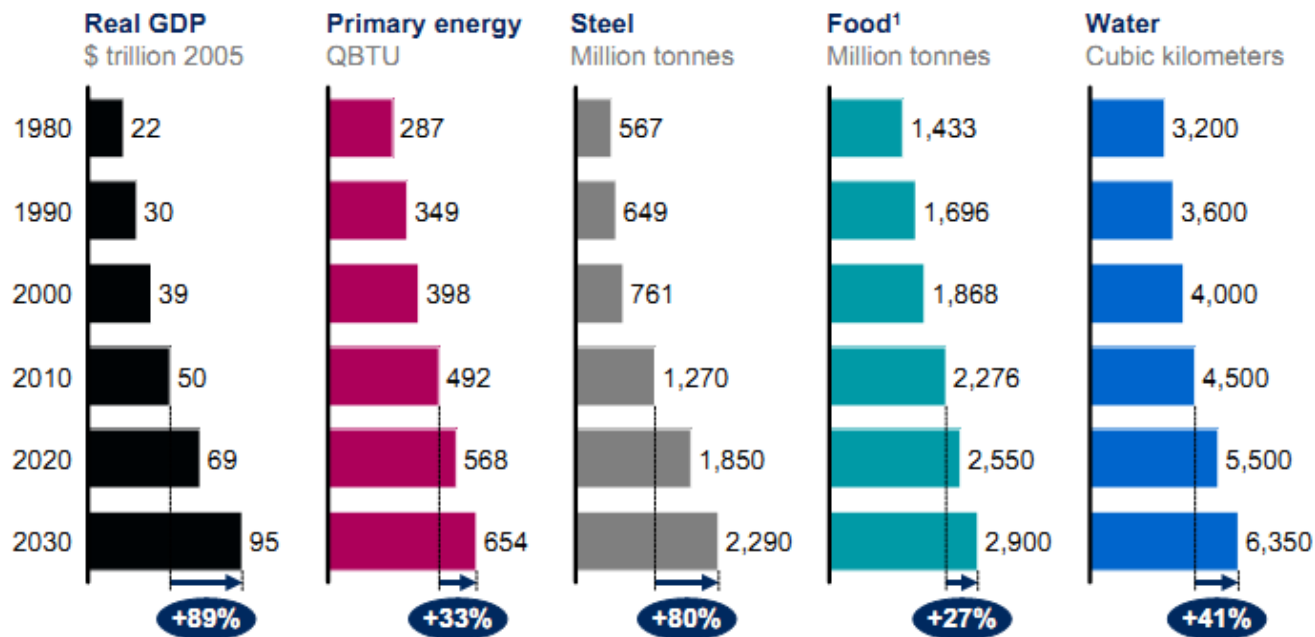


Source: Physical Framework Plan for Metropolitan Manila, 1996-2016

Cities as voracious resource consumers

- **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



