

Targeting City Clusters in ADB's Urban Operational Plan

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Manila

The UOP calls for engagement with “urban regions”, “city clusters”, and “geographically coherent areas”...but does not define them.

This presentation, based on a study of four Asian city clusters recently conducted for RSDD’s Sustainable Infrastructure Division, suggests some key definitions and modes of engagement.

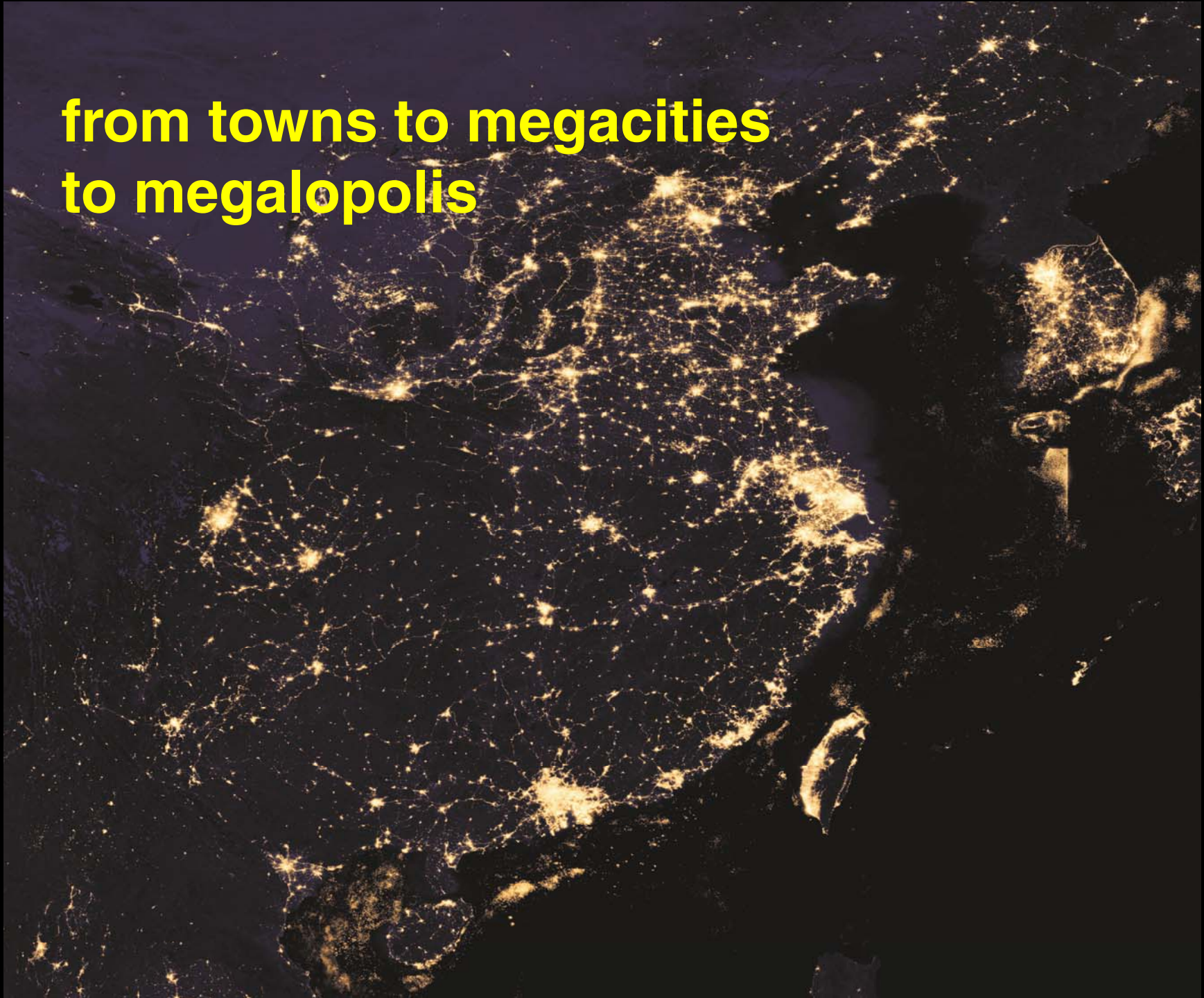
- **what are ‘city clusters’?**
- **dynamics of metropolitan regions**
- **four Asian case studies**
- **lessons learned**
- **ADB engagement with metropolitan regions**

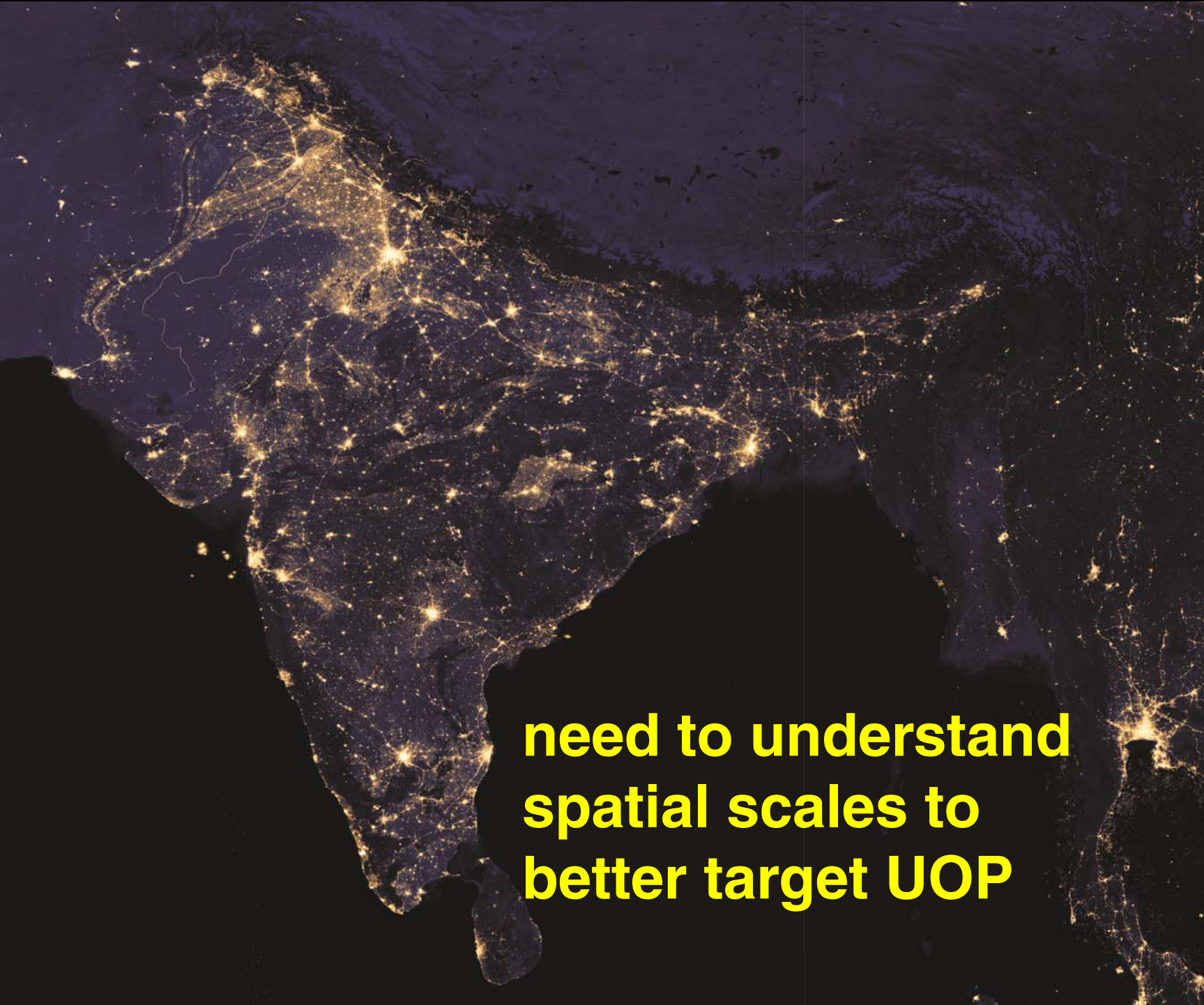
**What are “city
clusters”?**

2 billion living in Asia's cities and towns



**from towns to megacities
to megalopolis**



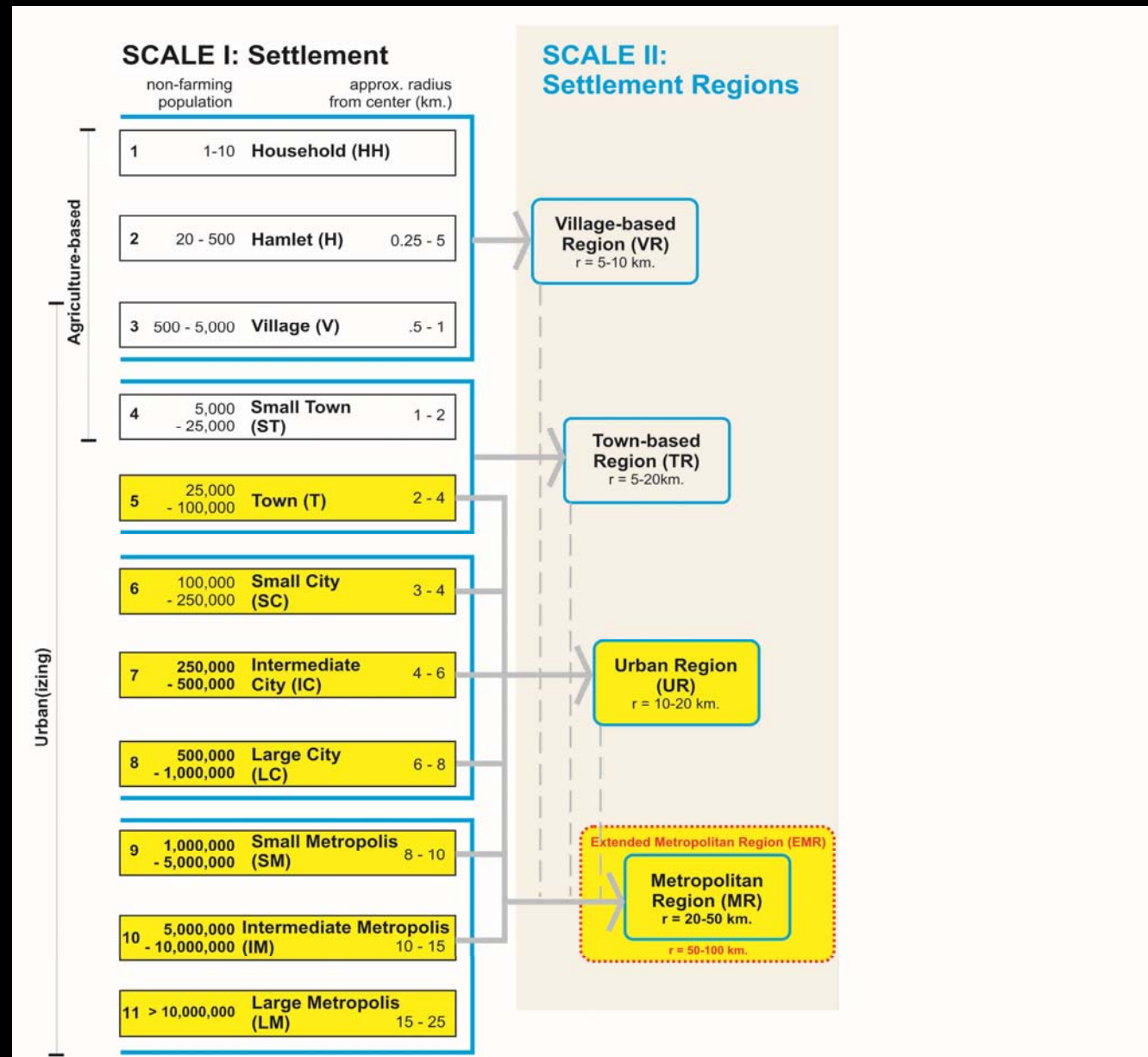
A satellite night-time image of the Indian subcontinent. The landmass is outlined against the dark background of the surrounding oceans. The entire land area is covered with a dense network of yellow and orange lights, representing urban areas, cities, and a vast road network. The lights are more concentrated in the northern and western parts of the continent, with a few major bright spots indicating large metropolitan areas. The text "need to understand spatial scales to better target UOP" is overlaid in yellow on the lower right portion of the image.

**need to understand
spatial scales to
better target UOP**

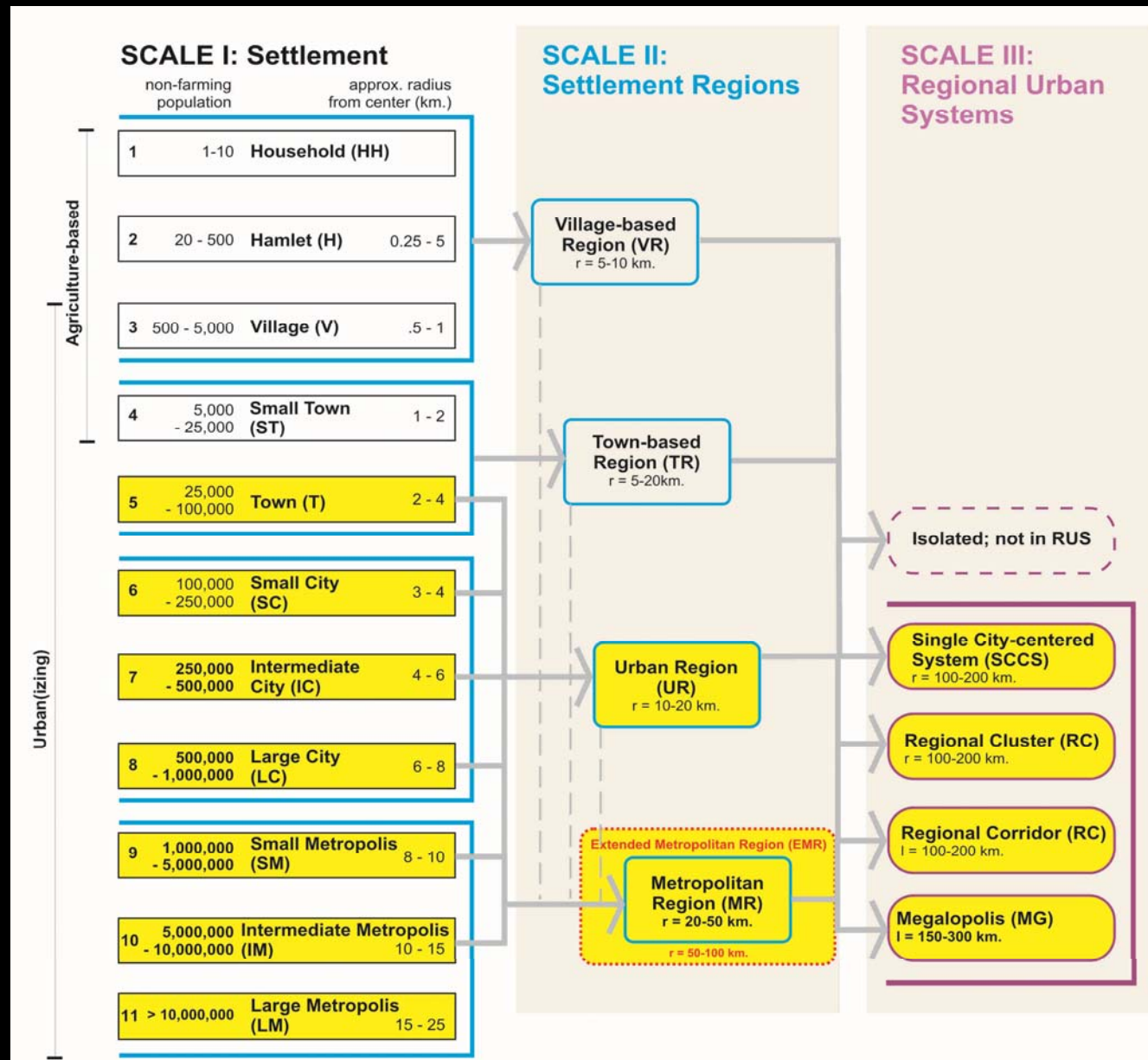
SCALE I: Settlement

	non-farming population		approx. radius from center (km.)
Agriculture-based	1	1-10 Household (HH)	
	2	20 - 500 Hamlet (H)	0.25 - 5
	3	500 - 5,000 Village (V)	.5 - 1
	4	5,000 - 25,000 Small Town (ST)	1 - 2
Urban(izing)	5	25,000 - 100,000 Town (T)	2 - 4
	6	100,000 - 250,000 Small City (SC)	3 - 4
	7	250,000 - 500,000 Intermediate City (IC)	4 - 6
	8	500,000 - 1,000,000 Large City (LC)	6 - 8
	9	1,000,000 - 5,000,000 Small Metropolis (SM)	8 - 10
	10	5,000,000 - 10,000,000 Intermediate Metropolis (IM)	10 - 15
	11	> 10,000,000 Large Metropolis (LM)	15 - 25

