



Urban Risks in South Asia

Challenges and Opportunities

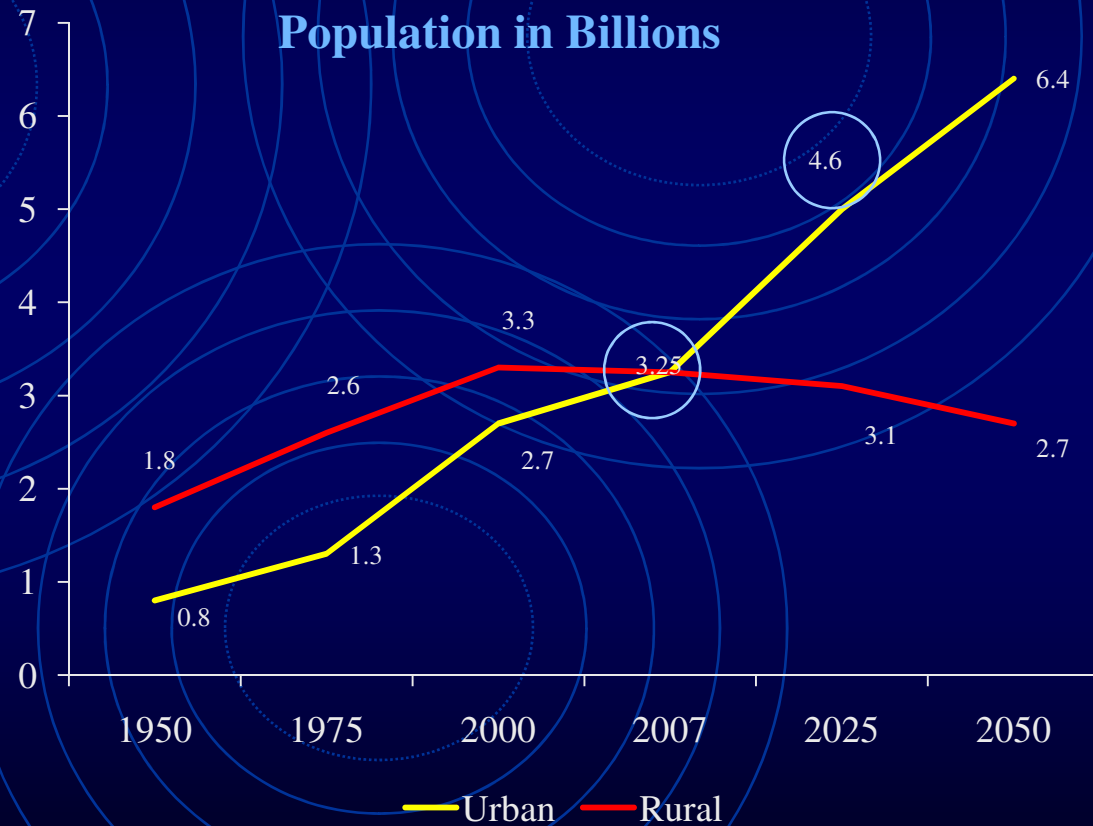
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Urbanizing world

- World is passing through great urban upsurge
- Number of people living in cities equaled those in villages in 2007 and is rising ever since
- 1.29 billion people is being added to our cities during 2007-25