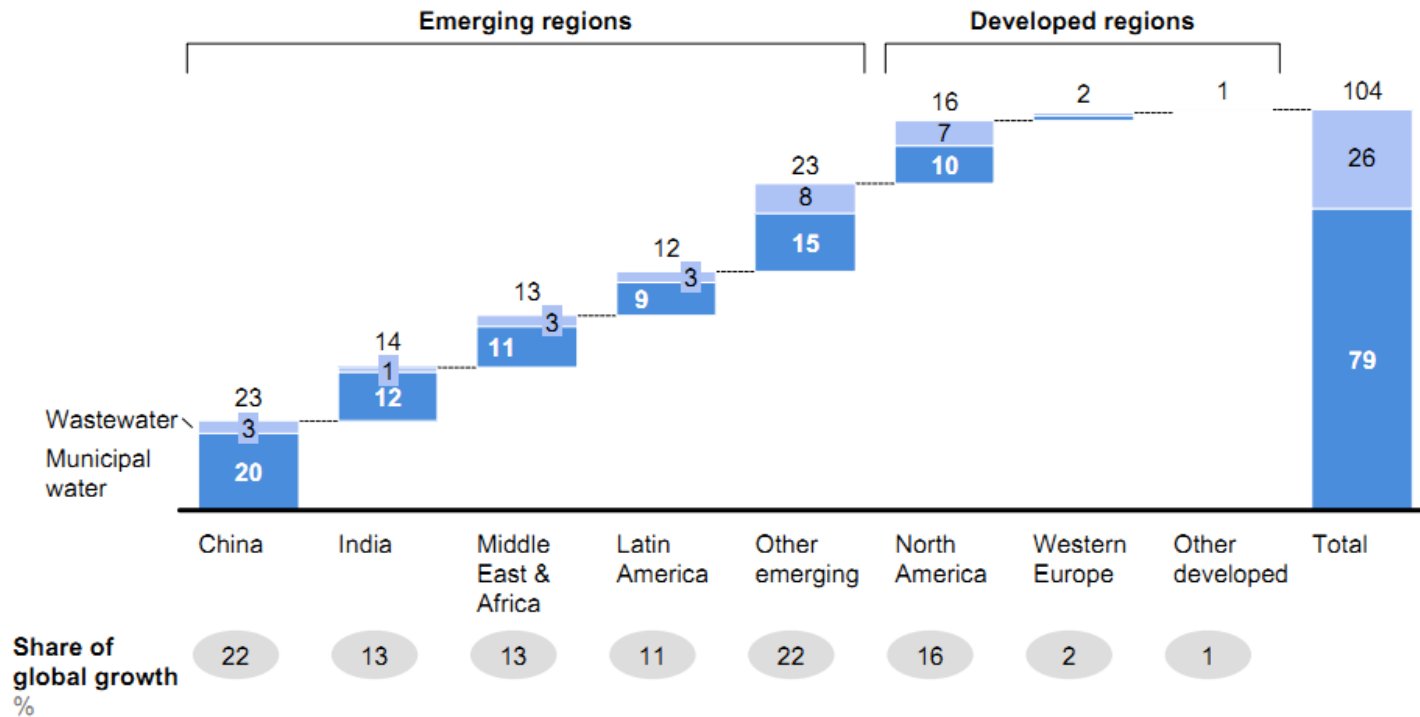
¹ Only cereals.

At city level ...

Cities in emerging economies will account for about 80 percent of new urban municipal water demand and wastewater treatment needs

