



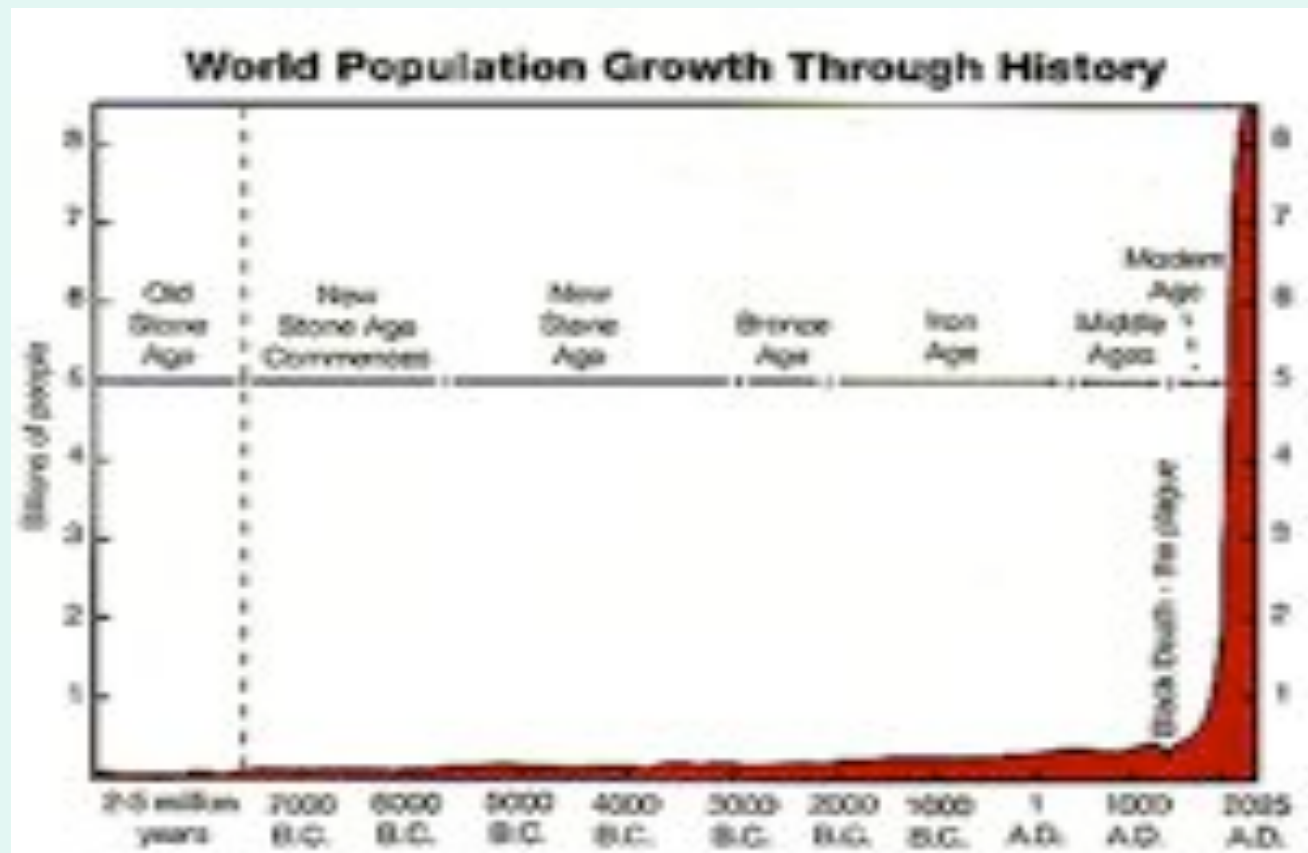
TOWARDS AN URBANIZED WORLD a challenge for sustainable urban development



industrialization and „demographic explosion“

1600 > relatively stable

1800 > dramatic increase > early industrialization



2050 - 7, 9 or 11 billion people?

2000 > 6 billion

2025 > 8

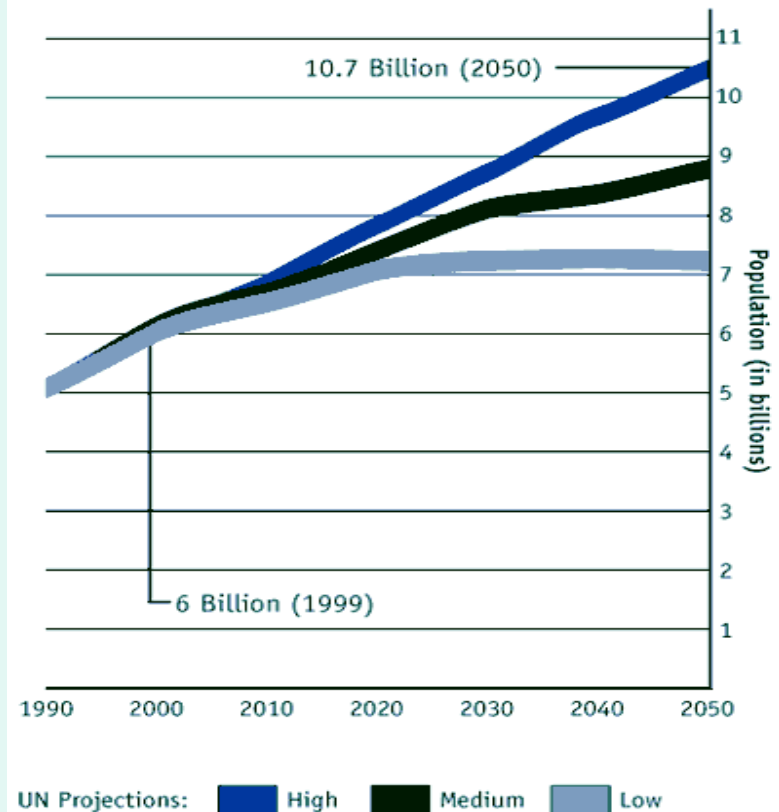
2050 > 7 - 11 ?