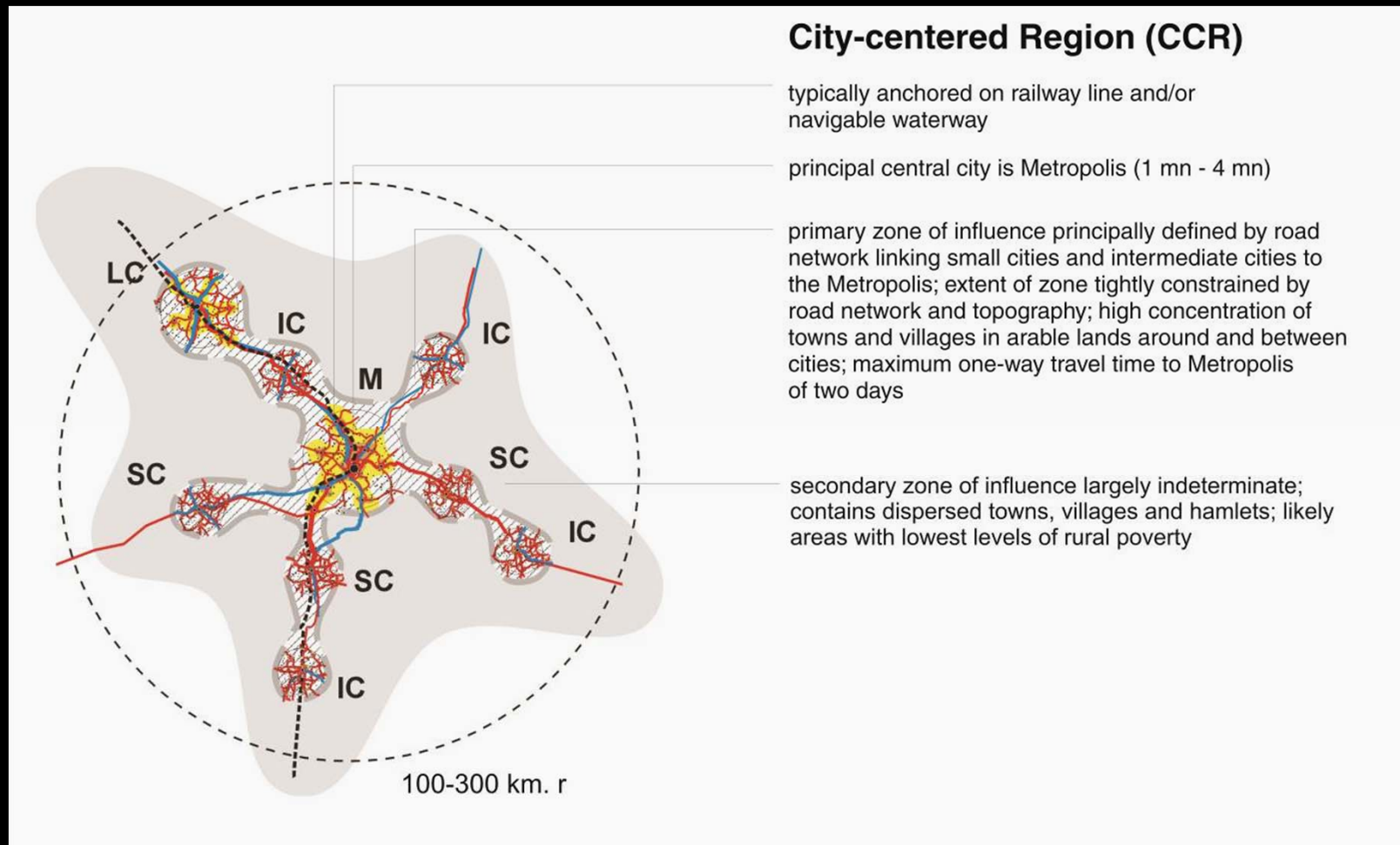
Scale 1: Human Settlements



Scale 2: Settlement Regions

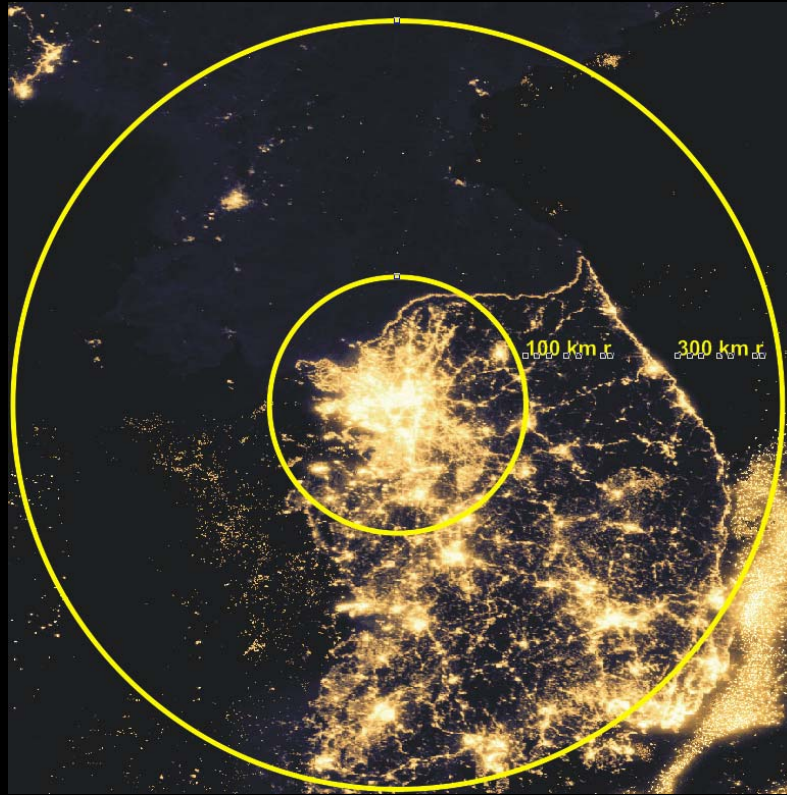


Scale 3: Regional Urban Systems

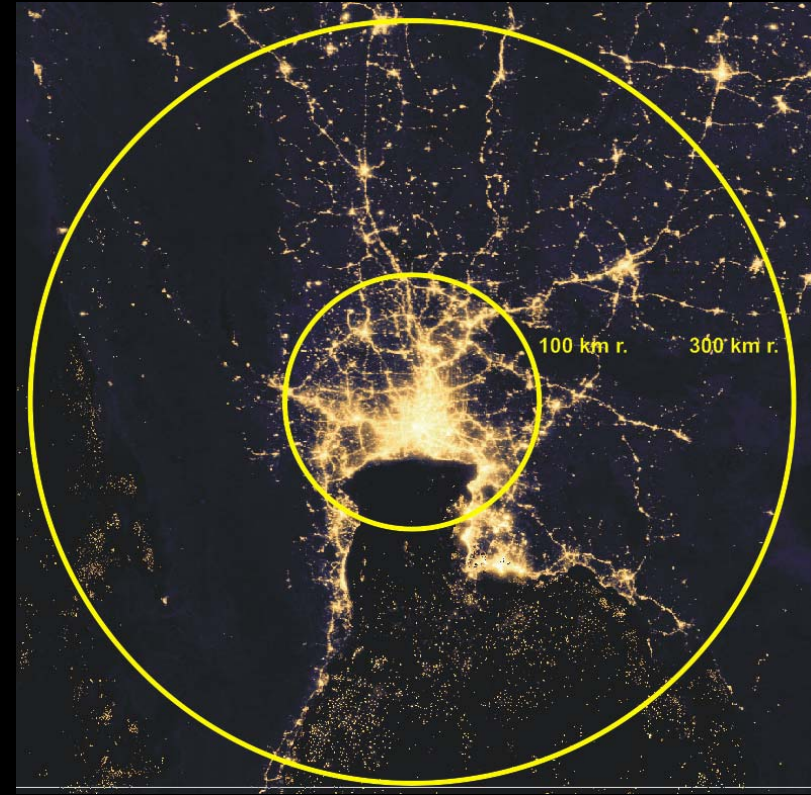


radius of 100-300 km
e.g. Seoul, Bangkok

RUS: City-centered Region



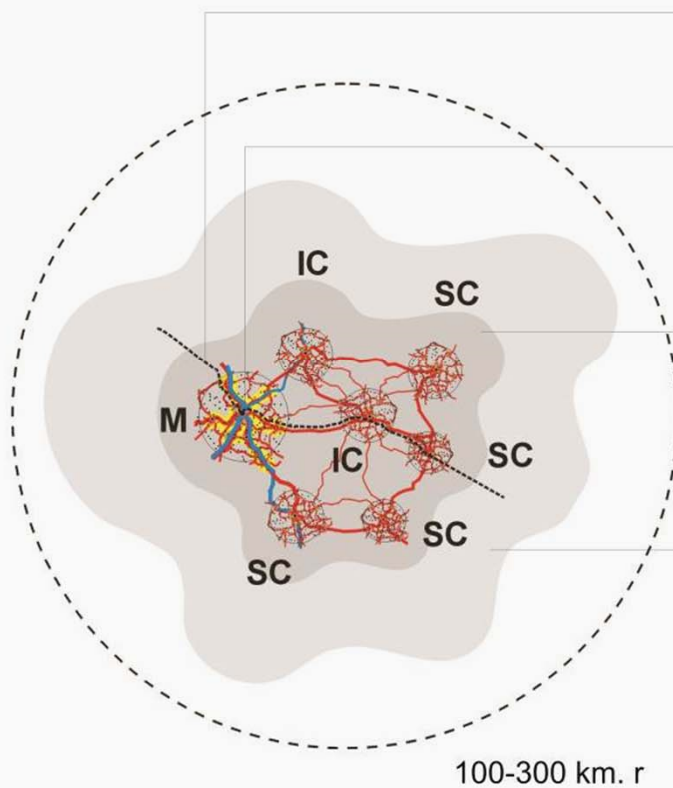
Seoul



Bangkok

RUS: City-centered Region

Clusters (CL)



anchored on railway line or navigable waterway, but road network looped and radial, providing for greater inter-connection between cities

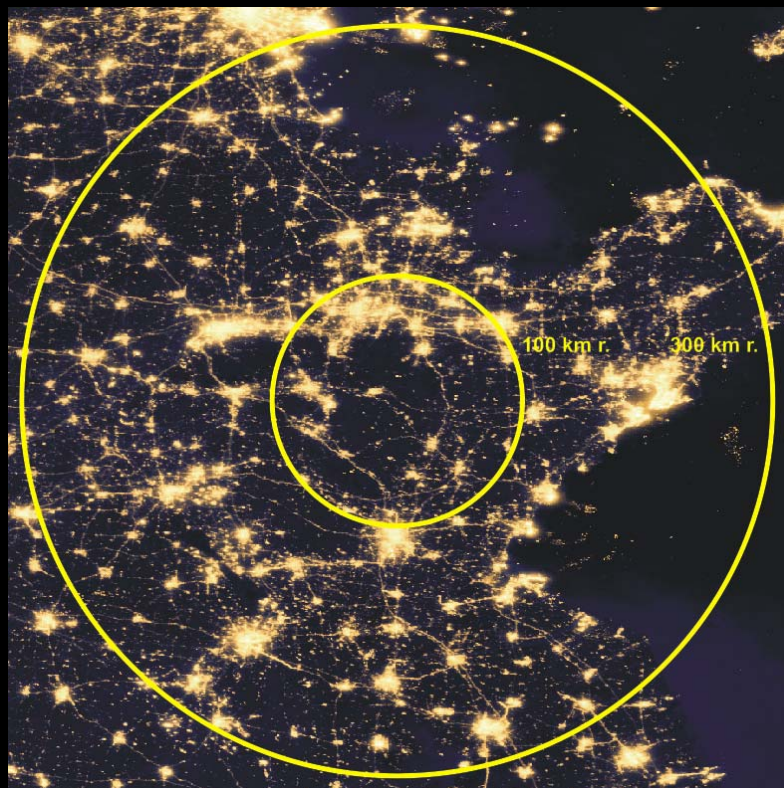
although cluster has at least one metropolis or large city, no single city has (as yet) become prime central node

primary zone of influence more tightly delineated than in CCRs; network of large, intermediate, and small cities with myriad towns and villages in wider, more contiguous area of arable land; maximum one-day travel time from farthest city in cluster

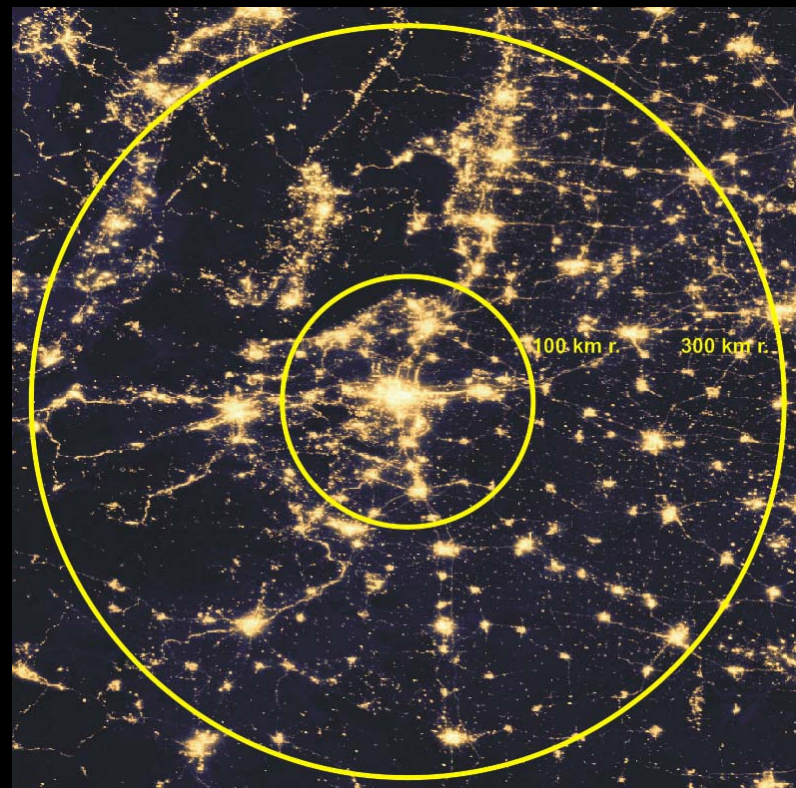
secondary zone of influence more determinate than in ccrs, largely due to higher concentration of other regional urban systems in close proximity

radius of 100-300 km
e.g. Shandong, Henan Clusters

RUS: Clusters



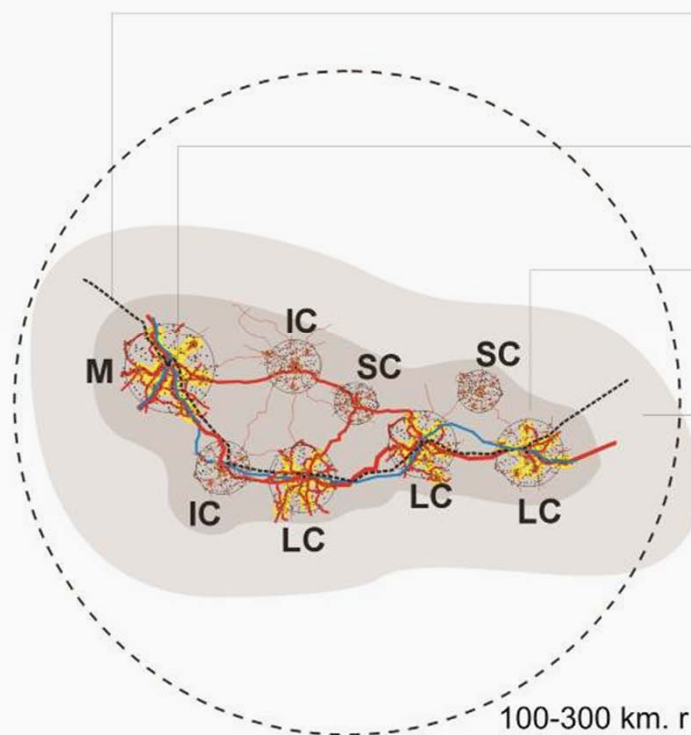
Shandong Cluster



Henan Cluster

RUS: Clusters

Regional Corridors (COR)



central spine of Corridor formed by major railway, navigable waterway, and/or coastline; generally in conjunction with expressway or highway

as in Clusters, at least one Metropolis but many Large, Intermediate and Small Cities; no single city is central economic node