Total urban municipal water demand growth by region, 2010–25

Billion cubic meters



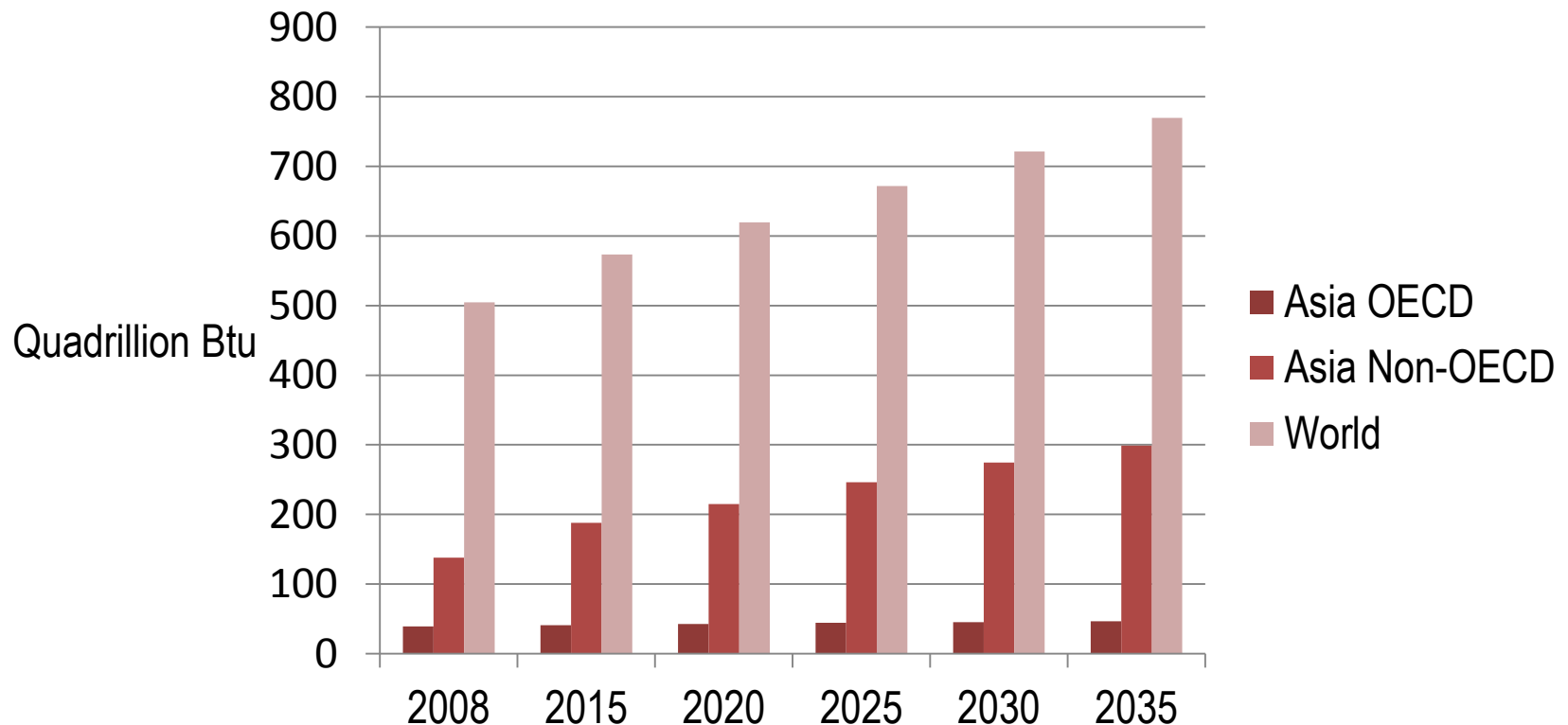
NOTE: Analysis assumes the current ratio of water consumption to wastewater treatment remains constant across countries.

Numbers may not sum due to rounding.

SOURCE: Global Water Intelligence; McKinsey Global Institute analysis

Energy consumption projection

- Energy use in Asia will increase by **95%**, non-OECD Asia will increase by **117%** (DOE/EIA, 2011)
- Most demand is now centred in urban areas