max. „carrying capacity“ of the earth ?
worst case , best case scenario



World Population Growth, Actual and Projected, 1950-2050

The United Nations Population Division predicts that world population will grow from 6 billion in 1999 to between 7.3 and 10.7 billion by 2050, depending on future fertility rates, with 8.9 billion considered most likely.



Source: United Nations. 1998. *World Population Prospects: The 1998 Revision*.

2000 - 3 billion urban dwellers

1800 > 2 %

1900 > 9 %

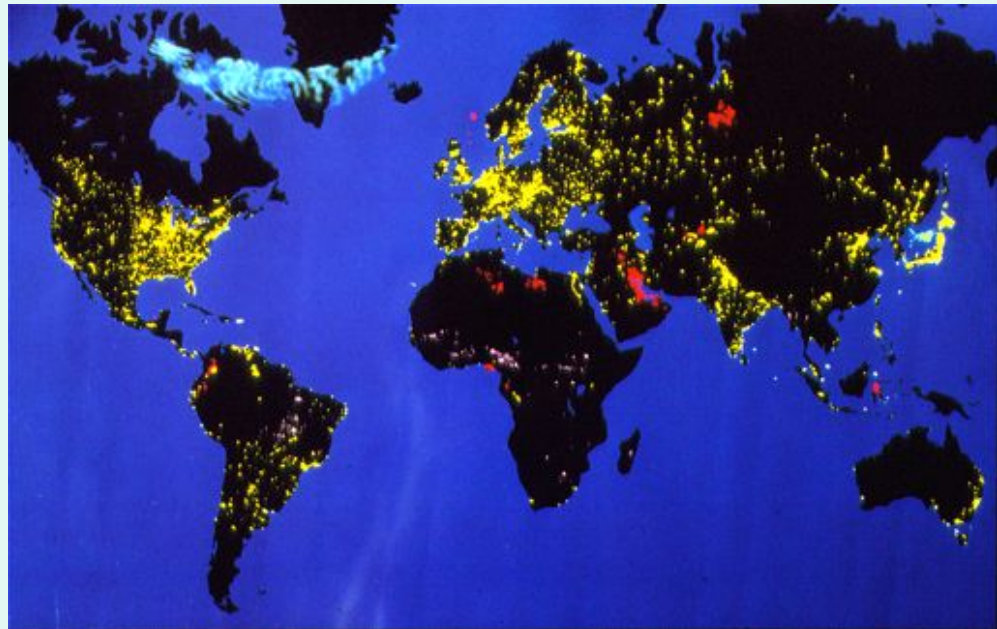
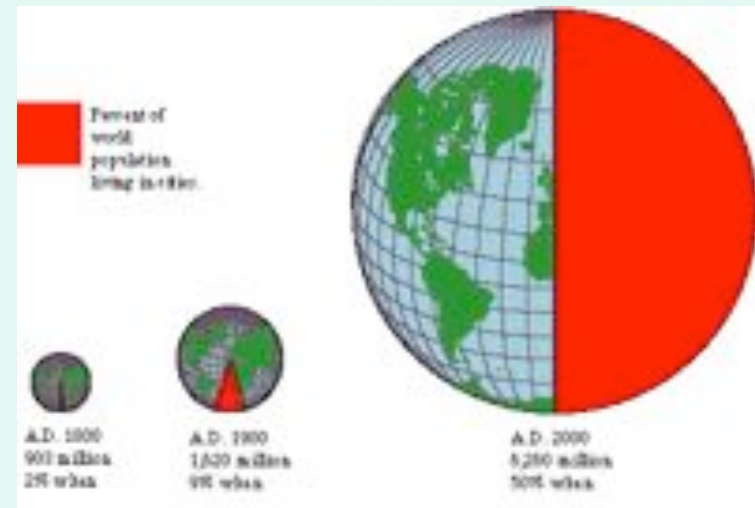
2000 > 50 %

