

# Maximizing Urban Nexus Opportunities in the Asia-Pacific Region

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# STRUCTURE OF THE PRESENTATION

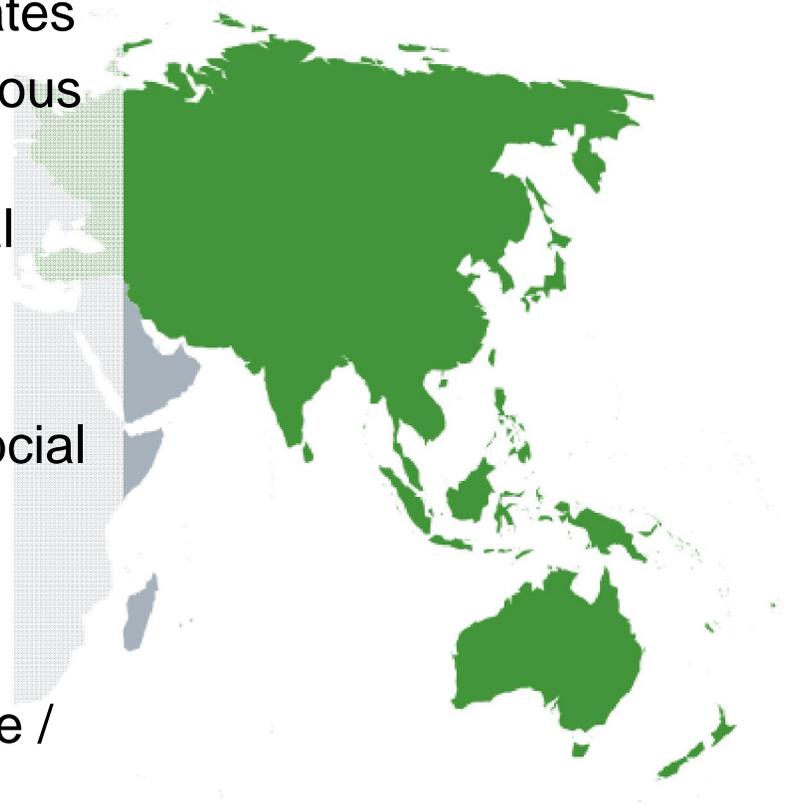
- *The Big Picture: context, urban growth & its spatial patterns, impact on resources, opportunities for nexus planning*
- *Key Challenges: managing ecosystem resources holistically, renewing planning & government frameworks*
- *Looking Forward: opportunities to rethink governance and planning through an urban nexus framework*



# ESCAP : The regional arm of the UN for Asia-Pacific



- § Part of UN Secretariat: 62 member states
- § ESCAP covers the world's most populous region - two thirds of humanity
- § Based in Bangkok, with 4 Sub-regional offices
- § ESCAP fosters:
  - regional cooperation to promote social & economic development
  - normative, analytical & technical cooperation at the regional level
  - a platform for South-South dialogue / exchange of practices



# 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

TABLE 2.12: MEGA-URBAN REGIONS IN SOUTH-EAST ASIA – POPULATION, 1990-2000

| Mega Urban Region        | Population 1990 (1,000s) | Population 2000 (1,000s) | Average Annual Increase (%) |
|--------------------------|--------------------------|--------------------------|-----------------------------|
| Bangkok (BMR)            | 5 882                    | 6 320                    | 0.72                        |
| Rest of BMR              | 2 707                    | 3 760                    | 3.30                        |
| BMR                      | 8 590                    | 10 080                   | 1.60                        |
| <b>Thailand</b>          | 54 549                   | 60 607                   | 1.05                        |
| Jakarta                  | 8 259                    | 8 385                    | 0.16                        |
| 'Botabek' <sup>1</sup>   | 8 876                    | 12 749                   | 3.70                        |
| 'Jabotabek' <sup>2</sup> | 17 135                   | 21 134                   | 2.10                        |
| <b>Indonesia</b>         | 179 379                  | 202 000                  | 1.20                        |
| Metropolitan Manila      | 7 945                    | 10 491                   | 2.90                        |
| Manila outer zone        | 6 481                    | 9 458                    | 3.90                        |
| Manila EMR <sup>3</sup>  | 14 426                   | 19 949                   | 3.30                        |
| <b>Philippines</b>       | 60 703                   | 72 345                   | 1.80                        |