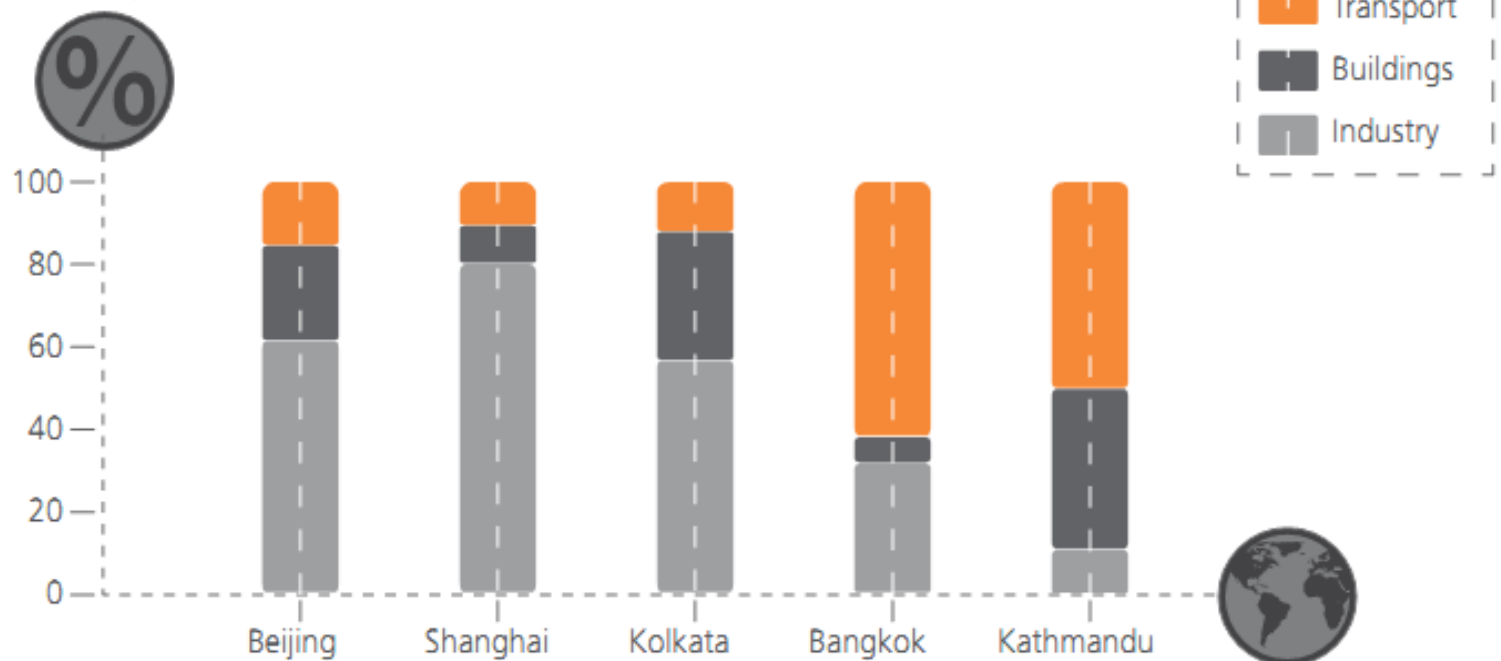


Urban Energy Consumption

- But not in the same form...

Figure 1.29 Energy Consumption per Sector in Selected Asian Cities

Urban energy consumption



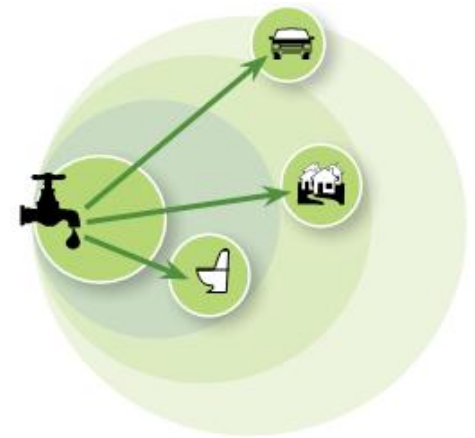
Adapted from: UN-Habitat, 2008

The consumption footprints of cities

- Population + Patterns of growth
- Increased expansion of industry, growth into watersheds, coastal/aquatic zones, etc.
- Land conversion: from farm/non irrigated dry & rice fields is endemic & outside of official plans/planning
- South Asia: 45% of potential crop land used for human settlements, with increased conversions each year
- Asia-Pacific cities are consumers of space & resources
- Urban footprints are much greater than spatial form

Water Energy Food – through a sector lens

Water	Energy	Food
<ul style="list-style-type: none">- Hydropower- Production of biofuels- Extraction of fuels- Coolant in industries- Potable water	<ul style="list-style-type: none">- Pumping of water- Sewage treatment- Transport of water, food- Desalination- Basic services	<ul style="list-style-type: none">- Increase productivity- Pump efficiency- Agro-industries- Biofuels- Pollution load- Fertilizers