urban population 2000 > 3 billion

all future population growth

will be absorbed by cities

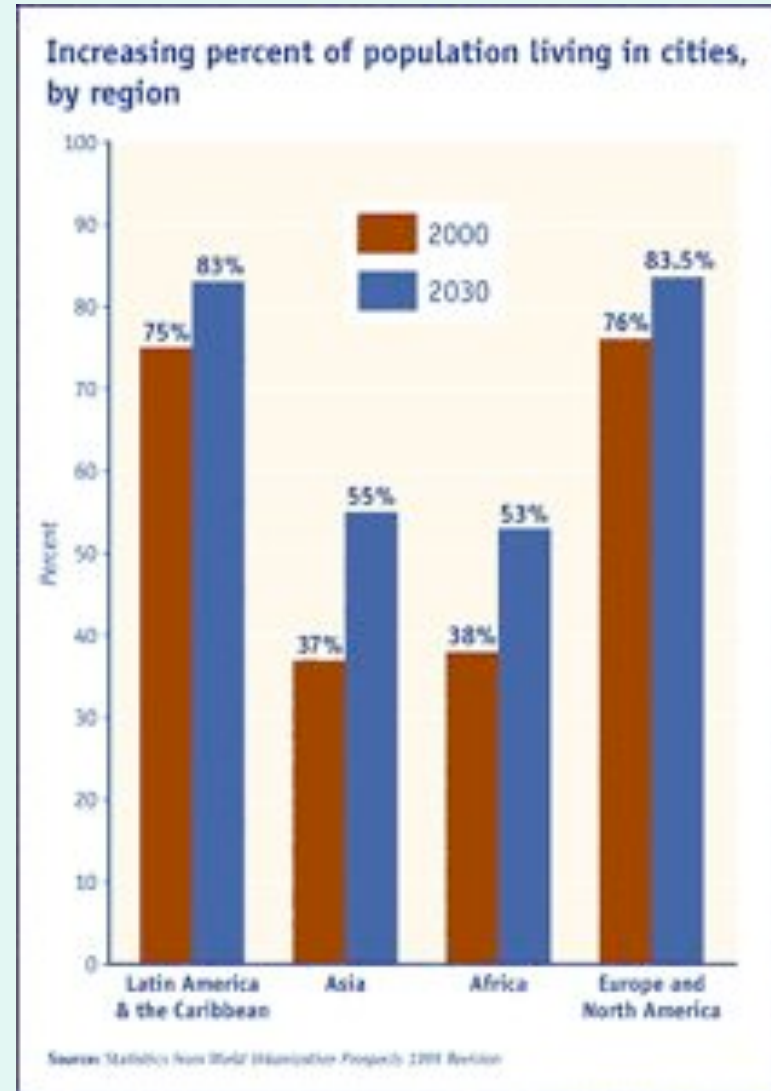
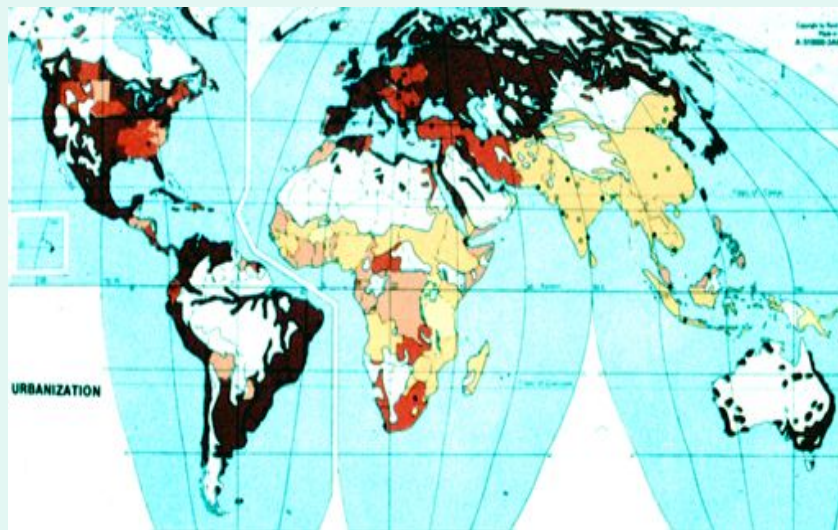
2030 > 3 + 2 = 5 billion



regional urbanization:

Europe, North America
Latin America (!)

„latecomers“ Asia and Africa



2050 - 5 billion urban dwellers ?