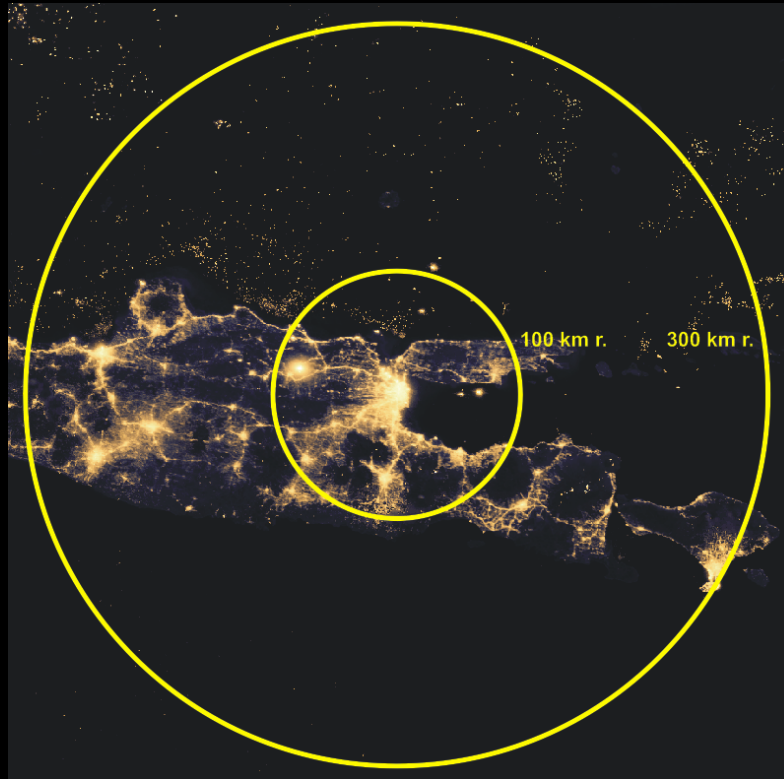
primary zone of influence extends approx. 100 km from central spine; high densities; high concentration of towns and villages; maximum two-day one-way drive between cities along corridor

secondary zone of influence generally as determinate as in Clusters

radius of 100-300 km

e.g. East Java, Ahmedabad-Mumbai Corridors

RUS: Regional Corridors

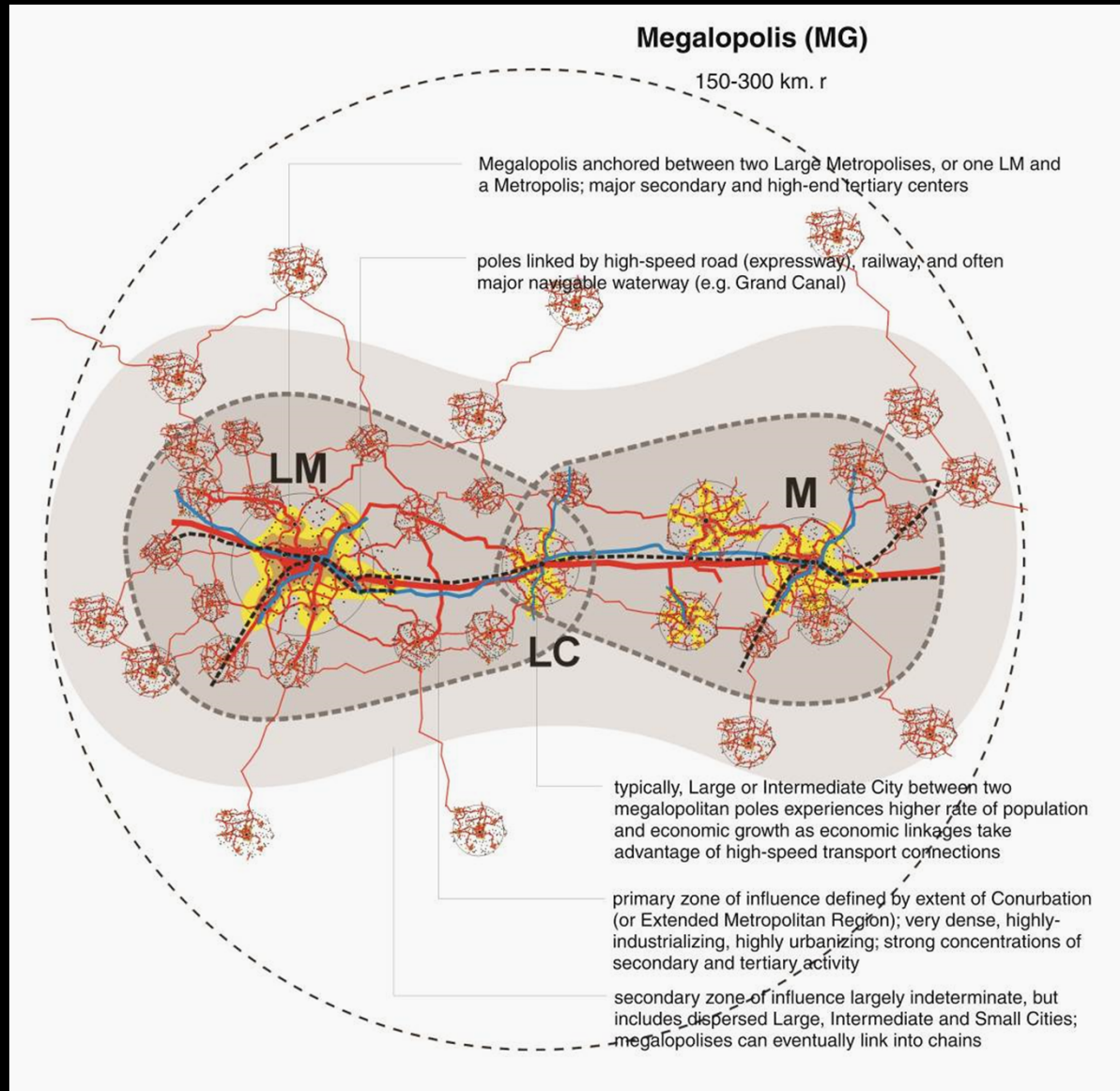


East Java Corridor



**Ahmedabad-Mumbai
Corridor**

RUS: Regional Corridors



Tokaido
Megalopolis

Yangtze
Delta
Megalopolis

Pearl River
Delta
Megalopolis

RUS: Megalopolis



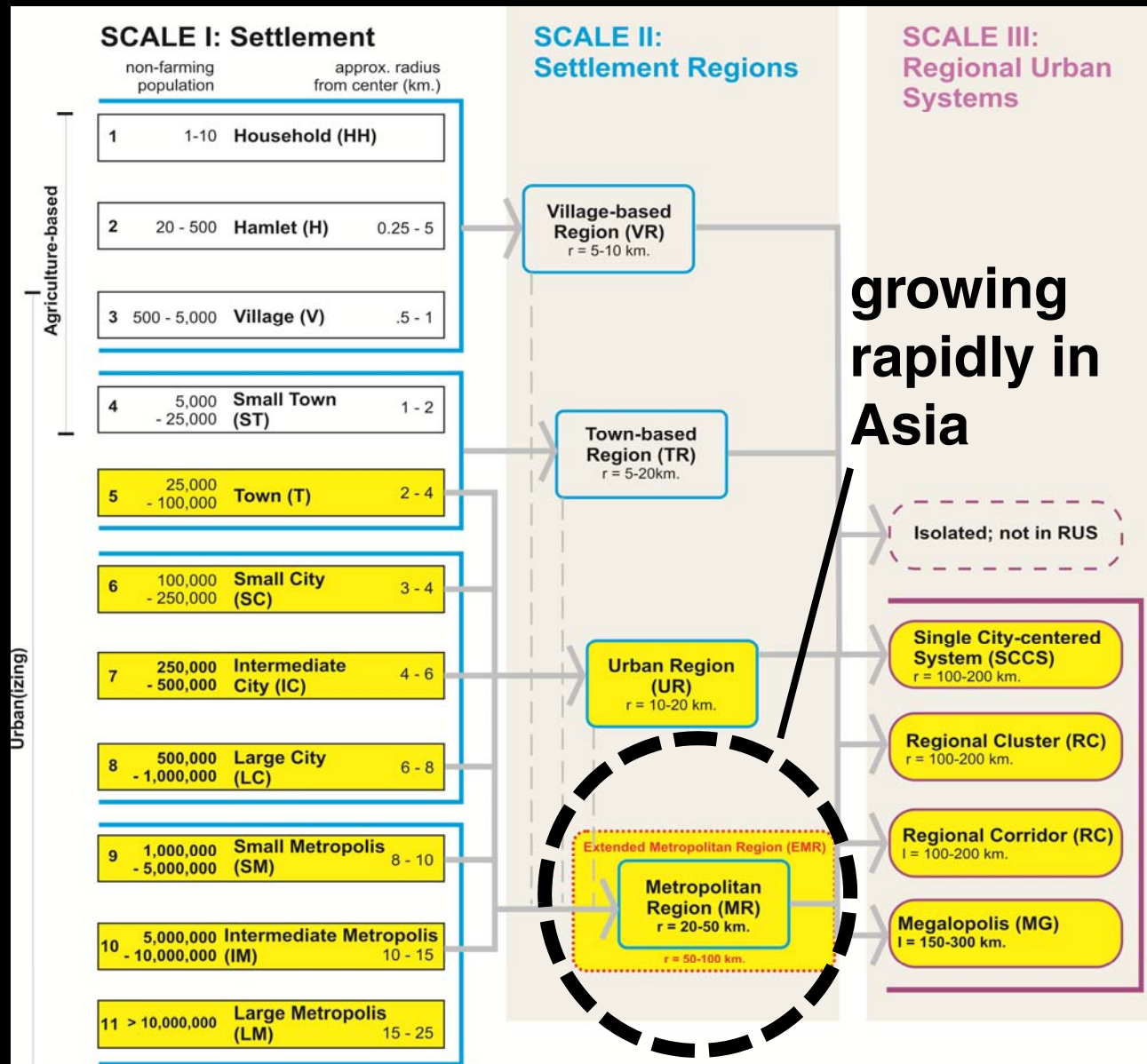
**Yangtze Delta
Megalopolis**



**Tokaido
Megalopolis**

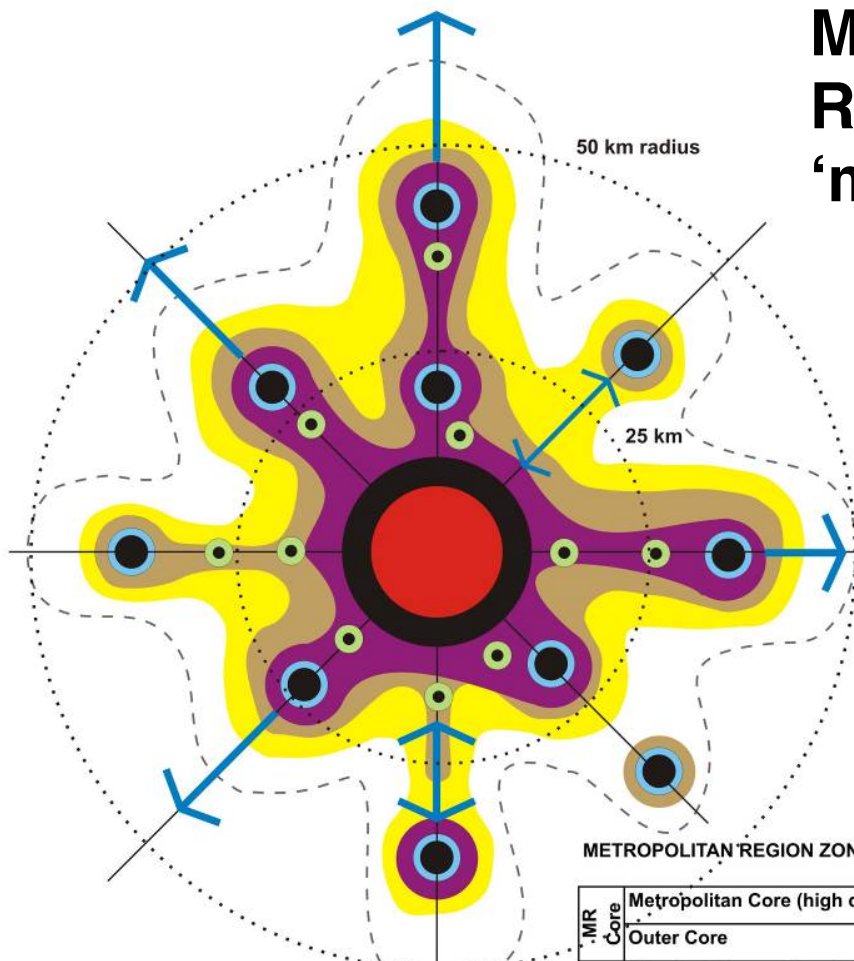
RUS: Megalopolis

Regional Urban Systems are too big and complex for meaningful and manageable interventions in the medium term by governments ... and ADB.