<sup>1</sup> Short for the conurbation including Bogor, Tangerang and Bekasi

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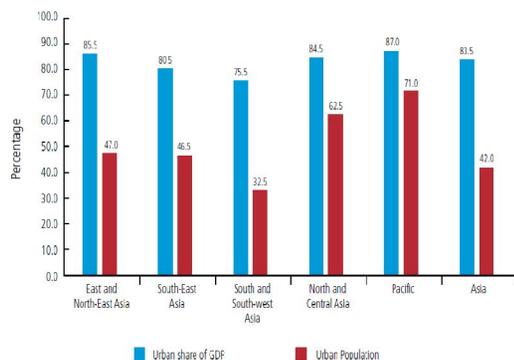
<sup>3</sup> Short for Extended metropolitan region

Source: Jones (2001)

# Patterns of Urban Development: Economic

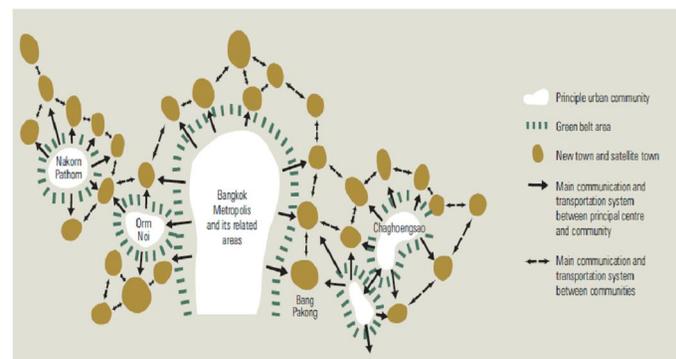
- § Asian cities: continued concentration of population, assets, economic & industrial development and infrastructure
- § Urban share of GDP is higher than population share – and growing
- § Asia-Pacific cities are increasingly at hub of global economy through production, consumption, transportation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

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



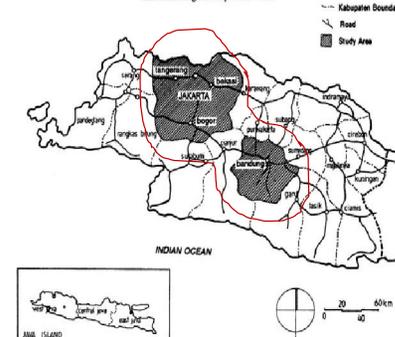
Source: Computed from ESCAP (2010)

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

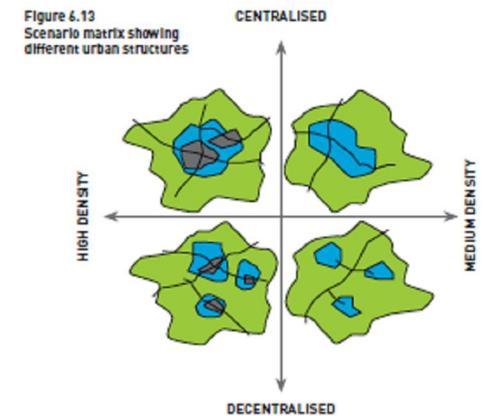
- § Urban growth patterns in Asia-Pacific 'radiate-out' & 'regionalize' rather than concentrate
- § Cities, megacities, mega-urban regions
- Examples: Mumbai Municipal Region 21m over 4,355 sq km most vulnerable city in world in exposure to coastal flood hazard; JABODETABEK 28m over 6,372sq.km encompasses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