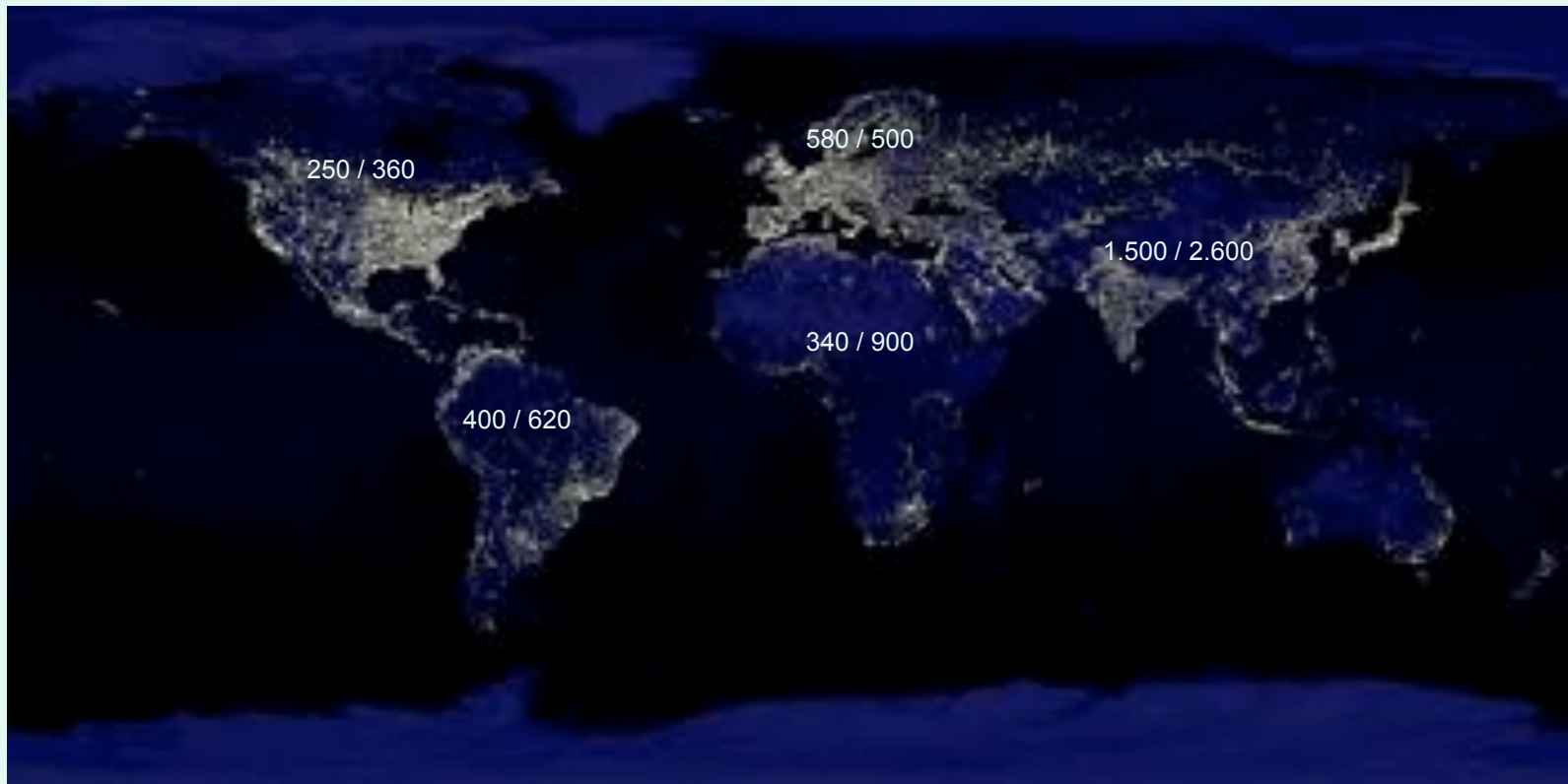
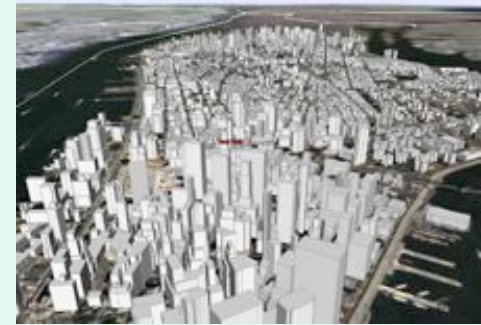
projected increase of urban dwellers

in Asia > 1.1 billion

in Africa > 560 million

moderate growth in North America /Latin America

„shrinking cities“ in Europe

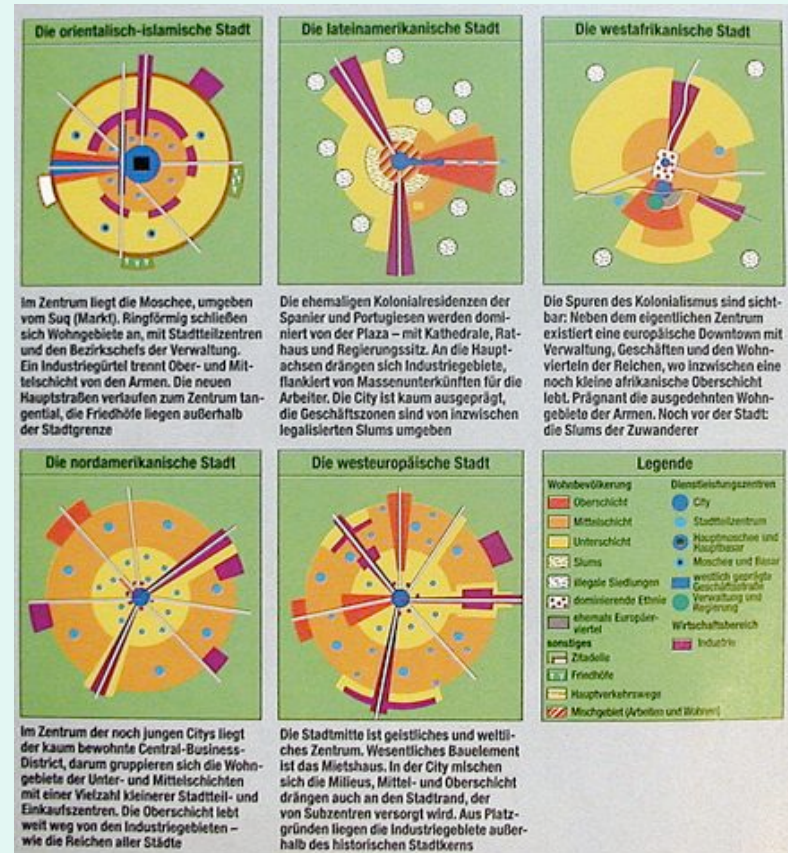


historic cities in a globalizing world

the West-European city
 the North American city
 the Latin American city
 the Oriental-Islamic city

globalization of lifestyle,
 housing, architecture, urban planning
 loss of historic and cultural identity

uniform globalized cities ?
 new regional urban models ?



the European city in transition

19th century > dominating model > colonization
20th century > competition of European and North American city
21st century > emerging „post-European“ cities

historic core and cultural identity
compact building blocks, mixed land use, public space
short distances, public transport
mixed income groups, no gated communities
impact of international urbanism and architecture

a sustainable urban model ?



