Urbanisation – (Mega)Cities as Risk Areas

Frauke Kraas, Institute of Geography, University of Cologne, Germany
→ Massive, rapid urbanisation in Asia and Africa (WBGU 2016)

Frauke Kraas, Institute of Geography, University of Cologne, Germany
Urbanisation: Evolution of city sizes worldwide

Global population: majority in small/medium sized cities, 25% in megacities

Frauke Kraas, Institute of Geography, University of Cologne, Germany
- 2002: 394 M inhabitants (246 M in the "global South", >215 M Asia), 2015: 604 M inhabitants
- 1970-2025: Delhi (3.5 -> 28.5 M), Istanbul (2.7 -> 12.1 M), Jakarta (3.9 -> 10.8 M), Lagos (1.4 -> 15.8 M), Manila (3.5 -> 14.9 M), Mumbai (6.2 -> 25.8 M), Guangzhou (3.0 -> 10.9 M), Seoul (5.3 -> 9.7 M); highest dynamics: Shenzhen (0.058 -> 11.1 M), Dhaka (1.5 -> 20.9 M)
Beyond statistical figures ….

**Urban transition**: incremental, sectoral changes within an urban system

**Urban transformation**: fundamental, multidimensional, radical, often irreversible entire urbane regime change

(Kraas 2007, Kabisch/Kuhlicke 2014)

**Urban expansion** processes ….

and with this, large areas are transformed from rural to urban landuse

(Kraas 1995)

Frauke Kraas, Institute of Geography, University of Cologne, Germany
Seoul 1973

Dege 2000

- marsh/sand
- agriculture
- urban landuse
- forest
- water bodies
- unclassified
Seoul 1996

Expansion in 13 years

Dege 2000
Sustainable Development Goals (2016-2030)

SDG 11: The ‘Urban Sustainable Development Goal’

Goal 11: Make cities inclusive, safe, resilient and sustainable

1. Almost one third of urban population in developing countries still live in slums
2. Urban sprawl is found in many cities around the world
3. Cities in every part of the world have dangerously high levels of air pollution
4. Nearly three-quarters of countries have implemented or are working to implement national-level urban policies

SDGs are global, general, sectoral – setting a vague broad frame
Focus topics: adequate housing, sustainable human settlements, equity, security, risk reduction, urban resilience, global monitoring mechanism, urban heritage - etc. etc., all fields included.
(Mega)Cities as risk areas

- usually perceived as **wealthy, privileged, well-developed**, role as **motors, gateways, places of power, innovation, creativity, education, power houses of development** …

- increasingly: perception (also) as **centers of multiple risks**: natural and human-made hazards, pollution, congestion, informality, diseases, criminality, injustice …

(Frauke Kraas, Institute of Geography, University of Cologne, Germany)


(Mega)Cities in coastal / delta regions

Most megacities located in the coastal zone and large deltas = high-risk areas, potential for larger disasters

**LECZ** = low-elevation coastal zone

**Land area** of LECZ: 2.3% (2,599,000 km$^2$) of total land areas of all coastal countries

**Population** in LECZ

2000: 625 million people (10.9% of total population worldwide)

83% of global LECZ population in less developed countries

population density: 241 people/km$^2$ (= 5 times higher than global mean = 47 people/km$^2$)

**projections** (scenarios)

for **2030**: 879-949 million people

for **2060**: 1,052-1,388 million people (= 12% of about 11.3 billion)

Brown et al. 2013, Neumann et al. 2015
(Mega)Cities in coastal / delta regions

Multiple hazards and risks

- **Multiple risks**: natural / human-made / mixed origin; sudden / slow-onset; floods, tsunami, (tropical) storms, additionally some: earthquakes, landslides, overcongestion, pollution, health risks, social conflicts, unrest, industrial accidents, terrorism …

- **Space**: focal areas coasts, deltas, lowlands

- **Time** frame for action: initial information channels, **first 72 hours**, mid-term security

- Understanding **human actors**: risk awareness, risk governance, different population (age/ethnic/languages) groups, exposure/experience, reasons/motives, reaction/action to threats/hazards/risks
Example: Floods in Bangkok 2011

- 615 casualties
- 9 M people: loss of accommodation
- Urban fringe: 3.15 M affected
- Infrastructure networks blocked
- >10,000 companies in 7 industrial estates weeks loss of production
- Economic losses: up to 24 billion €
- Economic growth to be corrected from 4% to 2.6%
- <1% of private households insured
- Cost of reconstruction: 7 billion € = 3% of BIP Thailand
- 10,000s of return migrants to home countries

(Kraas 2012)

„Natural disasters“? „Climate change“? No, not alone!
- „social catastrophies“ (Felgentreff/Glade 2008)
- „civilisation-caused disasters“ (Kraas 2012)

Disasters are: Human-made! Civilisation-caused!
- massive **unregulated** urbanisation and industrialisation
- **inadequate, mal-adjusted** land-use planning and development for delta and coastal areas
- **infrastructure- and technology-focused** risk preparedness
- lacking **awareness** and **participation**: institutions, private sector, civil society
- **urban system** approach: (mega)cities as complex socio-ecological systems with **complex emergencies**: perspective on risks, disasters, vulnerability and crisis on **different scales and causalities**

From „regions at risk“ to "people at risk"! (Wisner 2007)

Frauke Kraas, Institute of Geography, University of Cologne, Germany
(Mega)Cities as risk areas – we need to know and collaborate more!
References (*) and further reading suggestions

References (*) and further reading suggestions (contd.)