Mumbai

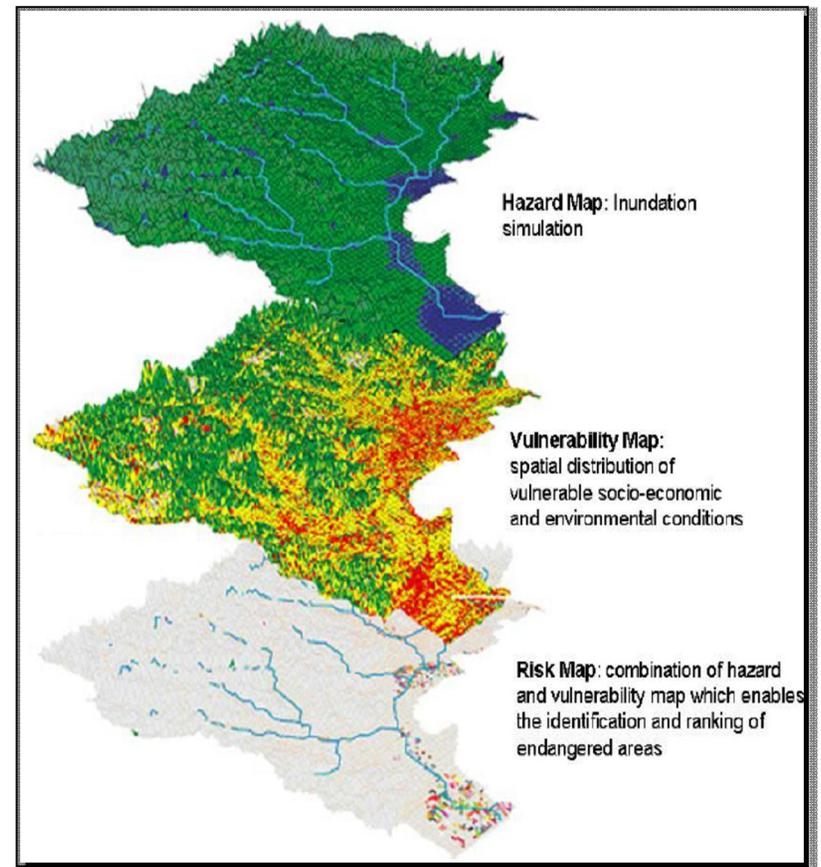


Jakarta



# Urban Expansion Into Resource Hinterlands

- The 'resource map' of cities illustrates increasing reach & impact
- Cities are consumers of regional resources; sources of waste; and are vulnerable to this unsustainable pattern
- Continued degradation of ecosystem services through an exploitation model
- This necessitates changing paradigms from exploitation to investment and toward a nexus framework of thinking, planning & acting