World Population Prospects, 2008, UN

Deconstructing urban growth

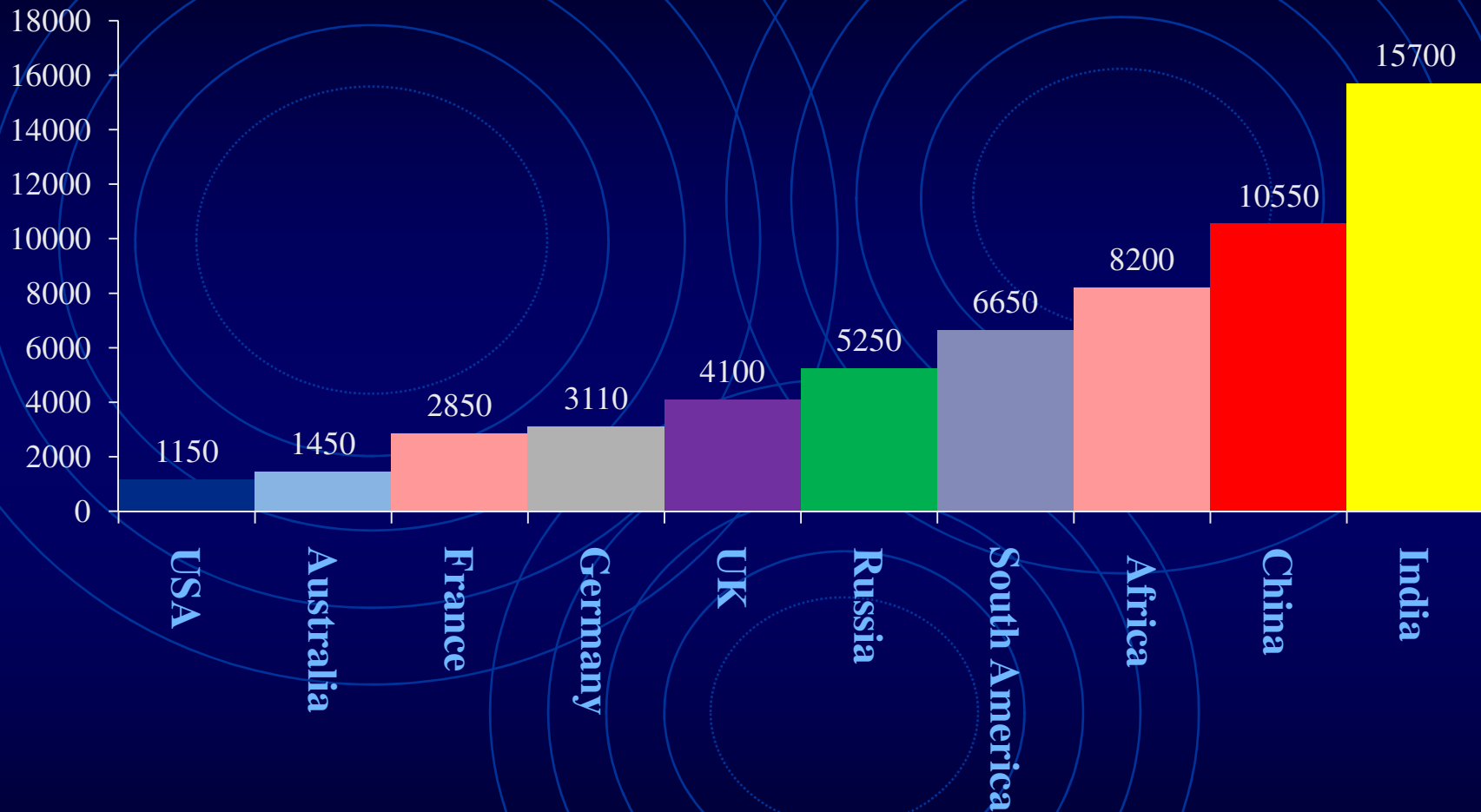
Urban Population in Millions					
	1950	1975	2007	2025	2050
World	737	1518	3294	4584 (+1290)	6398
Asia	237	574	1645	2440 (+795)	3486
Africa	32	107	373	658 (+285)	1233
Europe	281	444	528	545 (+27)	557
Latin America	69	198	448	575 (+127)	683
North America	110	180	275	365 (+90)	402
Oceania	8	13	24	27 (+3)	31

Percentage Urban					
	1950	1975	2007	2025	2050
	29.1	37.3	50	57.2	69.6
	16.8	24	40.8	51.1	66.2
	14.5	25.7	38.7	47.2	61.8
	51.2	65.7	72.2	76.2	83.8
	41.4	61.1	78.3	83.5	88.7
	63.9	73.8	81.3	85.7	90.2
	62	71.5	70.5	71.9	76.4