Focus on Metropolitan and Extended Metropolitan Regions

Most Metropolitan Regions are **not** 'megacities'

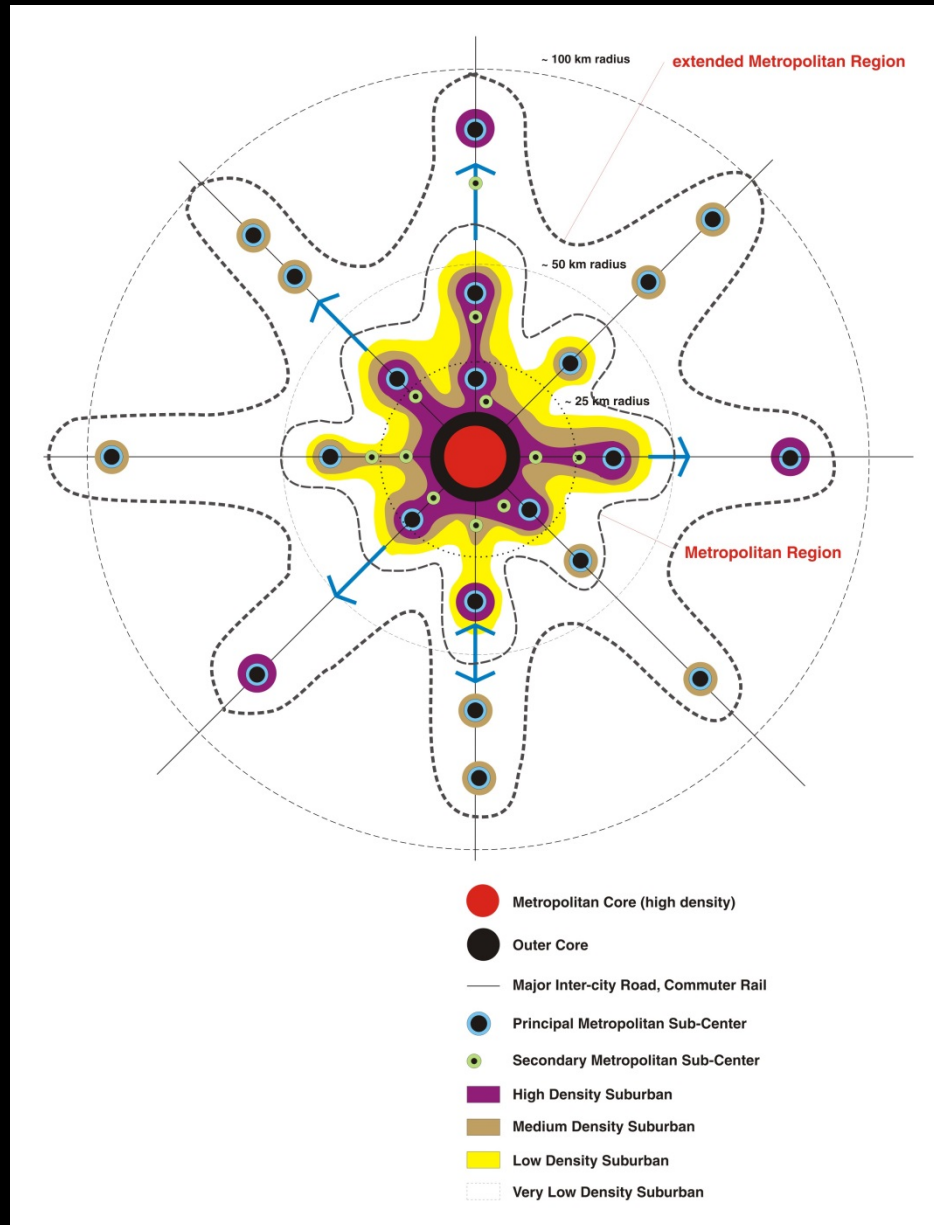


- Metropolitan Core (high density)
- Outer Core
- Major Inter-city Road, Commuter Rail
- Principal Metropolitan Sub-Center
- Secondary Metropolitan Sub-Center
- High Density Suburban
- Medium Density Suburban
- Low Density Suburban
- Very Low Density Suburban

**core city of 1 million;
population within 50
km radius of central
city**

METROPOLITAN REGION ZONES			LOCATION	DENSITY	FORM
MR Core	Metropolitan Core (high density)	MC	central in region	> 15,000 inh/km2	principal regional node
	Outer Core	OC	surrounding Metropolitan Core	5,000 - 15,000	concentric ring
Suburban Areas	Principal Metropolitan Sub Centers	PMSC	dispersed, mostly within 50 km radius	3,500 - 15,000	concentrated, large sub-regional node
	Secondary Metropolitan Sub Centers	SMSC	dispersed, mostly within 50 km radius	3,500 - 5,000	smaller concentrated node
	High Density Suburban	HDS	surrounding OC, PMSC MSC	2,000 - 5,000	concentric around OC; corridors, clusters
	Medium Density Suburban	MDS	connecting OC to PMSC, MSC	1,000 - 2,000	clearly-defined, often contiguous corridors and clusters
	Low Density Suburban	LDS	dispersed throughout Metropolitan Region	500 - 1,000	dispersed
	Very Low Density Suburban	VLDS	dispersed throughout Metropolitan Region	250 - 500	dispersed

Generalized Spatial Model of Metropolitan Region



**Extended
Metropolitan
Regions: 2-3 hour
drivetime to central
city**

**Daily supply of food,
construction
materials,
intermediate inputs
(e.g. auto parts)**

Generalized Spatial Model of Extended Metropolitan Region

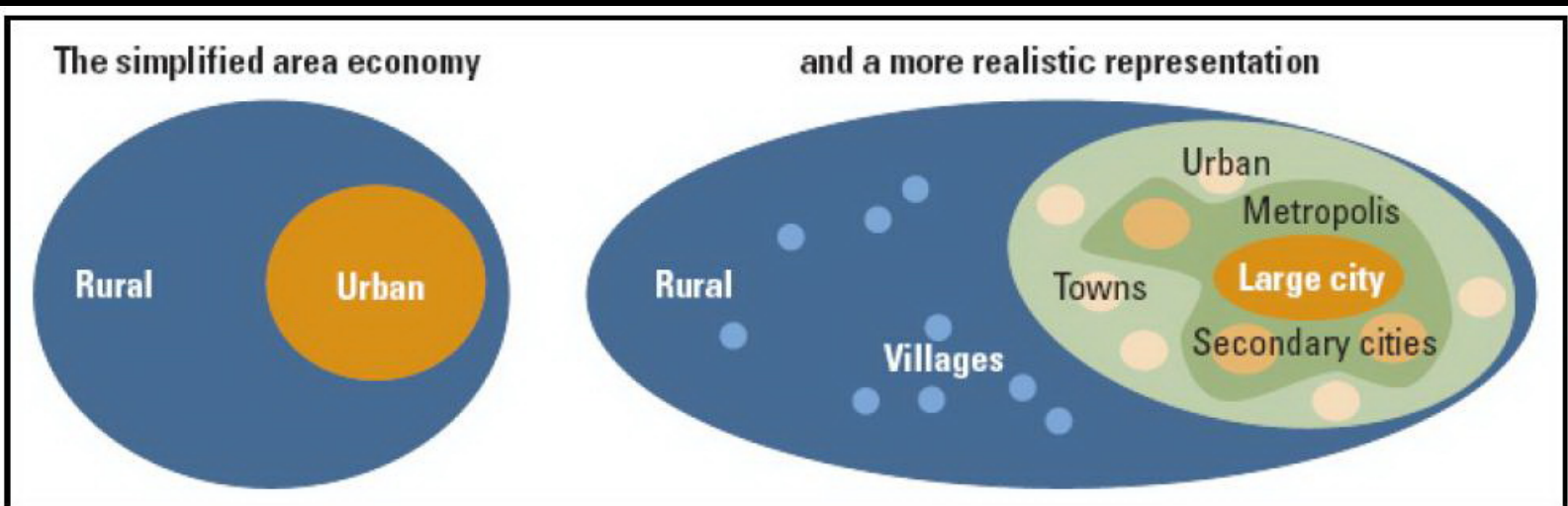
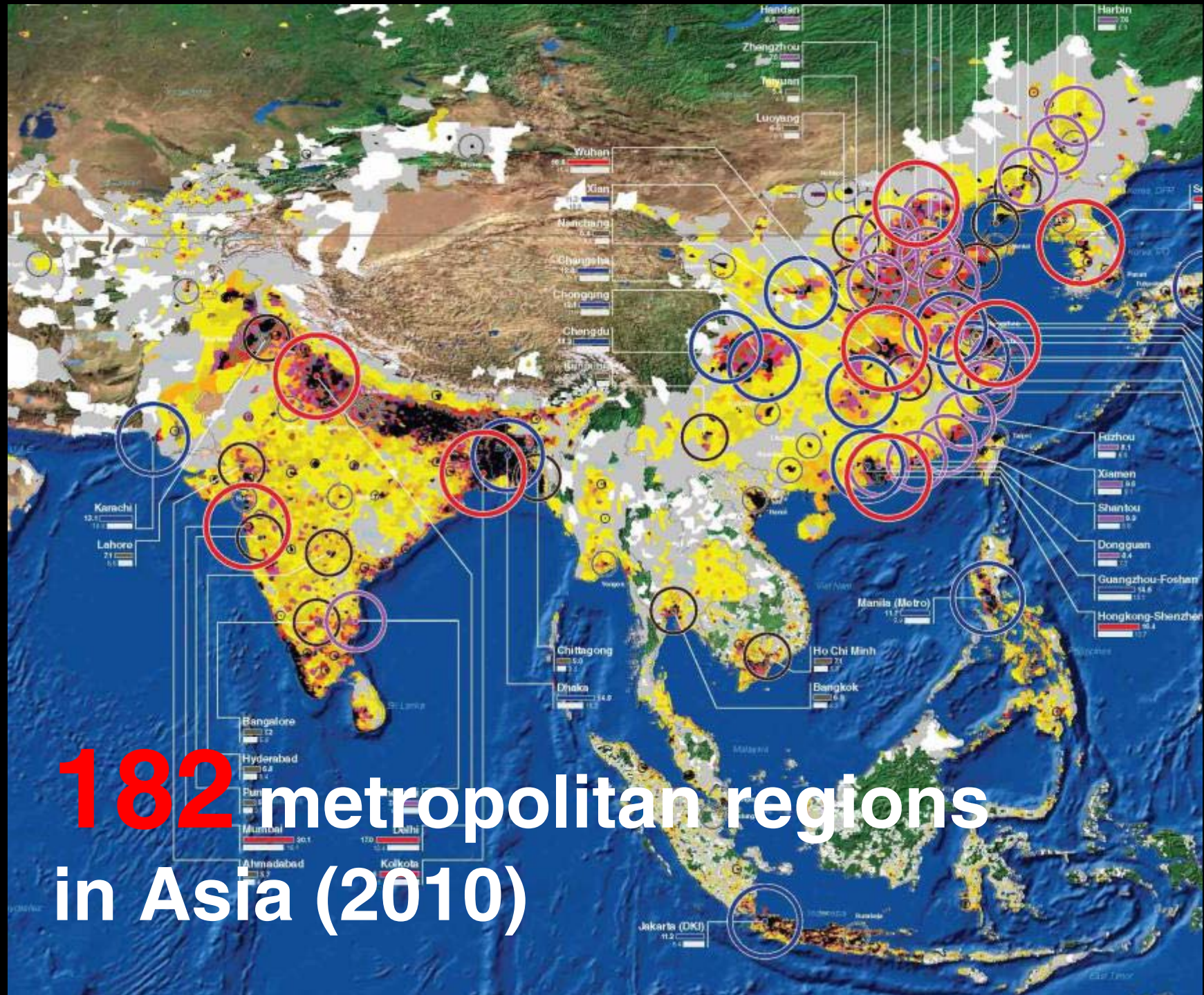
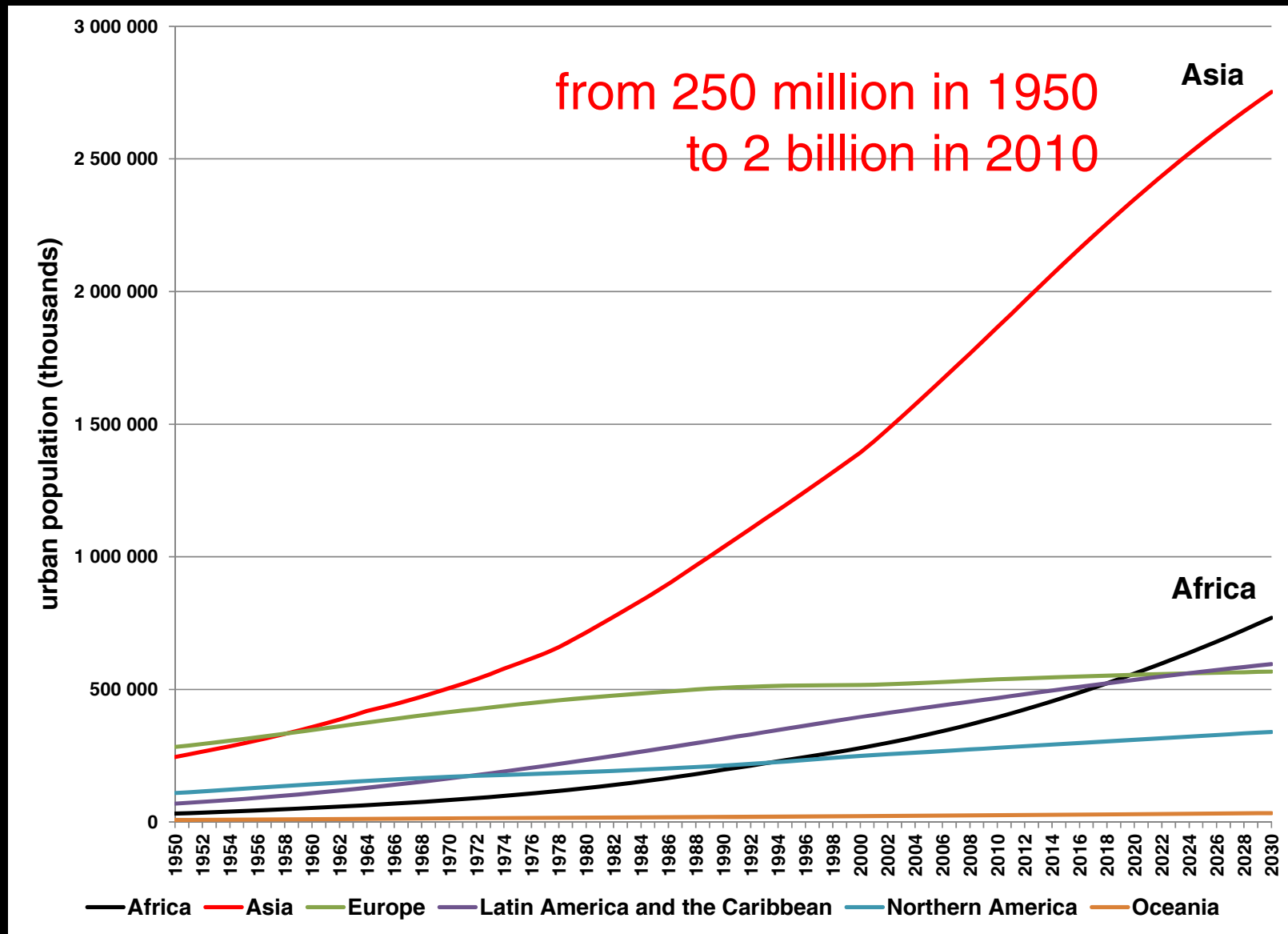


Figure 2 Spectrum of rural and urban settlements (World Bank, 2009)