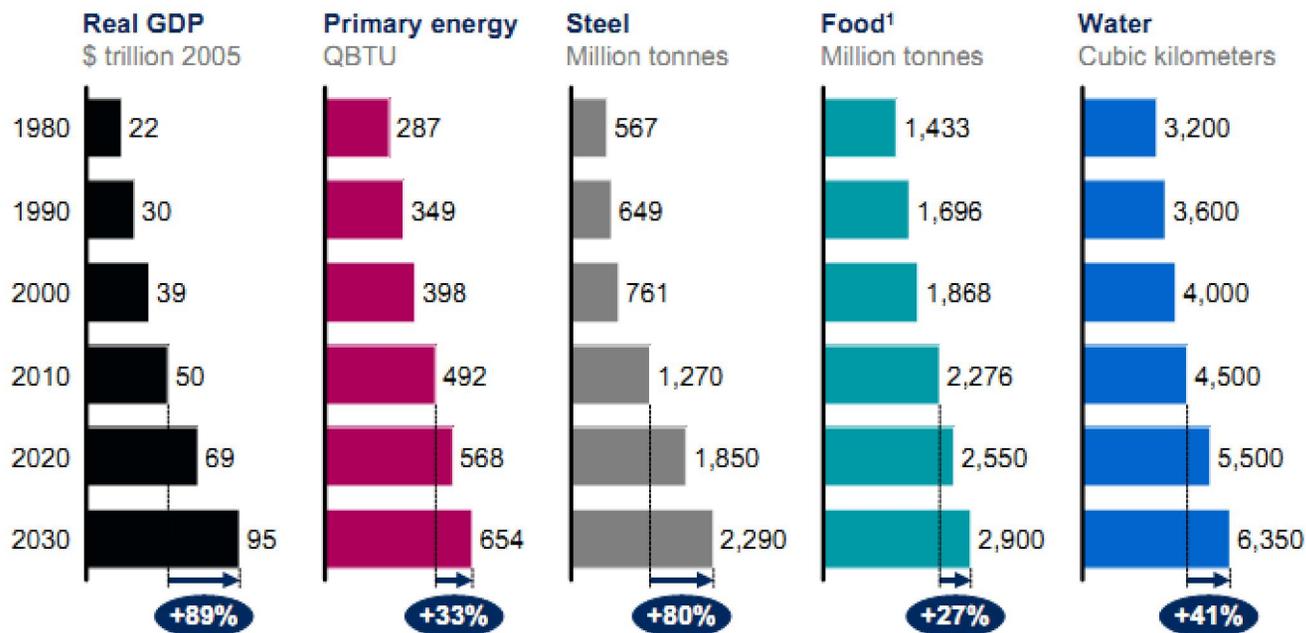


# Cities as voracious resource consumers

§ **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



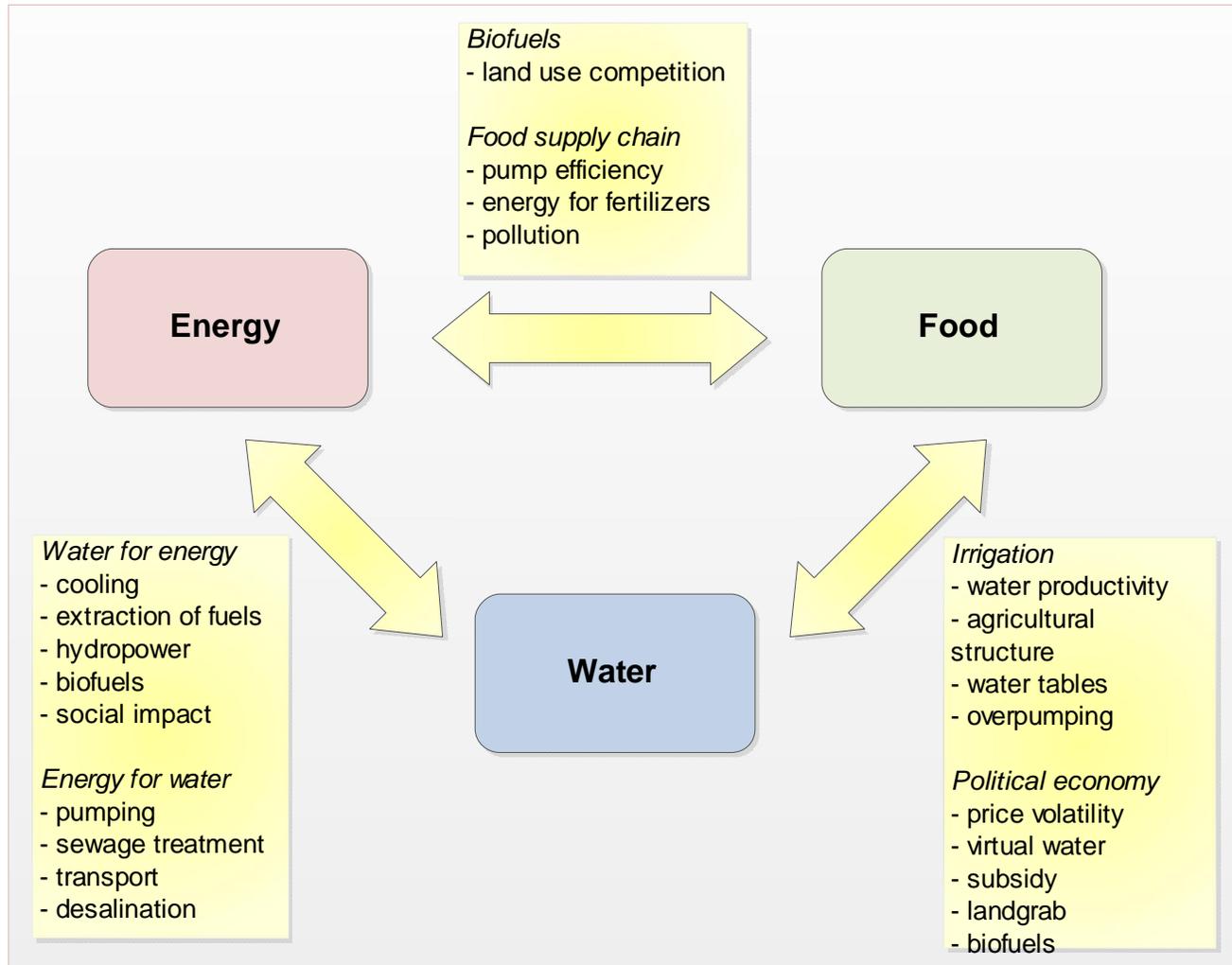
<sup>1</sup> Only cereals.

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

# The consumption footprints of cities

- § Not only population, but the nature of growth
- § Increased expansion of industry, growth into watersheds, water sources, 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