Trends of Urbanization in South Asia 1975-2025

	Level of Urbanization (%)				Urban Population (000)				Annual Growth (%)	
	1975	2000	2007	2025	1975	2000	2007	2025	1975-2000	2000-2025
Afghanistan	13.27	22.19	25	39.90	2040	5920	8498	18059	4.26	4.46
Bangladesh	9.28	21.28	26	39.99	7108	28603	38246	78430	5.57	4.03
Bhutan	3.45	7.80	12	19.03	39	144	276	597	5.23	5.69
India	21.31	28.56	29	45.24	132272	291901	329324	629757	3.17	3.08
Maldives	18.05	28.38	31	45.84	25	84	123	256	4.85	4.86
Nepal	4.99	16.70	17	34.30	649	4148	4794	13959	7.42	4.85
Pakistan	26.40	37.85	38	56.73	19733	61257	62548	161579	4.53	3.88
Sri Lanka	22.04	24.21	25	42.59	2998	4722	5275	10660	1.82	3.26
Total					164864	396779	449084	913297		

Gross urban density: some comparisons



48 cities in the world have reached density level of more than 15000 per sq. km. All of them are in developing countries. Dhaka is the most dense city with 40,100 persons living per sq km

Promises of urban growth

- Cities have acted as powerful engines of economic growth irrespective of their size, location or level of development . These are Centres for
 - Production and manufacturing
 - Marketing and distribution
 - Banking and finances
 - Infrastructure and utilities
 - Education and research
 - Culture and recreation
- In a globalizing world cities provide forward-backward linkages with local, national and global economies

Risks of rapid urban growth

- Unplanned and unregulated urban growth exposes vulnerable population and assets to risks of complex nature
- Even hazards of moderate nature can create catastrophic disasters in urban areas
- Earthquakes, floods, landslides, cyclones, typhoons, volcanic eruptions, tsunami, fire and droughts have devastated cities and economies
- Developed countries are not immune to such disasters as demonstrated by the earthquake in Kobe and hurricane in New Orleans
- Risks of such disasters are infinitely higher in many developing countries

High risk cities

- Large number of cities are located in high risk areas
- UNHABITAT study shows that
 - 3351 cities are located in low-elevation coastal zones that are threatened with storm surges and sea level rise
 - 4521 cities are prone to recurring floods
 - 2391 cities are in high risk seismic zones
 - 378 cities face the risks of landslides
 - 73 cities have the danger of volcanic eruptions
 - Of the top 30 cities, 19 are in river deltas
- Disasters are real time possibilities in each of these cities; many more cities are also prone to disasters

What's possible, what's impossible

- It is impossible to prevent disasters which are bound to be catastrophic in urban areas
- It is possible to reduce the impact of disasters with proper planning, education, awareness, management and enforcement
- It is possible to recover fast and build back better to reduce the impact of future disasters
- It is possible to make the cities resilient to disasters