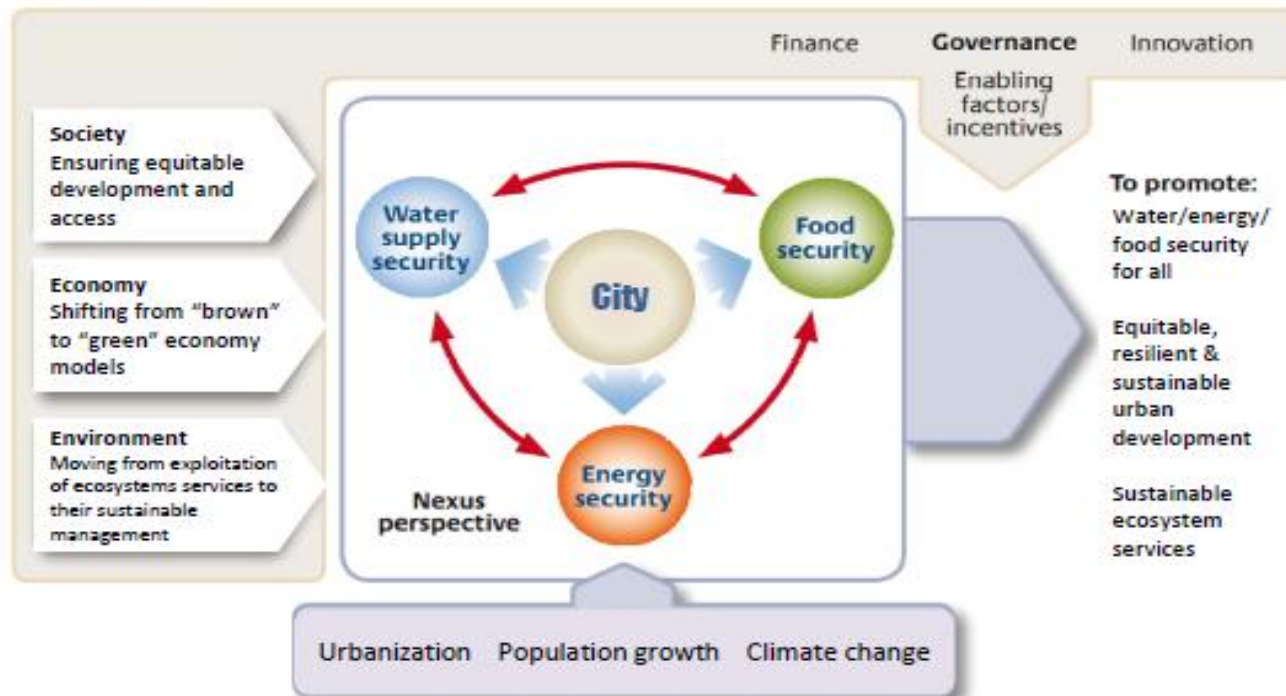
Managing scarce resources through sectors:

- ✓ Unsustainable development patterns
- ✓ Inefficiencies
- ✓ Inequities

An integrated nexus approach

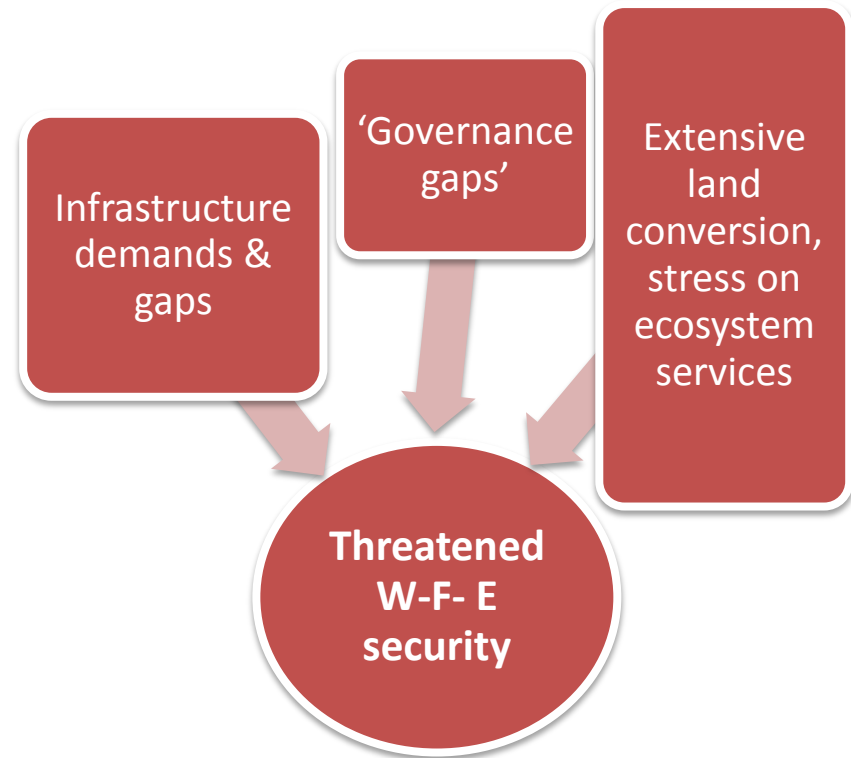
- The inter-linkages between critical and scarce resources, namely water, food, and energy, have been widely recognized.
- There is a need for more integrated planning across key sectors.