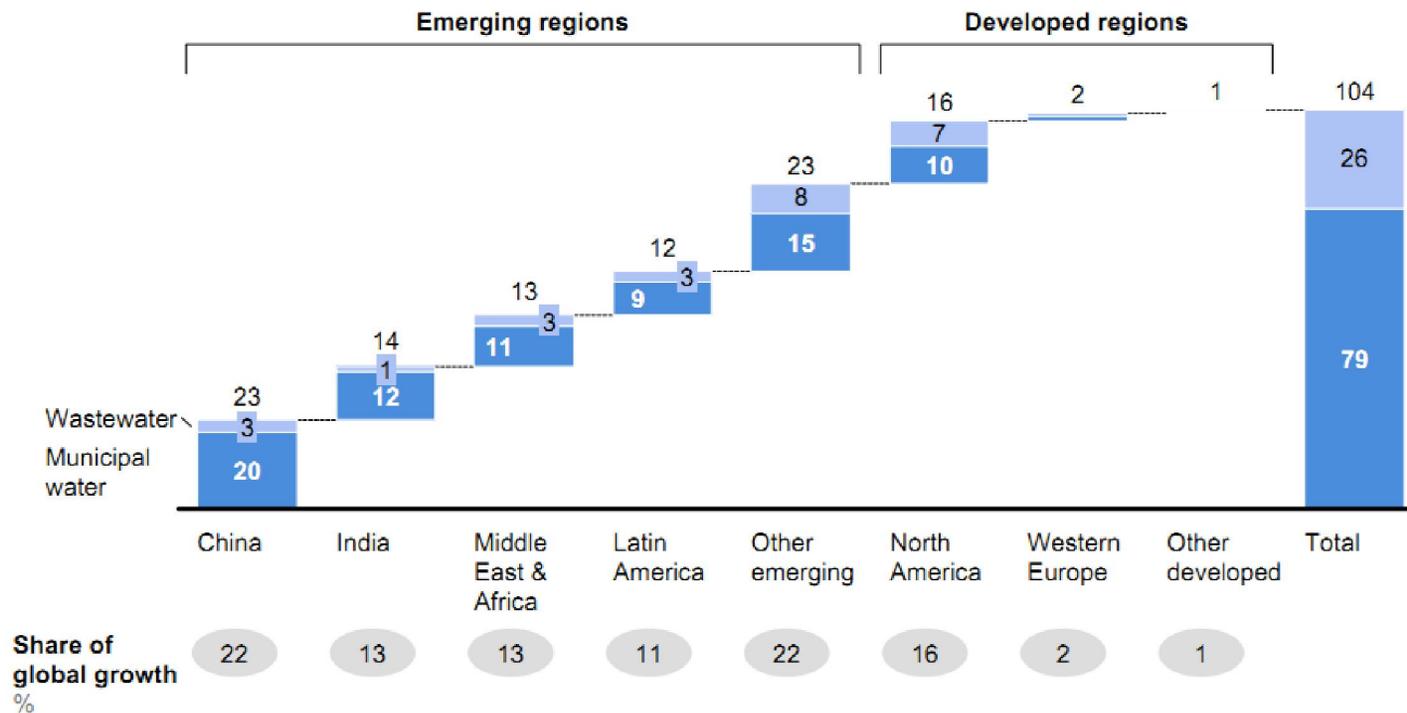
# Water – Energy – Food: Interdependence & Competing Demands