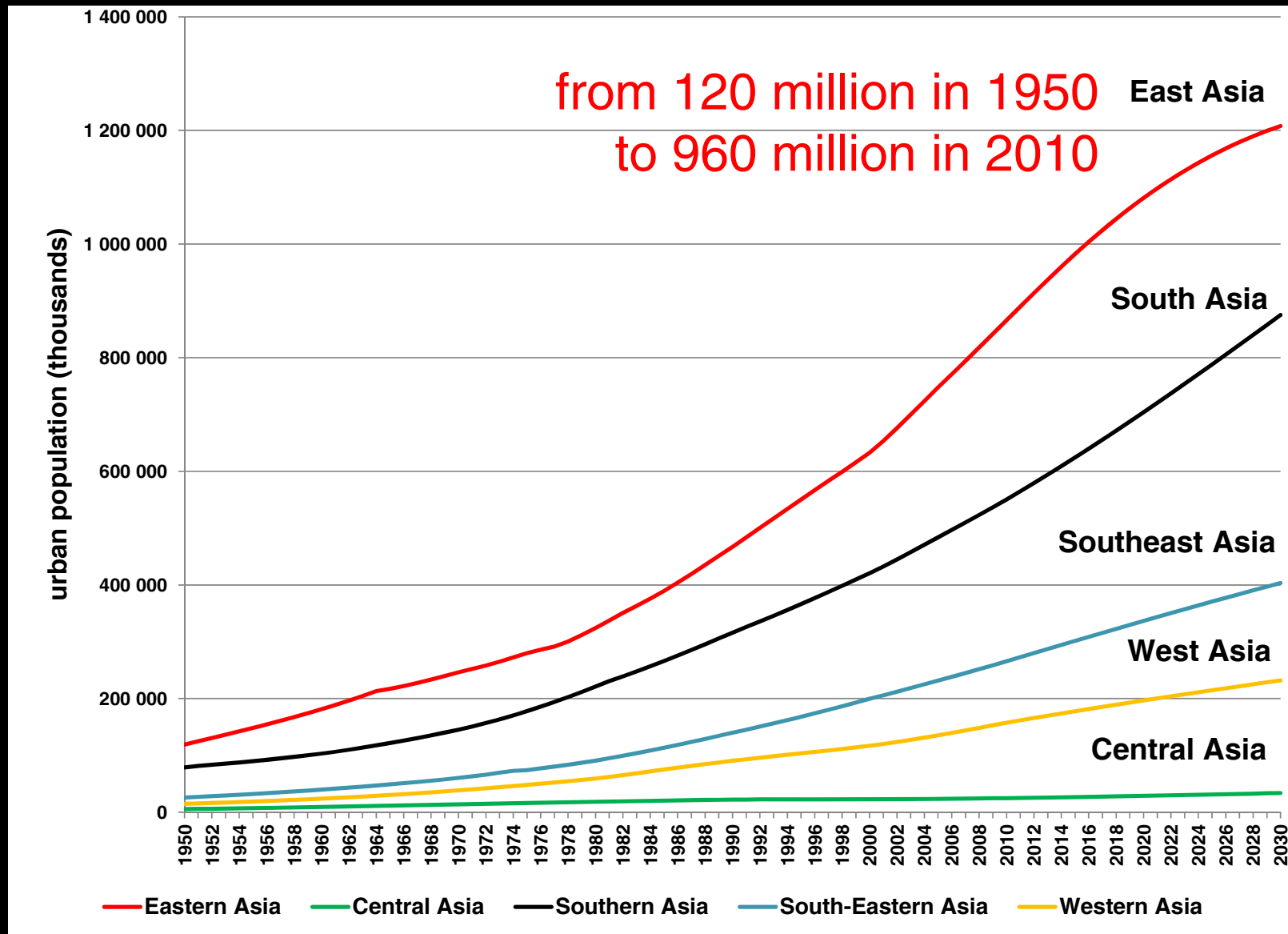


-
- **857** million in 2010
 - **144** million more than in 2000
 - **2 x** Asia's total pop. growth rate last decade