Berlin

**Post-European urbanism -
between high-tech and no-tech**

traditional, conventional and
futuristic cities
high-tech-, low-tech-, no-tech-architecture

tendency > loss of regional traditions
polarization into rich and poor cities
and urban areas

Dubai



Chad

**Megacities –
the top of the „urbanization iceberg“**

Spectacular growth of large cities >
2000 > 20, 2030 > 30 megacities
+10 million > Asia

majority of urban population lives in
medium and small size cities !

65 % in cities < 1 million
25 % in cities 1-10 million
10 % in cities > 10 million

rapid growth of
small and medium size cities

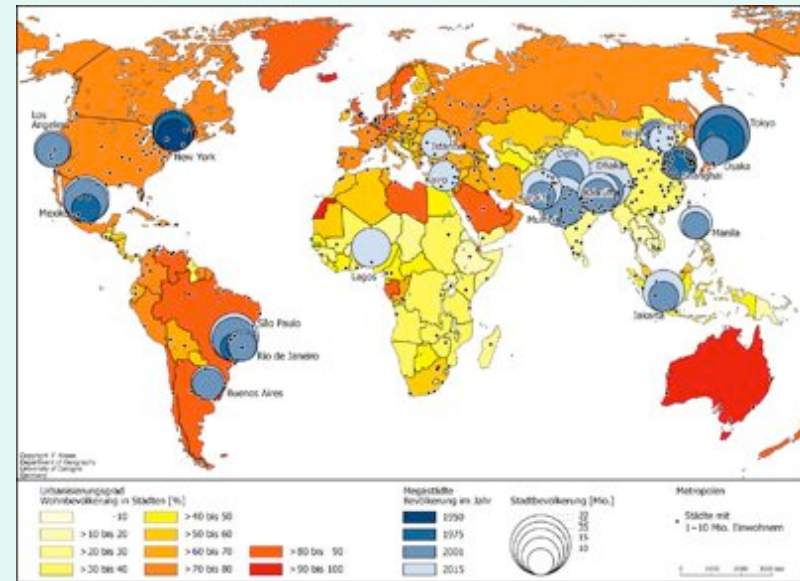
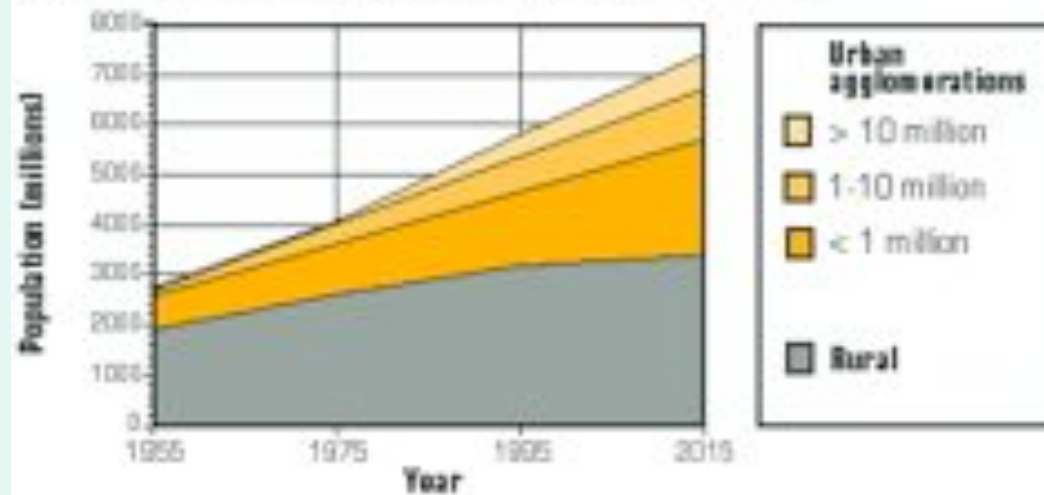


Fig. 16. Urban and rural population, world, 1955-2015



booming megacities

definition > 10 million inhab
 urbanized regions > different population



1950		1975		2000		2015	
Stadt	Bevölkerung	Stadt	Bevölkerung	Stadt	Bevölkerung	Stadt	Bevölkerung
New York	12,3	Tokyo	19,8	Tokyo	26,4	Tokyo	28,4
		New York	15,9	Mexico City	28,1	Bombay	26,1
		Shanghai	11,4	Bombay	28,1	Lagos	23,2
		Mexico City	11,2	São Paulo	17,8	Dhaka	25,1
		São Paulo	10,0	New York	26,4	São Paulo	20,6
				Lagos	13,4	Karachi	19,2
				Los Angeles	23,1	Mexico City	19,2
				Kalkutta	22,9	New York	17,6
				Shanghai	22,9	Jakarta	17,3
				Buenos Aires	22,9	Kalkutta	17,3
				Dhaka	22,3	Delhi	16,8
				Karachi	21,8	Metro Manila	16,8
				Delhi	21,7	Shanghai	14,6
				Jakarta	21,0	Los Angeles	14,1
				Dhaka	21,0	Buenos Aires	14,1
				Metro Manila	20,9	Kairo	13,8
				Peking	20,8	Stambul	12,5
				Rio de Janeiro	20,6	Peking	12,3
				Kairo	20,6	Rio de Janeiro	11,9
						Dhaka	11,0
						Tianjin	10,7
						Hyderabad	10,5
						Bangkok	10,1