# 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

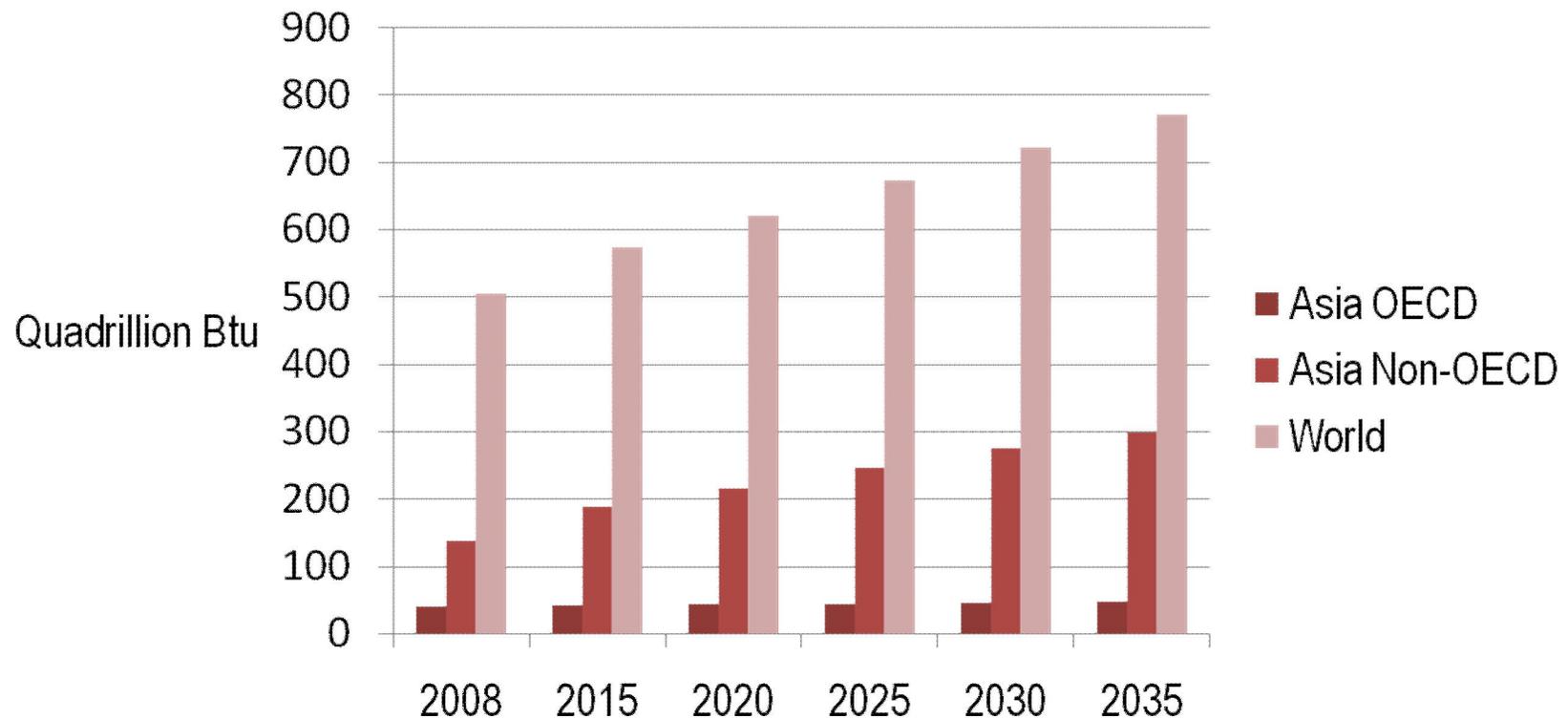


NOTE: Analysis assumes the current ratio of water consumption to wastewater treatment remains constant across countries. Numbers may not sum due to rounding.

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

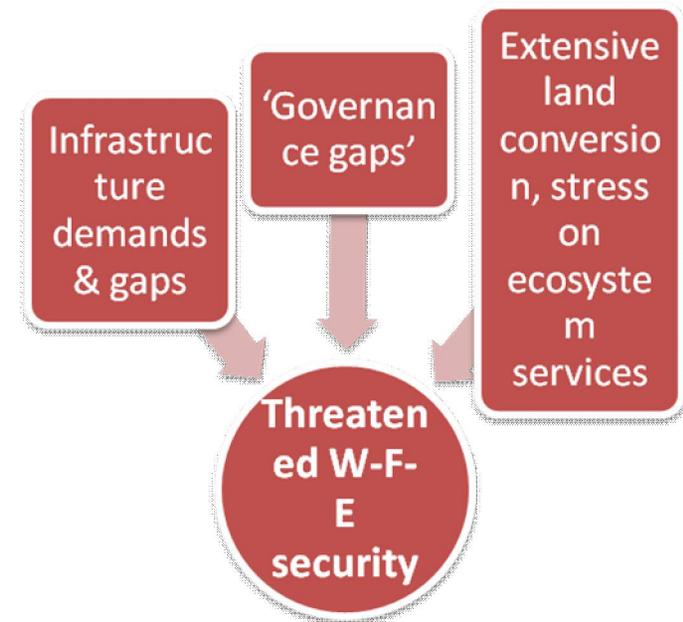
Urban energy consumption



Adapted from: UN-Habitat, 2008

# Nexus Thinking & Action

- § Moving from sectoral to holistic frameworks: from fragmentation to integration 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 underpin social dimensions



# An Urban Nexus

§ By integrating policies and measures of three critical resource management, the nexus approach aims to;