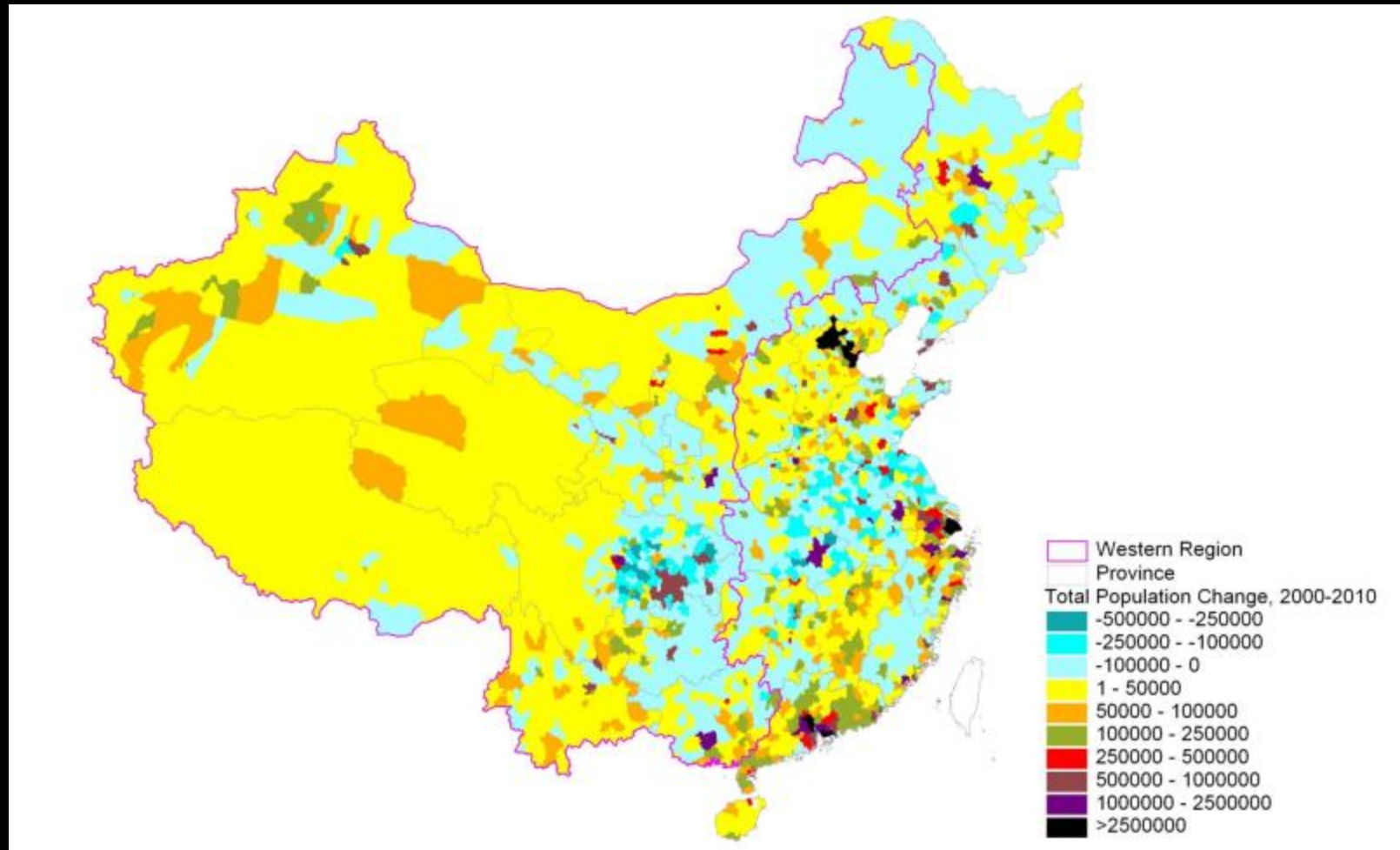
Recent Urbanization Trends in Asia



Global Urbanization: 1950-2030

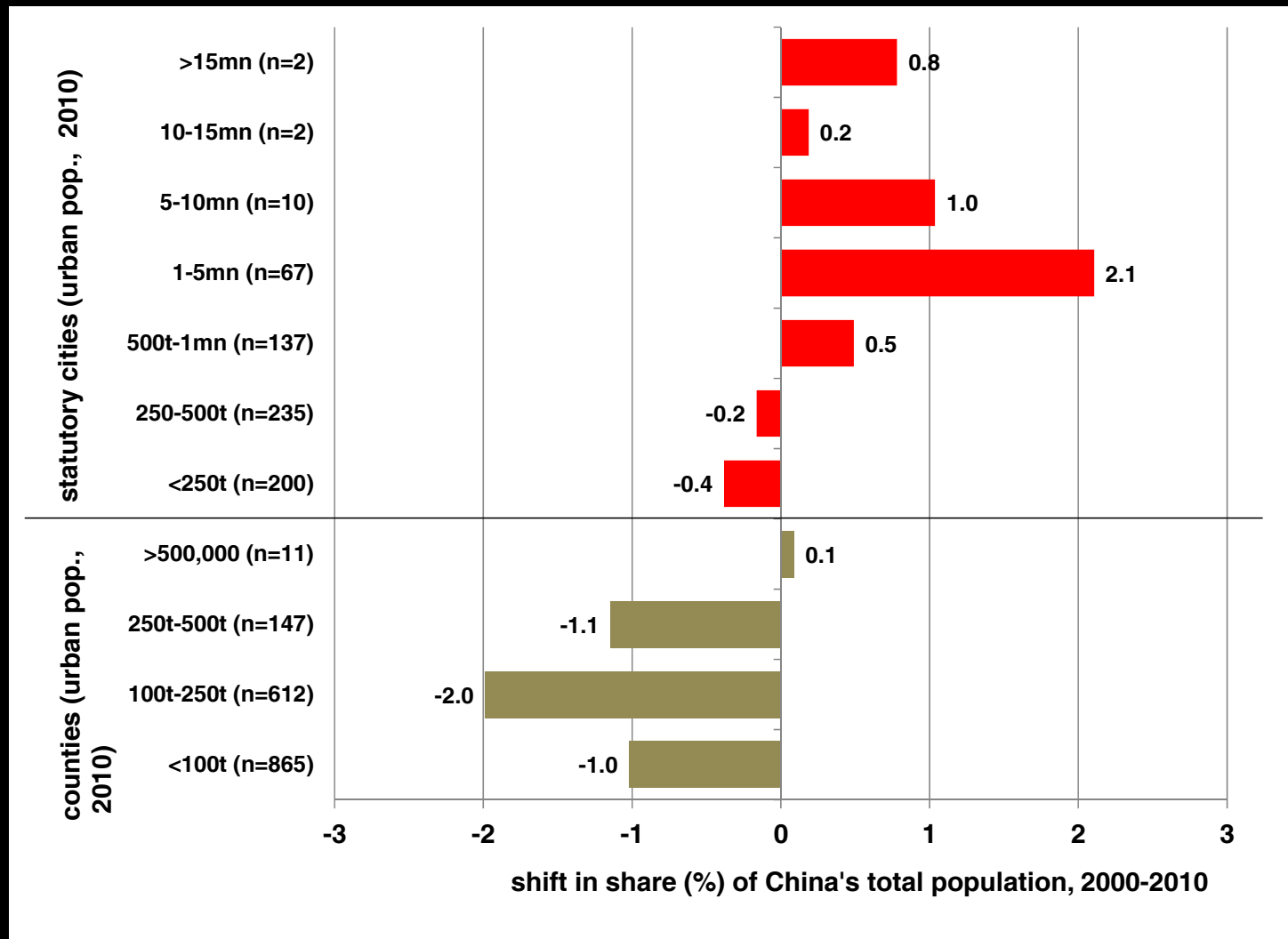


Urbanization Trends in Asia: 1950-2030



**blue areas: population loss during
past decade**

Urbanization Trends in PRC: 2000-2010

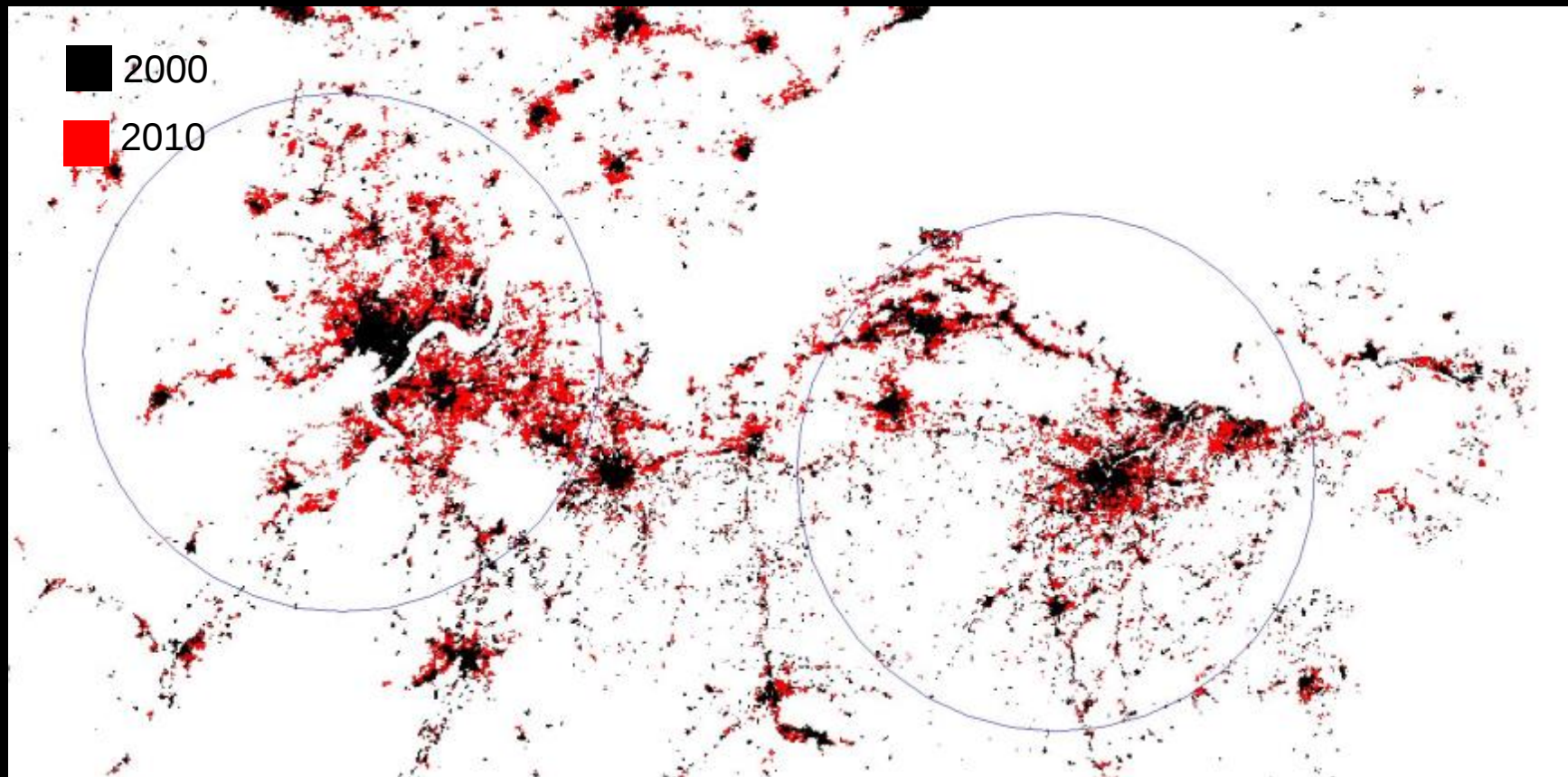


shift to larger cities in PRC

Urbanization Trends in PRC: 2000-2010

Urban Built-up Land

Hangzhou and Ningbo sprawl

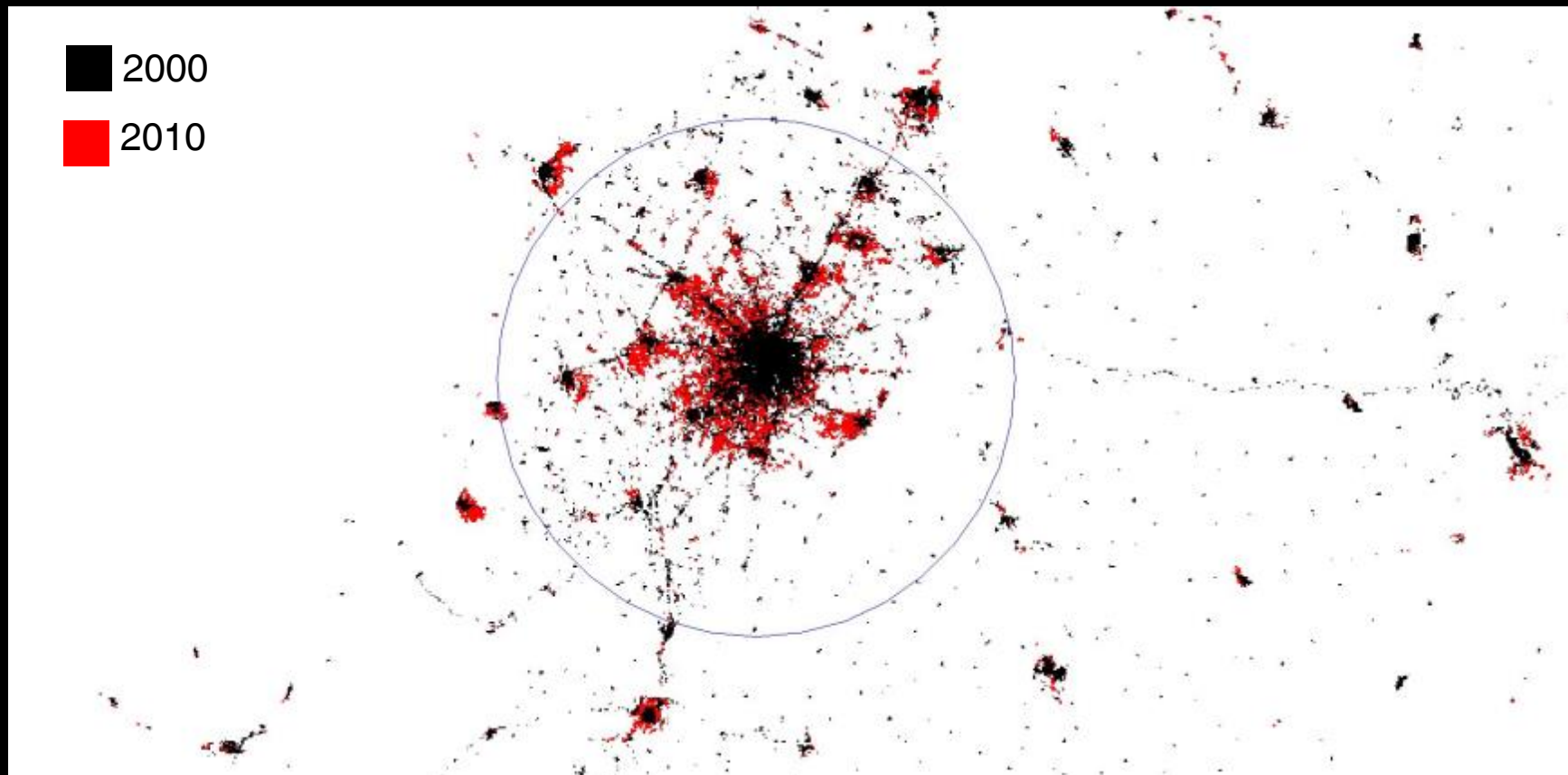


Source: Nelson Institute's Center for Sustainability and the Global Environment at the University of Wisconsin-Madison (2013) World Bank

Urbanization Trends in PRC: 2000-2010

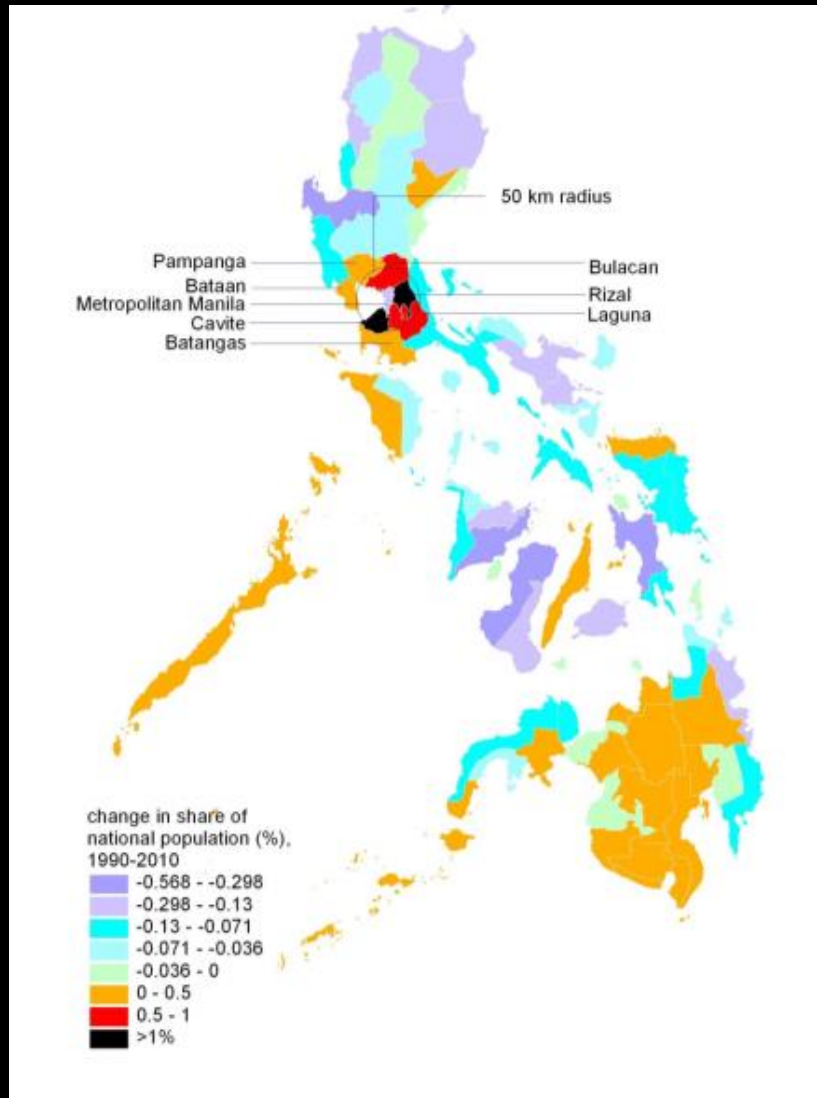
Urban Built-up Land

Chengdu sprawl



Source: Nelson Institute's Center for Sustainability and the Global Environment at the University of Wisconsin-Madison (2013) World Bank

Urbanization Trends in PRC: 2000-2010

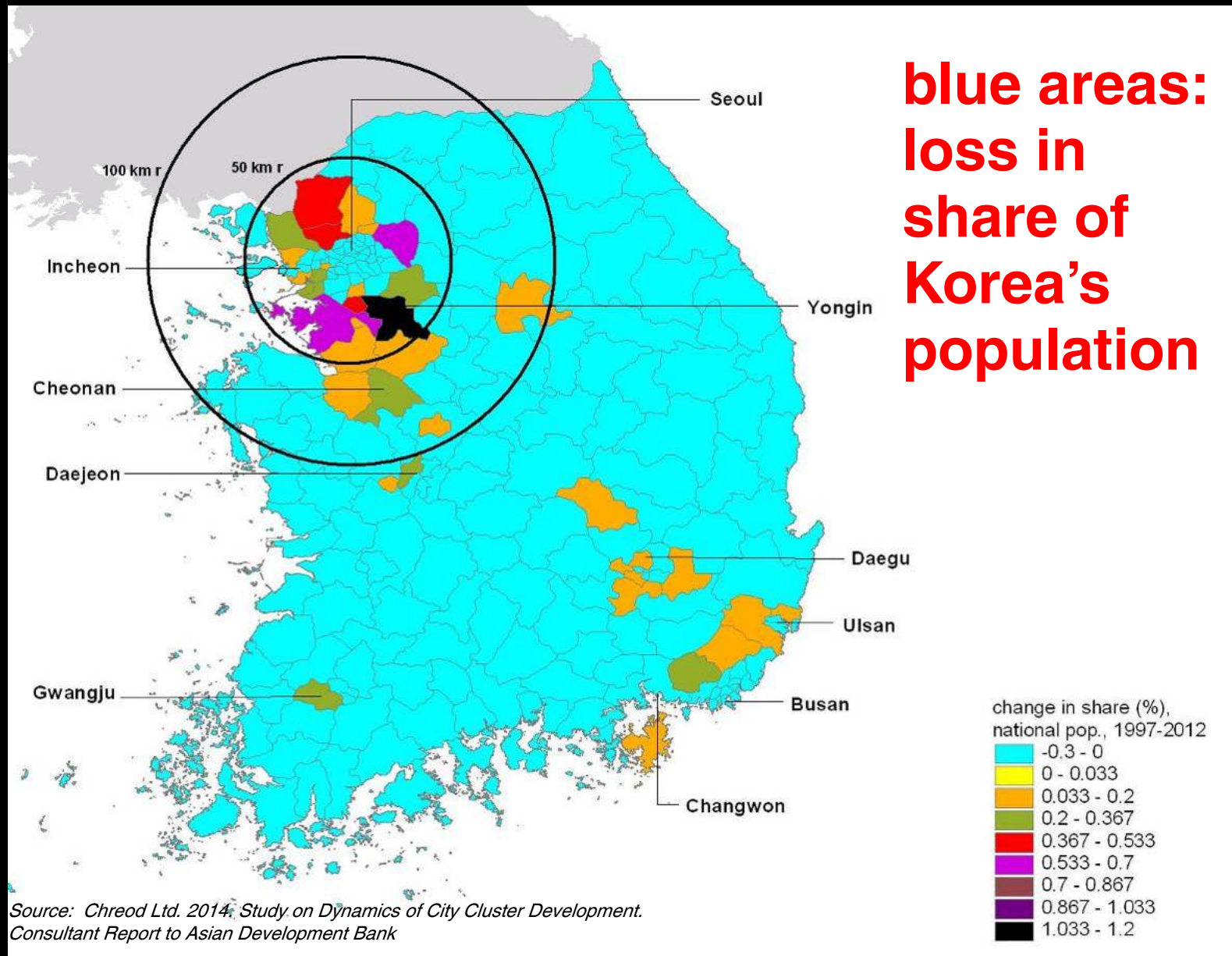


blue and purple areas: loss in share of Philippines' population during past decade

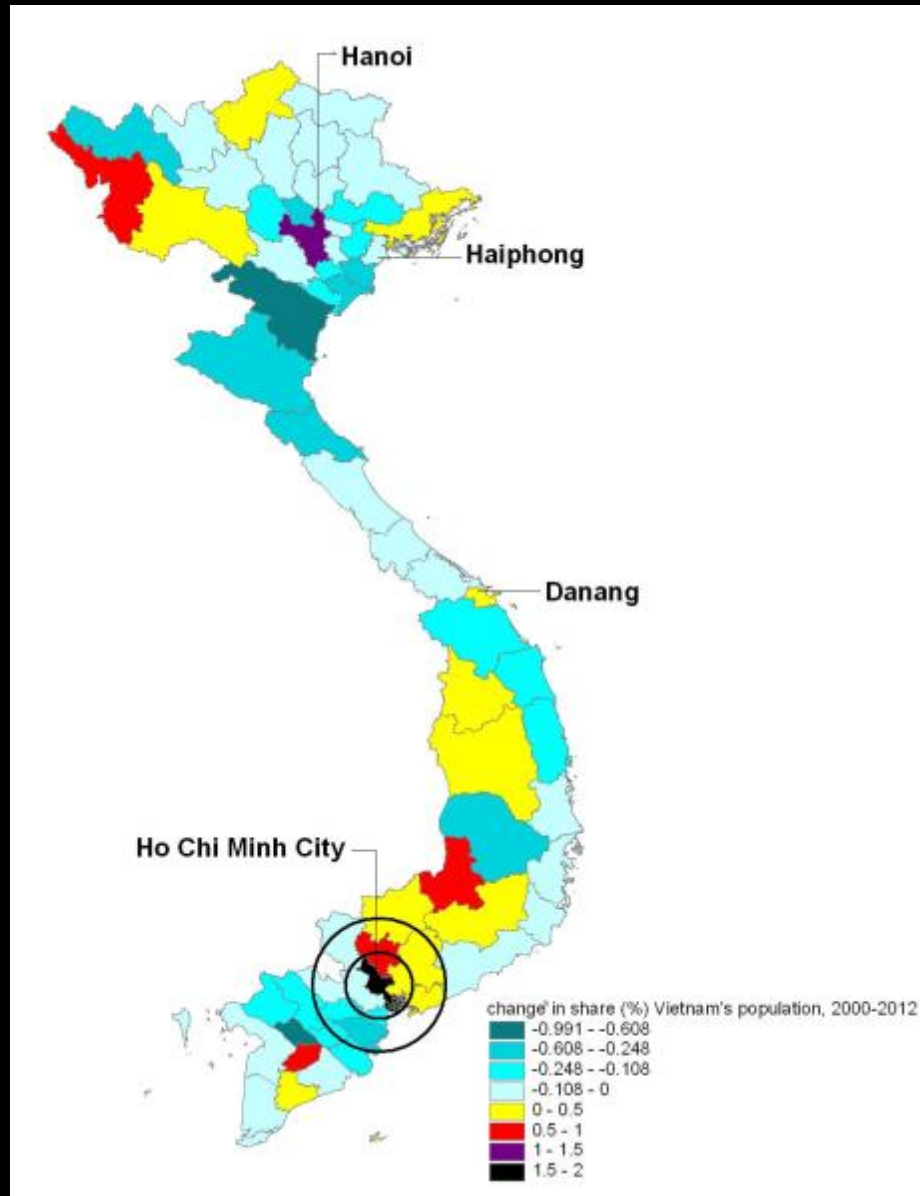
Manila Metropolitan Region is principal magnet for migrants and firms

Source: Chreod Ltd. 2014. Study on Dynamics of City Cluster Development. Consultant Report to Asian Development Bank

Urbanization Trends in Philippines: 2000-2010



Urbanization Trends in Republic of Korea: 1997-2012



blue areas: loss of share of Vietnam's population during past decade

HCMC and Hanoi Metropolitan Regions are principal magnets for migrants and firms

Source: Chreod Ltd. 2014. Study on Dynamics of City Cluster Development. Consultant Report to Asian Development Bank

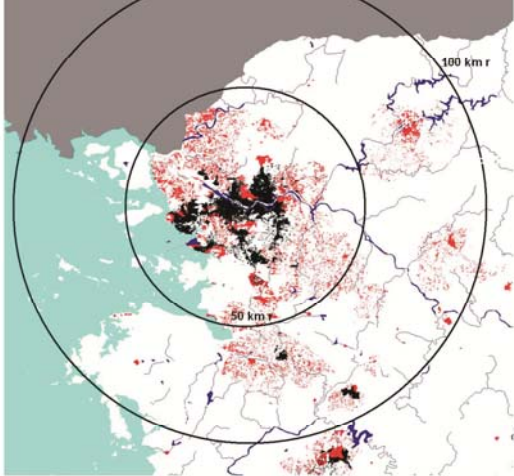
Urbanization Trends in Vietnam: 2000-2010

Metropolitan agglomeration economies are stronger than decentralization policies.

Whether we like it or not, people are moving to metropolitan regions across Asia.

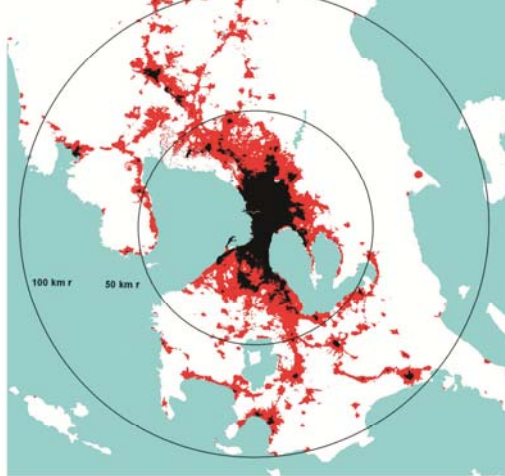
Case Studies of Four Extended Metropolitan Regions in Asia

Seoul EMR: 29.8 mn.