Framework of Urban Risk Management

Risk Assessment and analysis =

Hazards

+

Vulnerabilities

x

Risks

÷

Capacities

=

Total risks

- **Prevention**

+ **Mitigation**

= **Acceptable risks**

= **Preparedness**

Absolute prevention

Non structural Mitigation

Structural Mitigation

Contingency Planning

Relative to conditions specific to Cities Resources

Master Plans
Zoning Regulations
Building Bye Laws

Training Capacity Building

Early Warning

High Technical Solutions

Response

Pre-Disaster Recovery Planning

Good Governance

Heavy Engineering Solutions

Recovery

Legal and Institutional Framework

Education, Awareness, CBDRM

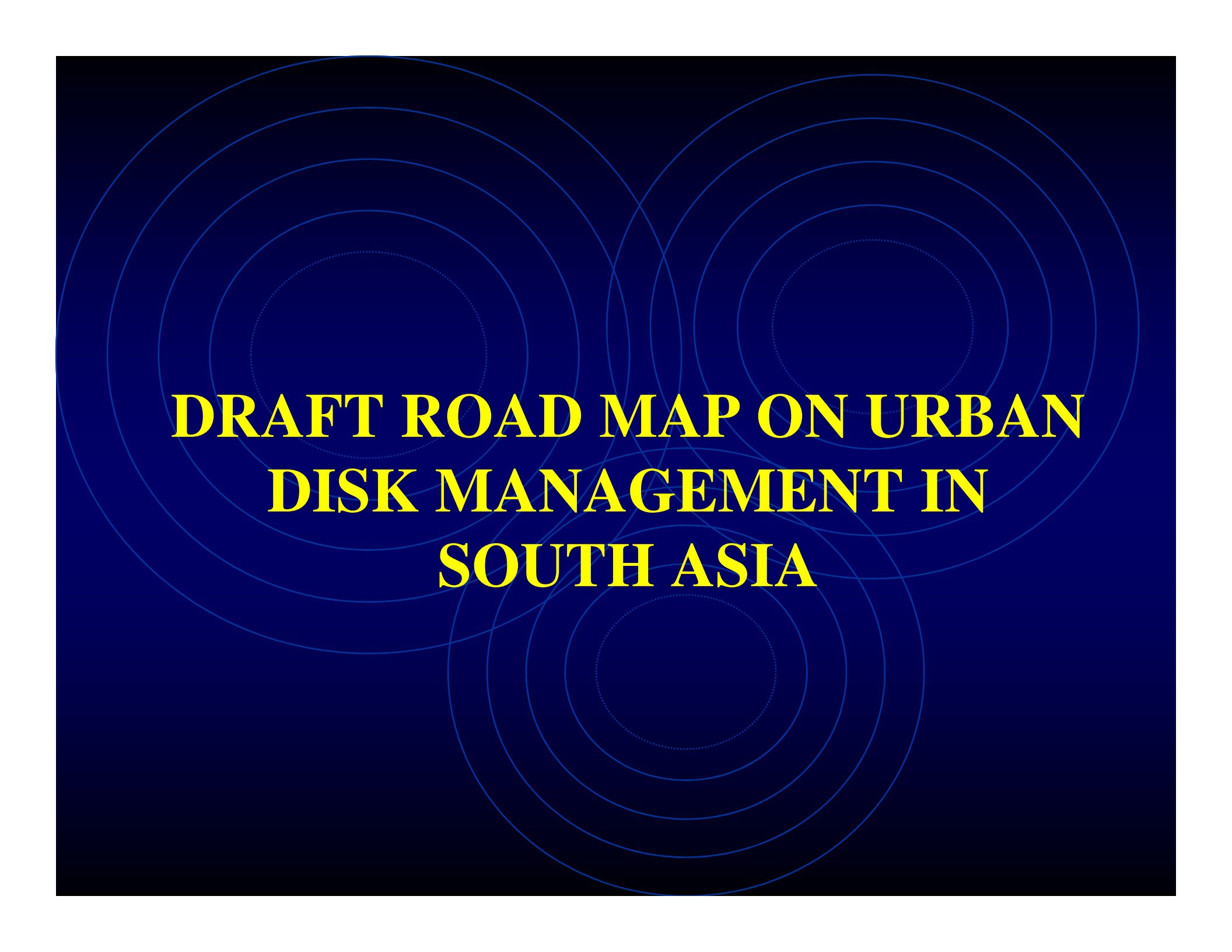
Reconstruction

Resilient city

A resilient city is a sustainable network of physical systems and communities.

Physical systems include its roads, buildings, infrastructure, communications facilities, soils, topography, geology, and the like. They act as the body of the city, its bones, arteries, and muscles.

Communities are the social and institutional components of the city. They include the neighborhoods, agencies, organizations, enterprises, task forces, and the like. They act as the brain of the city, directing its activities, responding to its needs, and learning from its experience. A city without resilient communities will be extremely vulnerable to disasters.




**DRAFT ROAD MAP ON URBAN
DISK MANAGEMENT IN
SOUTH ASIA**

Resilient city requires

Resilient physical systems are stable and use fail-safe design, can conduct early fault detection and take quick remedial measures, are dispersed rather than site specific, employ standardization, are composed of small, semi-autonomous units, rather than centralized at few points.

Resilient operating systems are efficient, reversible, autonomous, and incremental. They take short lead time and have rapid response to stimuli.



Resilient social systems involve all stakeholders, are compatible with diverse value systems, can satisfy multiple goals at the same time, distribute benefits and costs equitably and have high accessibility.

Resilient economic systems employ incremental funding, provide a wide range of potential financial support, enjoy a high benefit-cost ratio, give an early return on investments, and divide benefits and costs equitably.

Resilient environmental systems minimize adverse impacts, and have a replenishable or extensive resource base.



THANK YOU