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

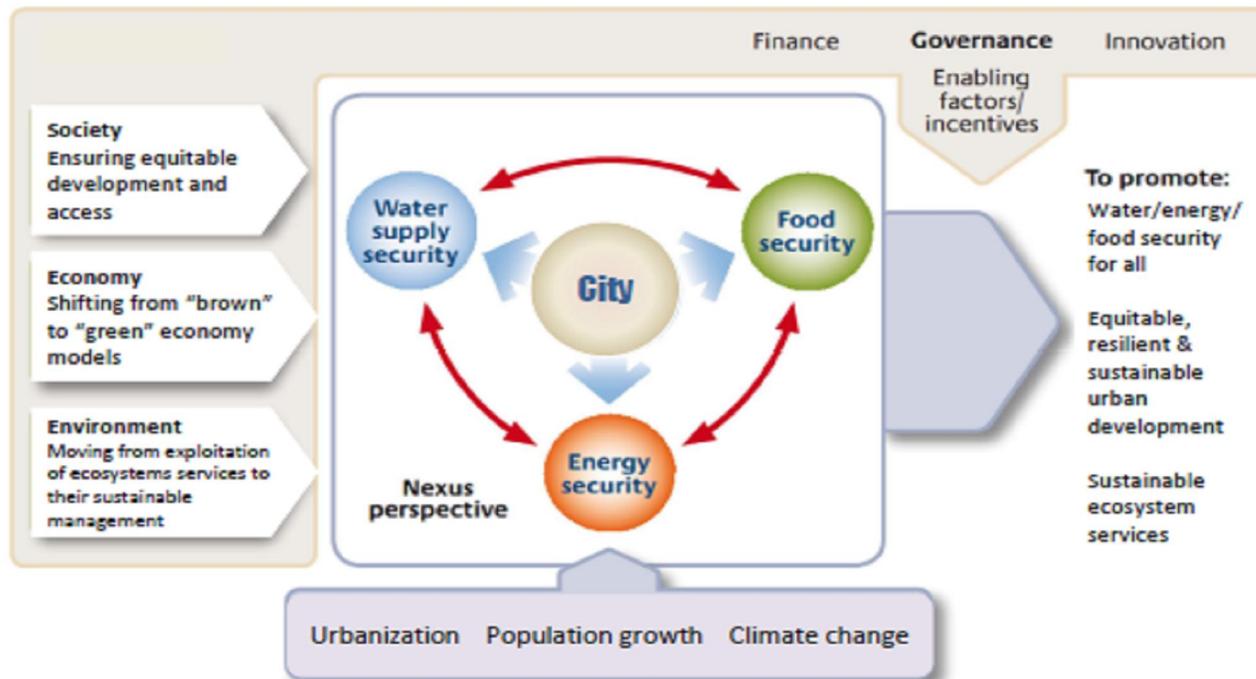
§ By shifting towards sustainable resource management, the urban nexus fundamentally promotes;

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

# An Integrated Nexus Approach

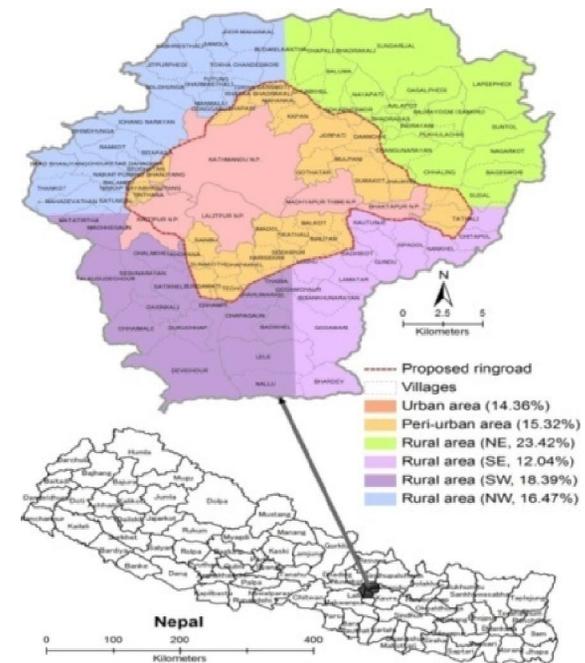
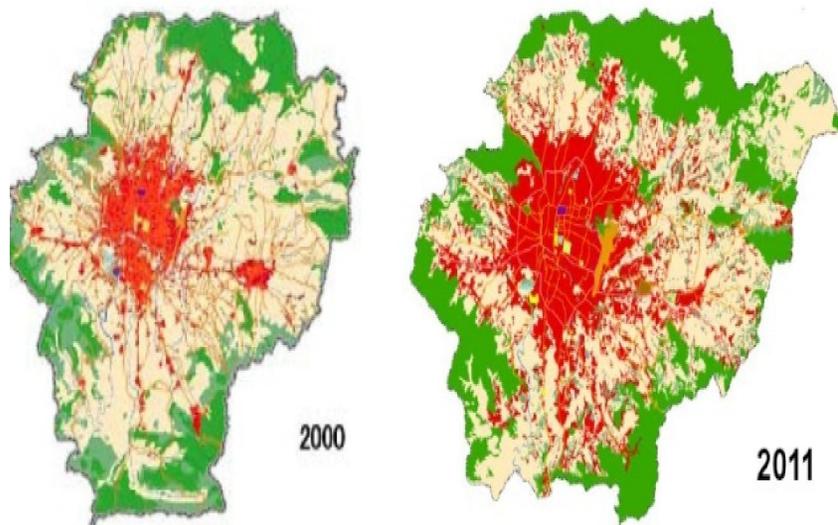
- § There is a need for more integrated planning across key sectors.
- § The inter-linkages between critical and scarce resources, namely water, food, and energy, have been widely recognized.