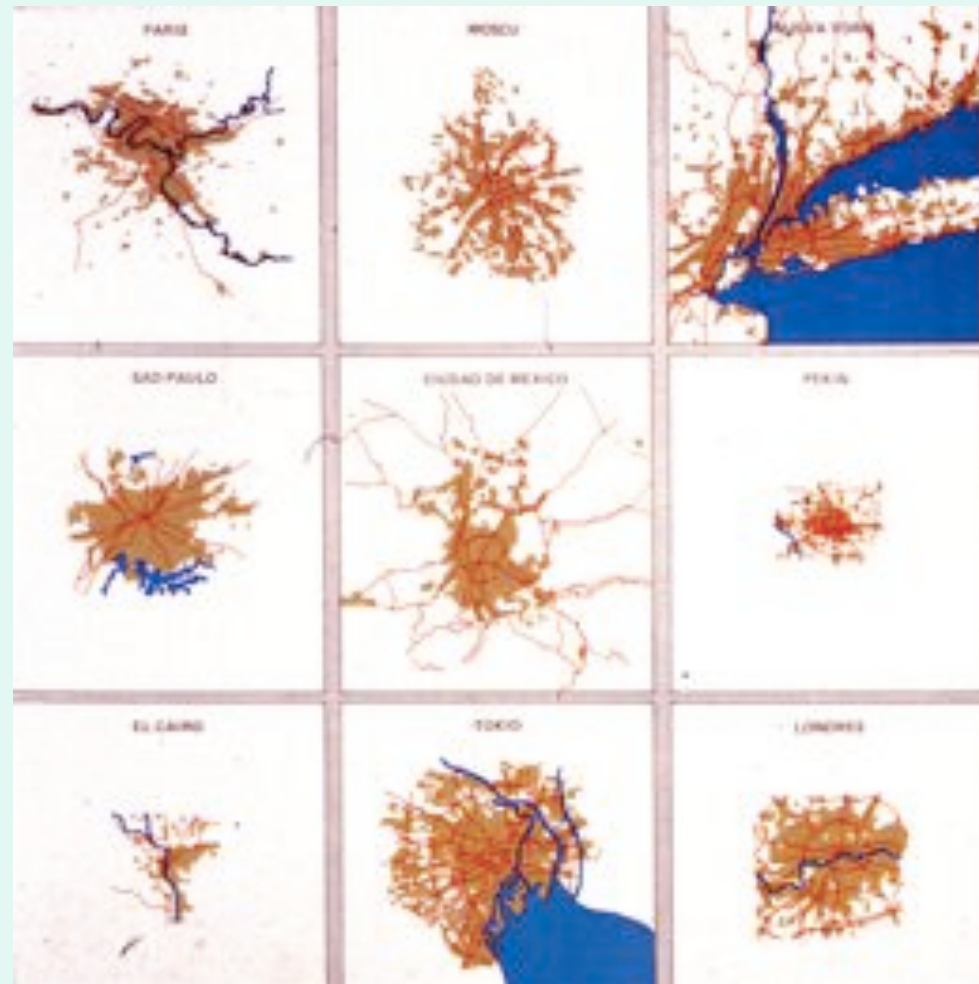
Large and „small“ megacities

New York	app. 3500 km ²	/ 17 mio.hab.
Sao Paulo	1500	/ 18
Kairo	700	/ 10

large population
compact and densely populated
density 3-5 times higher

housing standards >

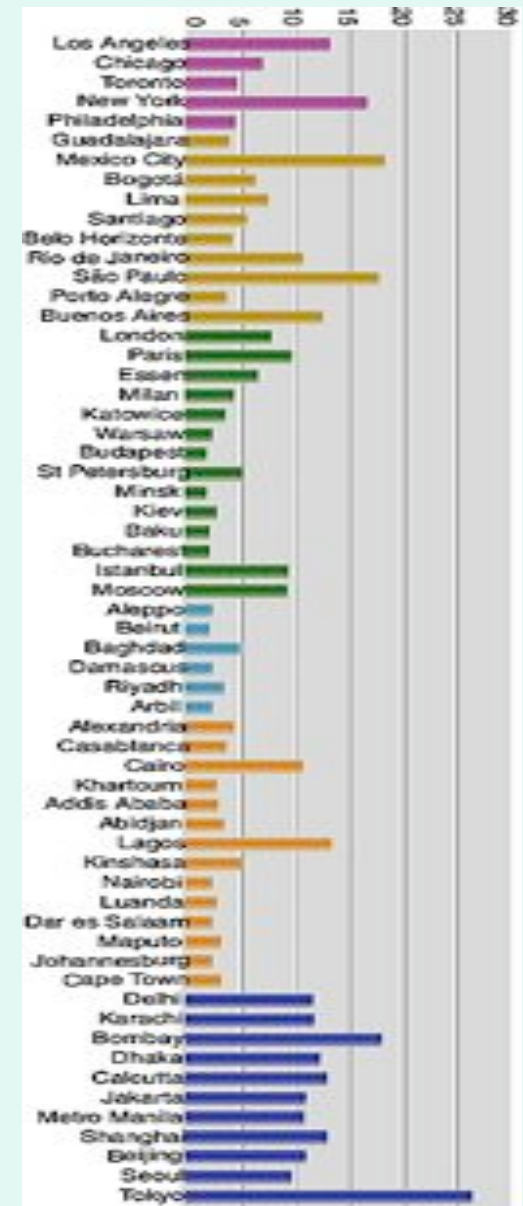
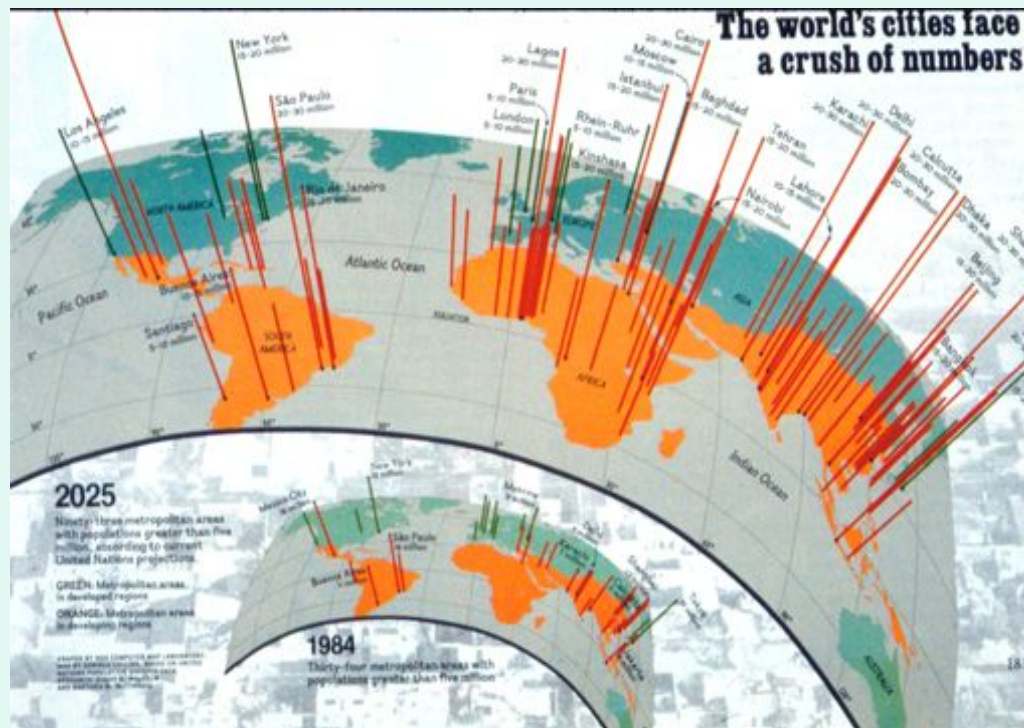
Germany	40 m ² /person
Mumbai	10 m ² /person



emerging megacities

app. 100 emerging megacities

research and cooperation project „emerging megacities“>



„Meta- or Hyper-Cities“

UN-Habitat > 20 million.

2020

Tokio >	35 million
Mumbai	33
Shanghai	27
Karachi	26
Jakarta	25
Dhaka	25

Lagos, Delhi, Mexiko-City,
Sao Paulo, New York

Meta-Cities >
fragmented, dynamic change >
managable and sustainable ?

Tokio



new Shanghai

Mega-agglomerations

conurbation of small and large cities
urban-rural continuum

Pearl River Delta / China > 20 million
Hongkong, Shenzhen, Guangzhou
+ 30 other small cities > 150 km urban corridor

Great Jakarta / Indonesia > Jabotabek
administration, planning, infrastructure ?

Pearl River Delta / China



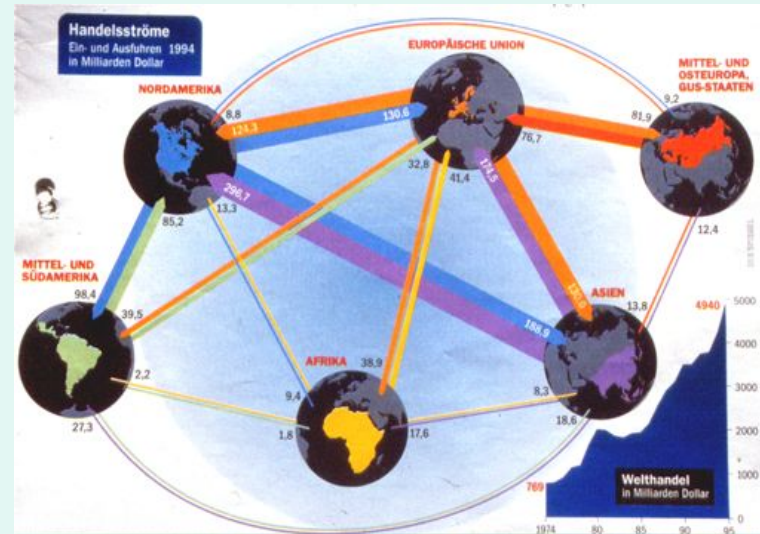
World Cities

megacity > population size

world city > functional definition
international role and importance
in the global economic network

post-industrial activities >
financial, economic, political activities
stock market, banks, corporate headquarters
international organizations
information and media,
legal and financial consultings,
research, higher education,
cultural and tourism activity

global economic network



New York

the Global City concept

1970s > Friedmann > world cities

1090s > Saskia Sassen a.o. >

Dipersion of industrial production >
Concentration of steering and control
functions

Criteria >
flow of capital investiments
Number of corporate headquarters,
Number of internationa flights...

global city theorie > not yet consolidated
focus on New York / London
subestimation of other cities
not just the city > city region

Europe > city network
not one dominating city
cluster of capitals and
highly specialized cities >
London, Paris, Amsterdam, Brüssel,
Frankfurt, Hamburg, Milano..

alternative spatial and functional
Modell ?