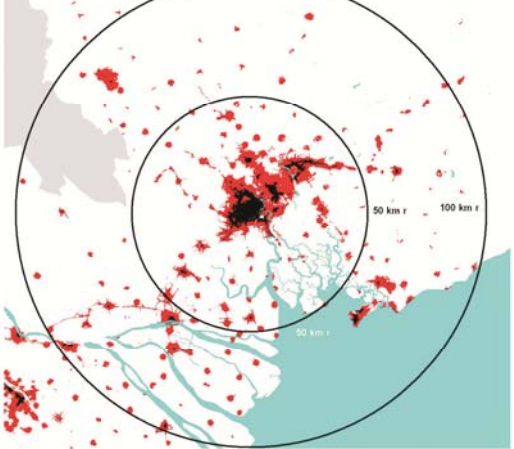
Seoul Extended Metropolitan Region

Manila EMR: 30.5 mn.



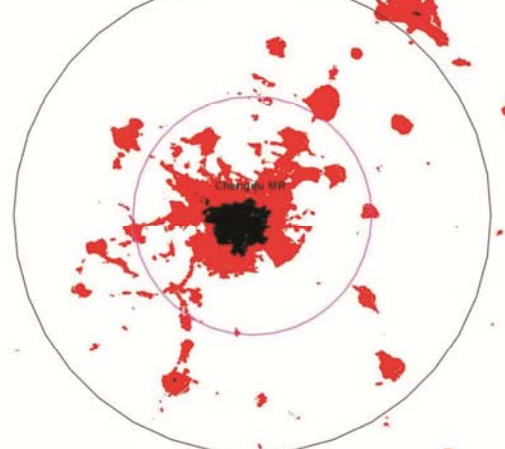
Manila Extended Metropolitan Region

HCMC EMR: 18.1 mn.



HCMC Extended Metropolitan Region

Chengdu EMR: 26.1 mn.



Chengdu Extended Metropolitan Region

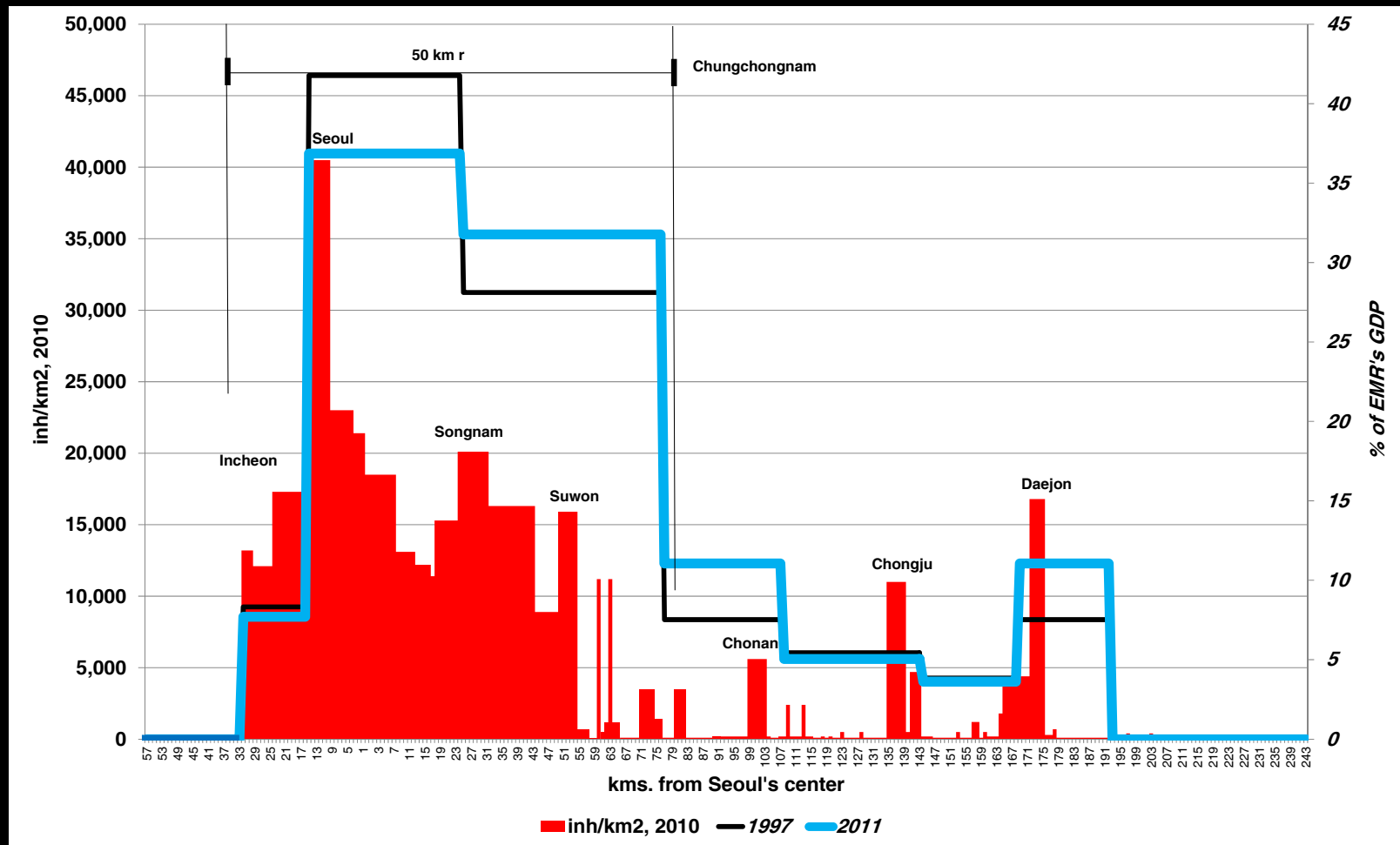
1000 - 5000 inh/km²

> 5000 inh/km²

Seoul growth management and densification compared to Manila and Chengdu sprawl.

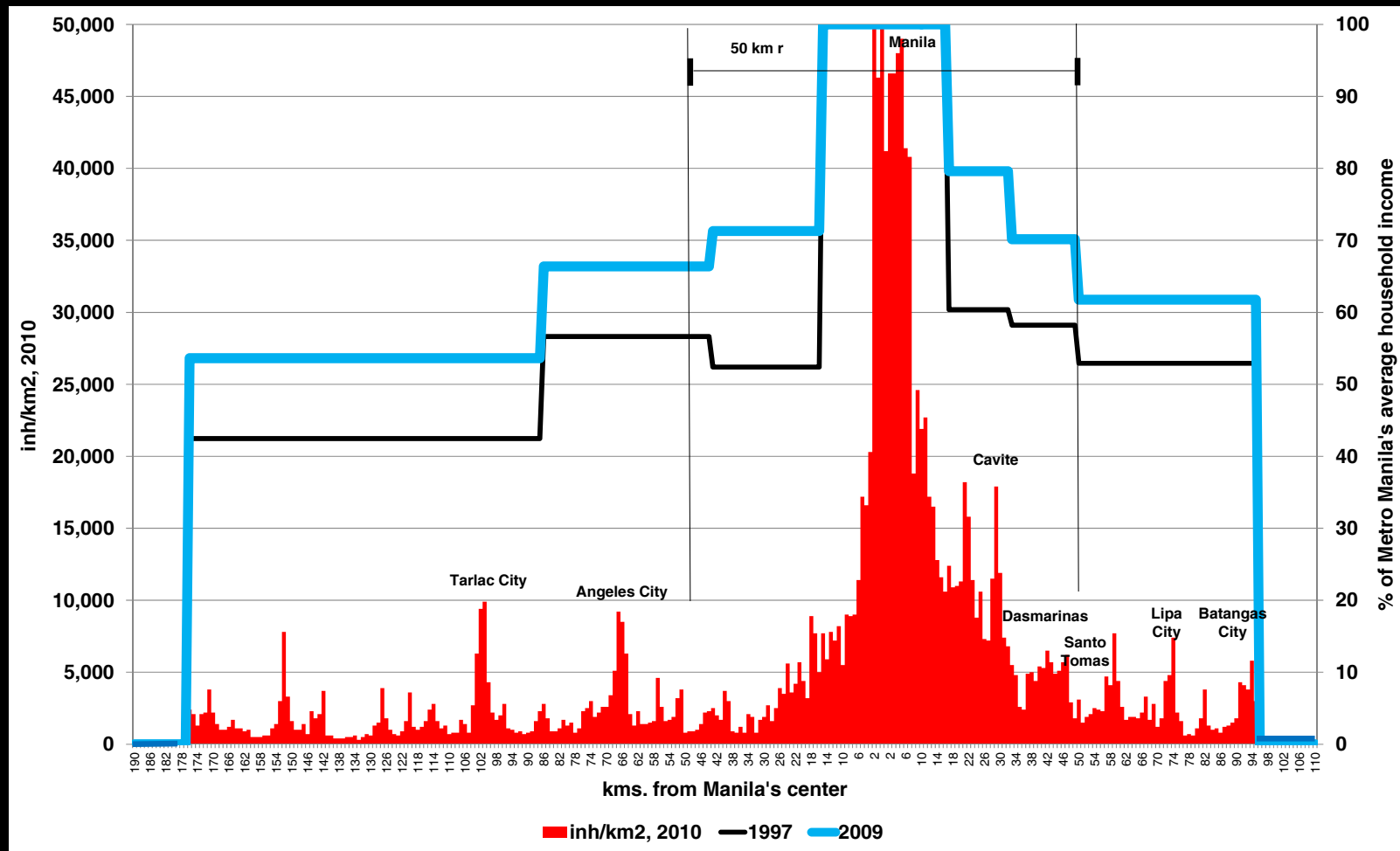
Source: Chreod Ltd. 2014. Study on Dynamics of City Cluster Development. Consultant Report to Asian Development Bank

Case Studies of Four EMRs in Asia



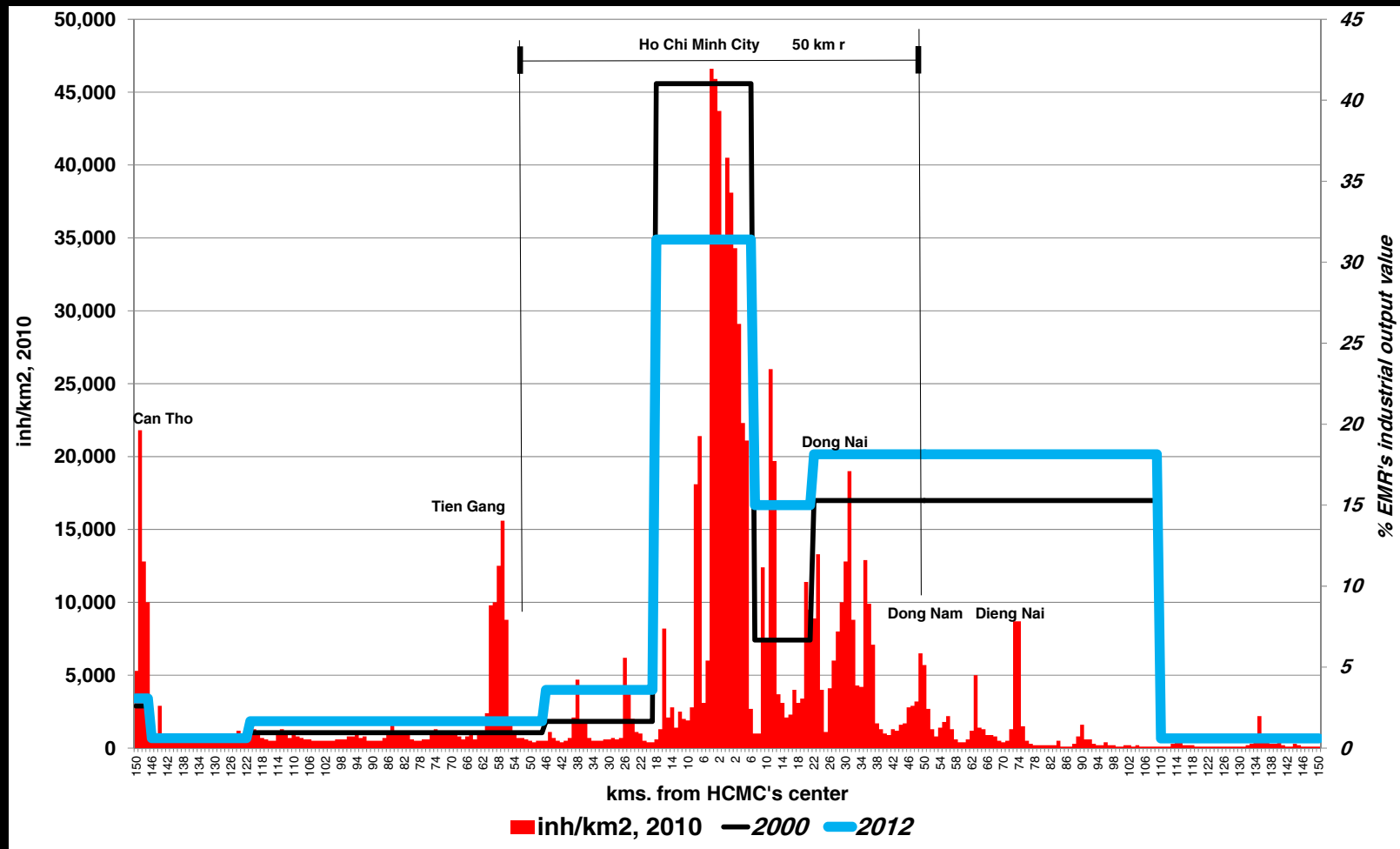
Spillovers of agglomeration benefits to suburban cities and towns, including to those 100 km away.