## An Urban Nexus



# Urban Nexus: the Governance Dimension

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

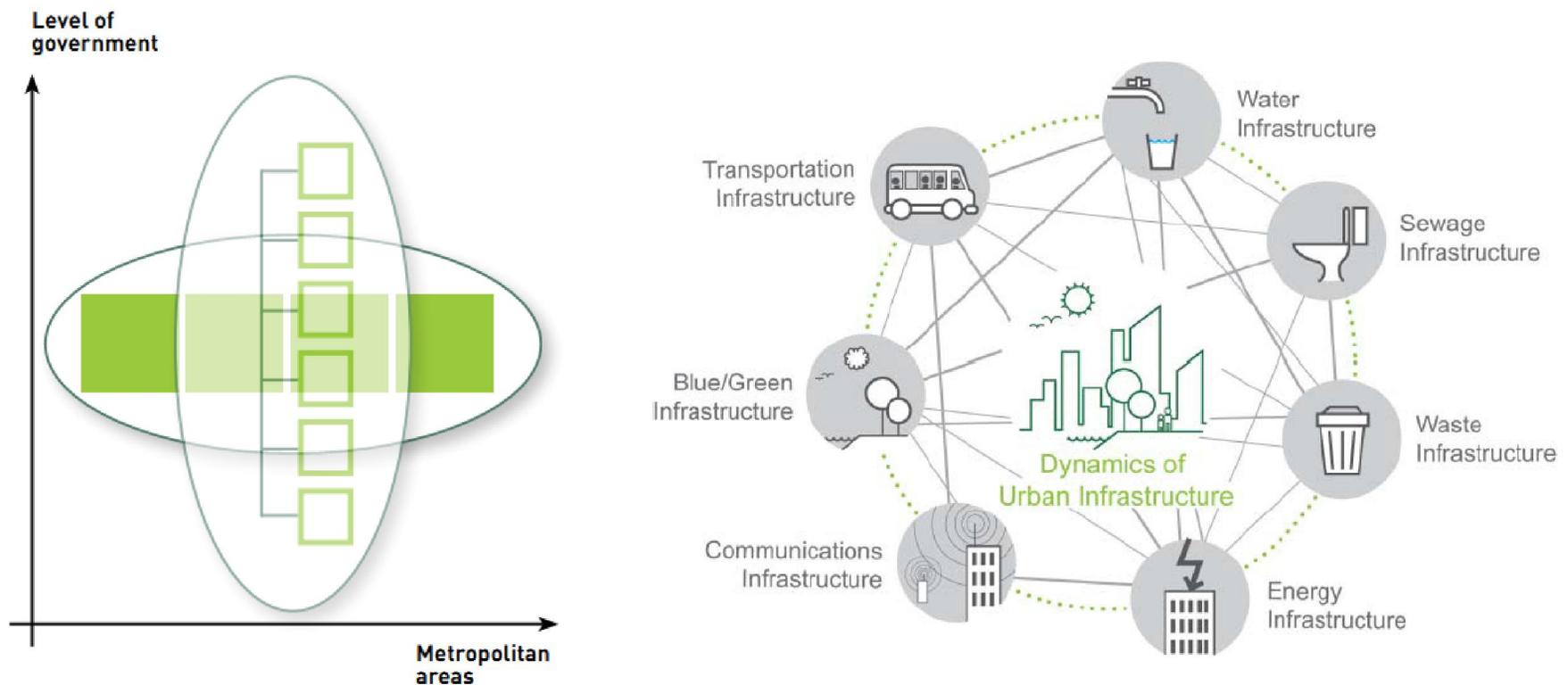


Kathmandu Valley

# 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

# Linking with Shared Sustainable Development Goals

- § At the **Rio+20** conference, a need for coordinated planning to transform into green economy was well acknowledged: 'Green economy in the context of sustainable development and poverty eradication'
- § The Conference recognized 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
- § At the same time, the **post-2015** development agenda to follow-up on the Millennium Development Goals (MDGs) is being discussed, with an increased focus on sustainable development



*There is then a need to enhance understanding and action on nexus planning as a framework through which to realize these goals.*

THANK YOU