An Urban Nexus



Nexus thinking & action

- Moving **from sectoral to holistic frameworks**: from fragmentation to integration + policy coherence through innovation
- Balancing decentralization and local level fragmentation with national & regional planning: **getting the institutional relationships right**
- Integrated sustainable development requires **financing to match action**: the right enabling factors/incentives
- Planning to meet current and projected resource needs requires **data and transparency** in decision-making
- Commitments to **equity & access** should underpin social dimensions

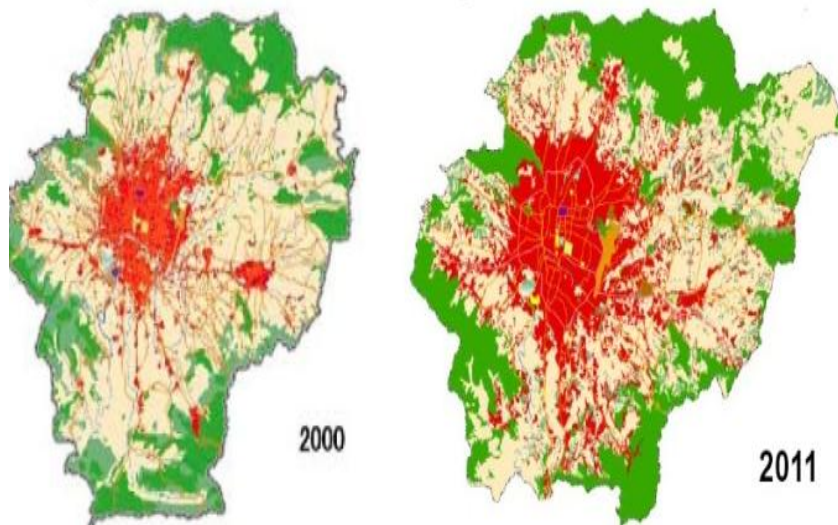


An Urban Nexus

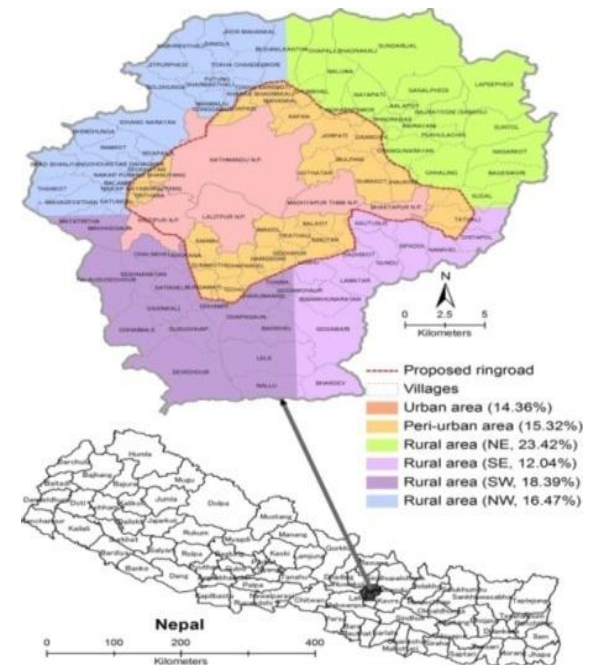
- By integrating policies and measures across critical resources, the nexus approach aims to;
 - *enhance synergies;*
 - *reduce trade-offs and;*
 - *ultimately support transition to sustainability*
- By shifting towards sustainable resource management, the urban nexus fundamentally promotes green urban 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 IGDA:
 - *Balancing the social, economic and environmental dimensions*
 - *Achieving coherence across goals*