Case Studies of Four EMRs in Asia



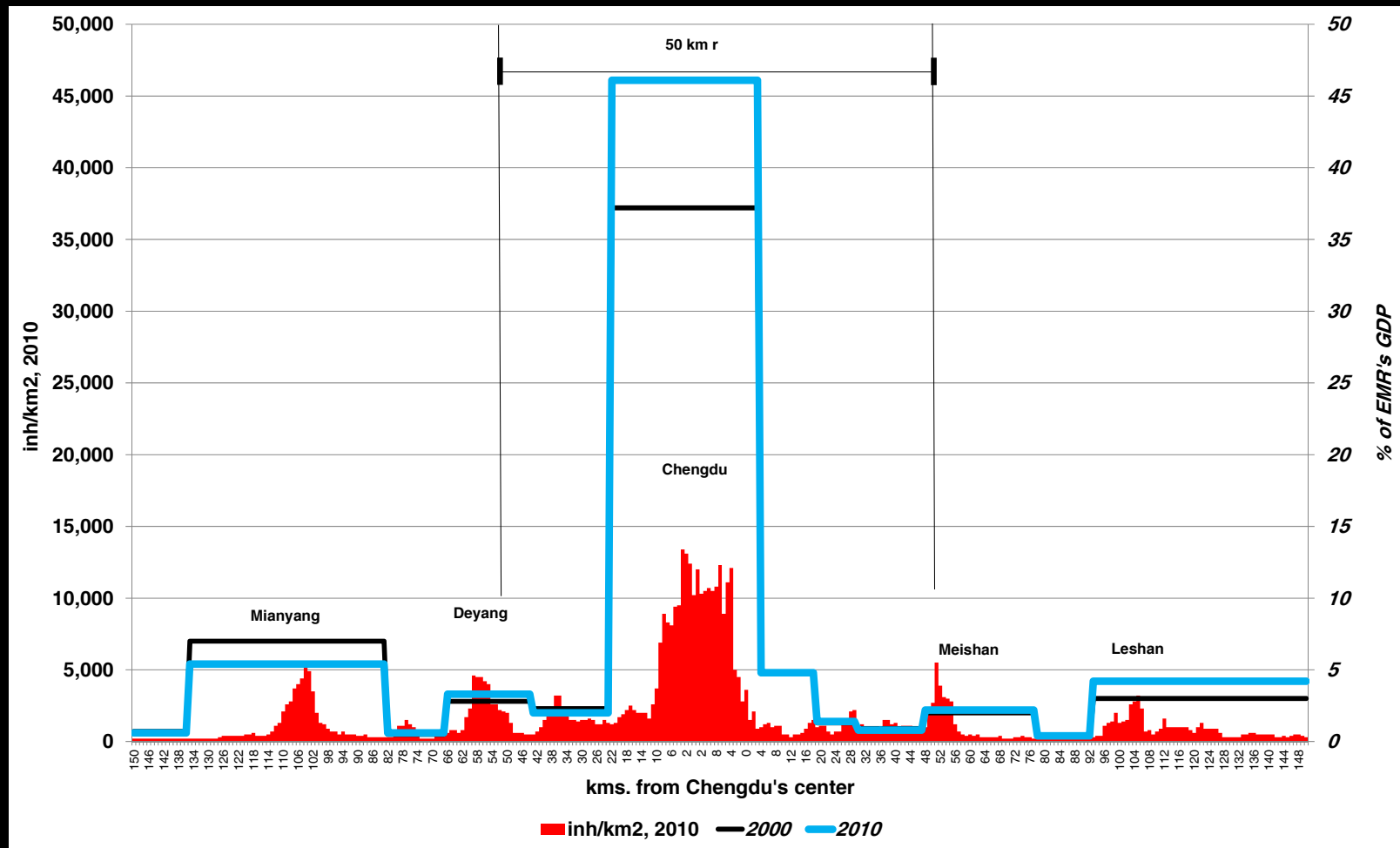
Spillovers of agglomeration benefits to suburban cities and towns, including to those 100 km away.

Case Studies of Four EMRs in Asia



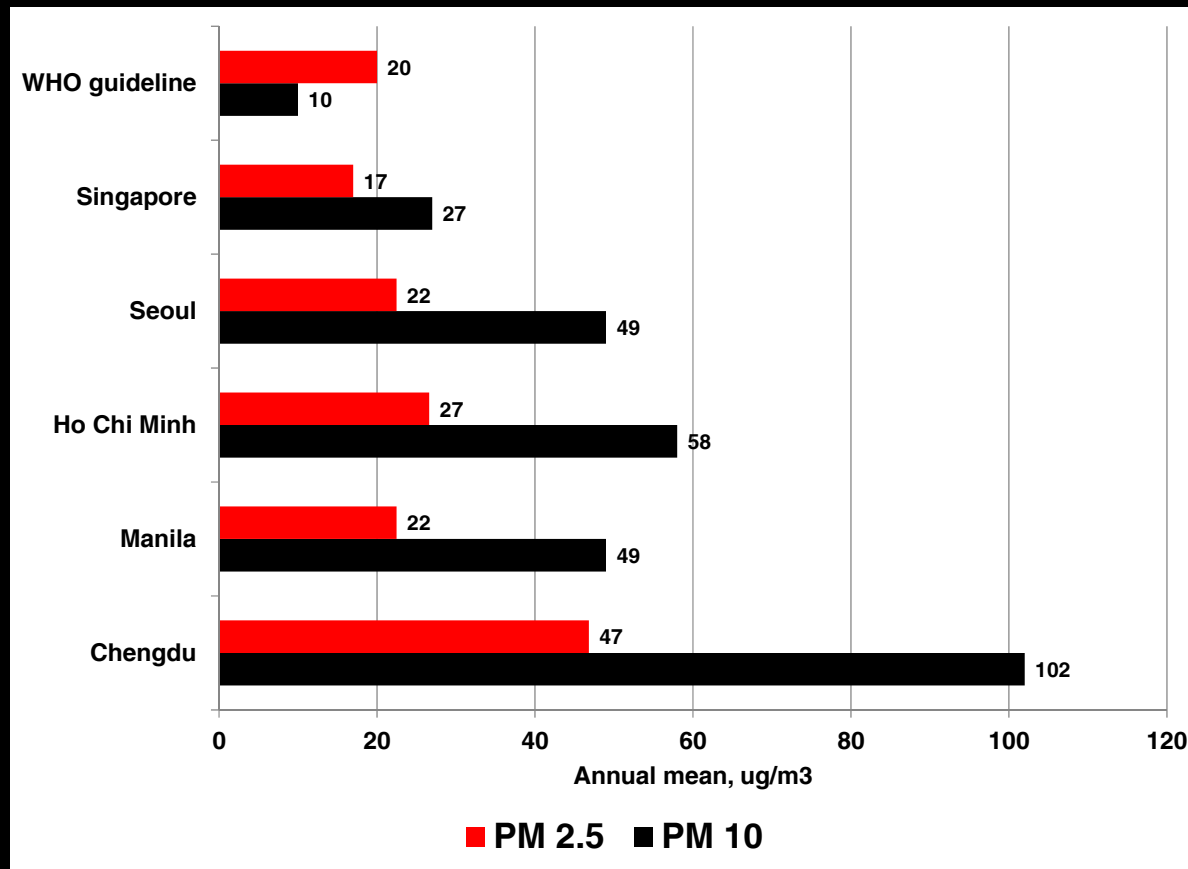
Spillovers of agglomeration benefits to suburban cities and towns, mostly within one hour drivetime.

Case Studies of Four EMRs in Asia



No spillovers from Chengdu: size and density matter.

Case Studies of Four EMRs in Asia



PM10 levels five times WHO guideline in Seoul, HCMC and Manila, more than ten times in Chengdu . PM2.5 levels in Chengdu more than ten times WHO standard. Much pollution from vehicular emissions.

Agglomeration Dis-economies

Case Studies of Four EMRs in Asia

Congestion costs:
US \$6.8 billion per year in Seoul
US \$ 4 billion per year in Manila

**In HCMC, average travel speeds
dropped from 18.2 km/h in inner core in
2002 to 14.3 km/h in 2010 and from 50
km/h to 36.4 km/h in suburban areas**

**Sixty per cent of average travel time is
delay in HCMC**

Case Studies of Four EMRs in Asia

Key Lessons from Case Studies

**1. Metropolitan
agglomeration
economies can change
national territorial
landscapes; stronger
than decentralization
policies.**

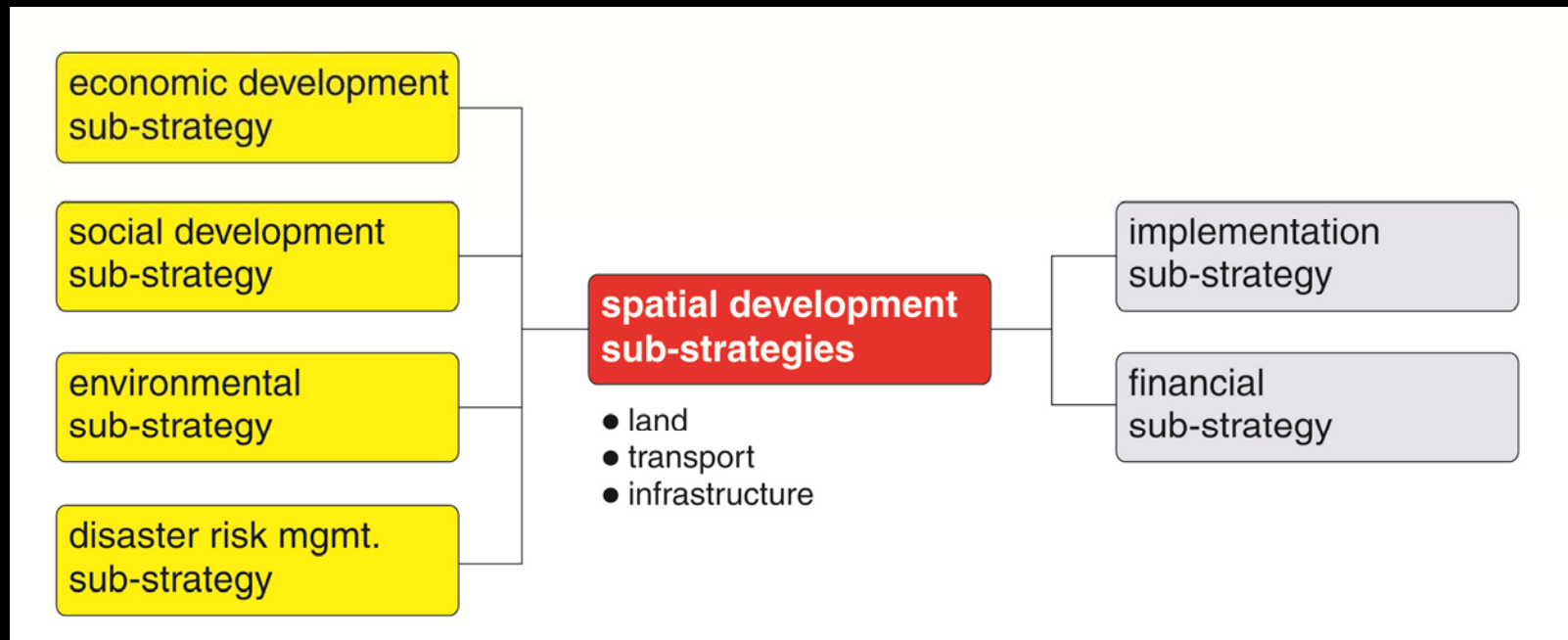
2. Size and density

matter: spillovers fewer
in smaller and less
dense metropolitan
regions (Chengdu,
HCMC).

3. Strengthening connectivity in and between EMRs is critical: Seoul public transport as world-class example of regional commuter rail, metro, bus, BRT.

4. Convergence across
EMRs is essential:
infrastructure services,
public services,
housing standards,
land markets

5. Integrated planning across jurisdictional boundaries is critical to facilitate agglomeration economies and their spillovers, and to minimize diseconomies.



integrated strategic planning process needs to be highly participatory of all key stakeholders in the MR, including civil society and the private sector.

6. Integration of economic and territorial planning
is important: planning should try to predict market demand for urban development (land, transport, infrastructure).

7. Integration of land use and transport planning is essential at the MR scale: again, Seoul as world-class example.

8. Urban growth management can be done without impeding economic development: again, Seoul as example.

**9. Plans are not enough:
they need to be
supported by realistic
implementation and
management
instruments.**

**10. Economies of scale
need to be realized
through regional
delivery of area-wide
infrastructure and
public services.**

11. Strong systems of laws and regulations are essential for development of metropolitan regions.

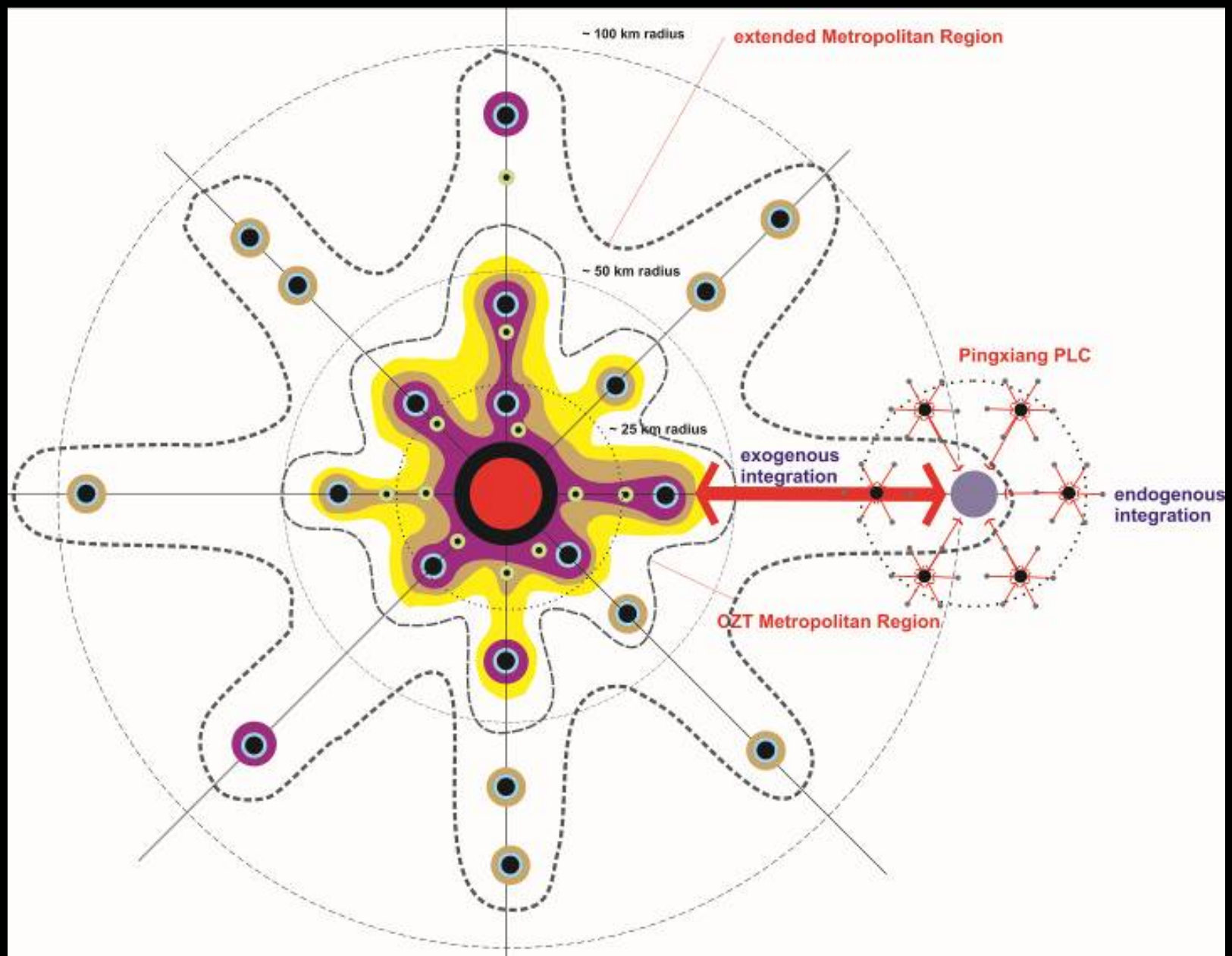
12. Equal enforcement of laws and regulations across a metropolitan region is essential: e.g. lack of enforcement in Manila and HCMC EMRs.

13. Strong institutions are needed to attract and sustain PPP: MRs' needs are far beyond what can be financed only by public finance.

**How could ADB engage
with Metropolitan and
Extended Metropolitan
Region Scales?**

- **Lending:**

based on national urban assessments, identify strategic metropolitan regions as long term clients; prepare medium and long term investment programs that grow, converge services, connect towns and cities.



- **Institutional Strengthening:**
 - 1. metropolitan planning and management**
 - 2. disaster and climate change risk management at MR scale**
 - 3. strengthening local governments in smaller centers.**

- **Research and Knowledge Exchange on Metropolitan Regions:**

- 1. defining metropolitan regions**
- 2. promoting agglomeration benefits**
- 3. addressing needs of vulnerable populations**
- 4. managing spatial structure of metropolitan regions**
- 5. managing risks**
- 6. governing and managing metropolitan regions**

- **Next Steps?**

- 1. assess feasibility of
conducting pilots in 2-3
metropolitan regions**

- 2. design a research and
knowledge exchange
program on metropolitan
regions in Asia**