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

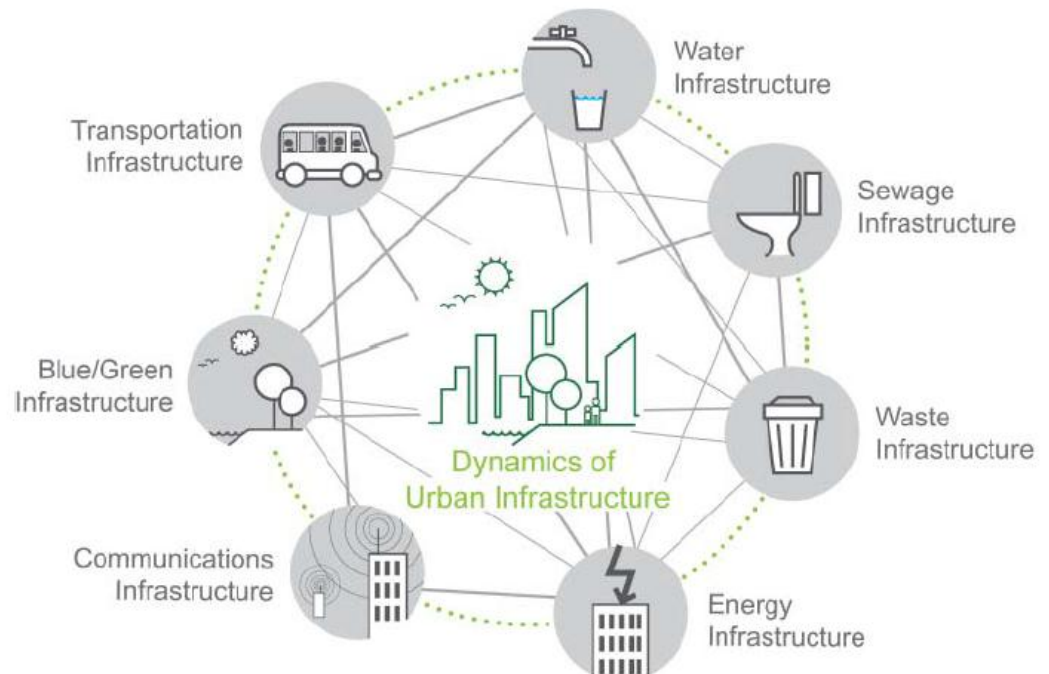
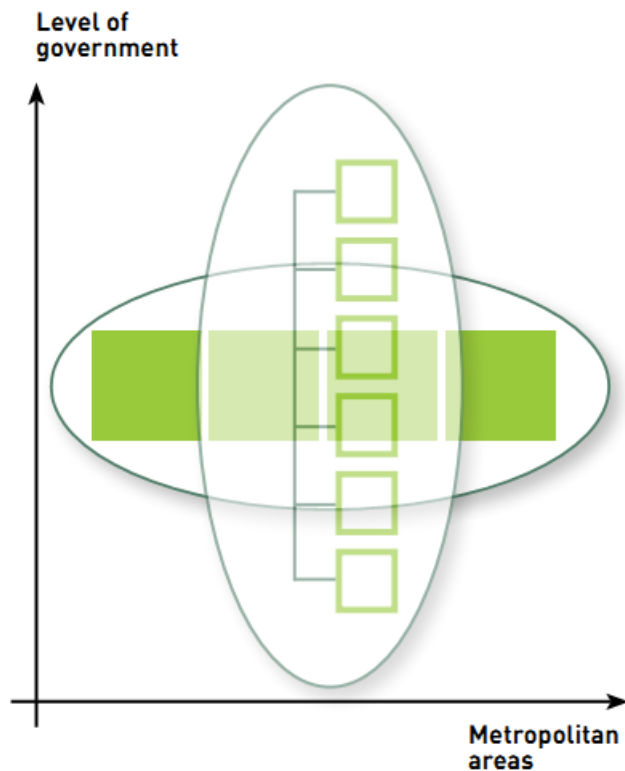


Kathmandu Valley



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



What is required?

- Existing institutions/policy frameworks require transformation & renewal
- 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

Linking with the global development agenda



- At the **Rio+20** conference, a need for coordinated planning to transform into green economy was well acknowledged and the need for reforms to strengthen the institutional framework for sustainable development and emphasized the importance of effective governance at regional, national, sub-national and local levels recognized
- 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
- **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