Tokio

Alpha, Beta, Gamma - World Cities

Alpha world cities (full service world cities)

12 points: [London](#), [New York](#), [Paris](#), [Tokyo](#)

10 points: [Chicago](#), [Frankfurt](#), [Hong Kong](#),
[Los Angeles](#), [Milan](#), [Singapore](#)

Beta world cities (major world cities)

9 points: [San Francisco](#), [Sydney](#), [Toronto](#), [Zürich](#)

8 points: [Brussels](#), [Madrid](#), [Mexico City](#), [São Paulo](#)

7 points: [Moscow](#), [Seoul](#)

Gamma world cities (minor world cities)

6 points: [Amsterdam](#), [Boston](#), [Caracas](#), [Dallas](#),
[Düsseldorf](#), [Geneva](#), [Houston](#),

[Jakarta](#), [Johannesburg](#), [Melbourne](#), [Osaka](#), [Prague](#),
[Santiago](#), [Taipei](#), [Washington](#)

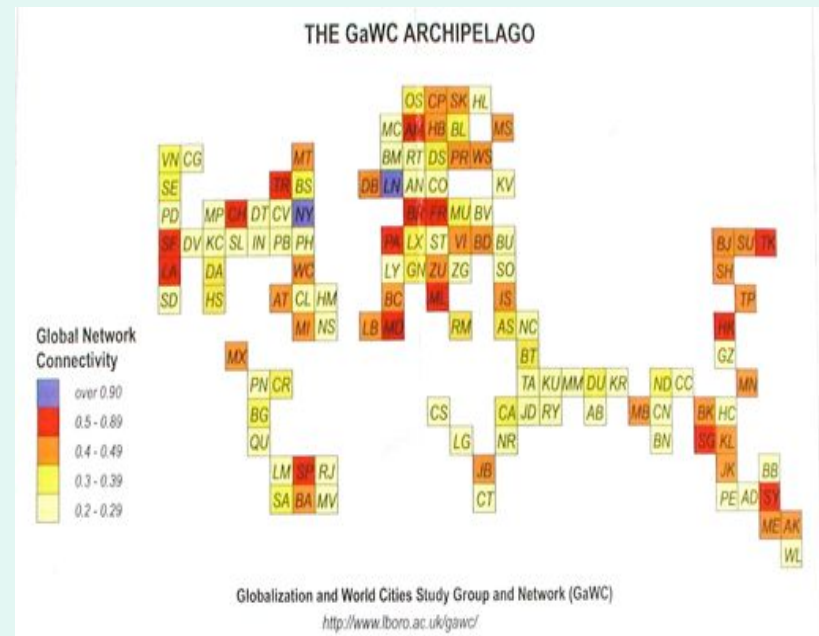
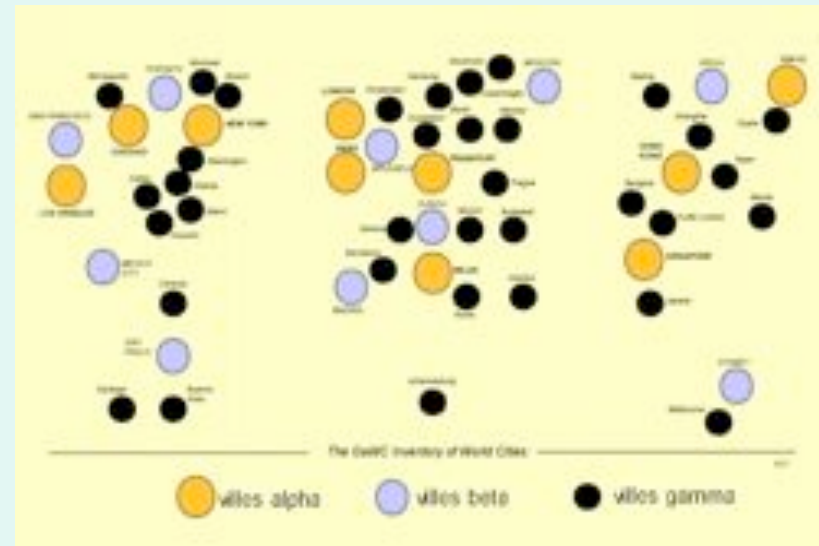
5 points: [Bangkok](#), [Beijing](#), [Montreal](#), [Rome](#),
[Stockholm](#), [Warsaw](#)

4 points: [Atlanta](#), [Barcelona](#), [Berlin](#), [Budapest](#),
[Buenos Aires](#), [Copenhagen](#), [Hamburg](#),

[Istanbul](#), [Kuala Lumpur](#), [Manila](#), [Miami](#), [Minneapolis](#),
[Munich](#), [Shanghai](#)

Germany's global city is Frankfurt, not Berlin

different criteria > different ranking!

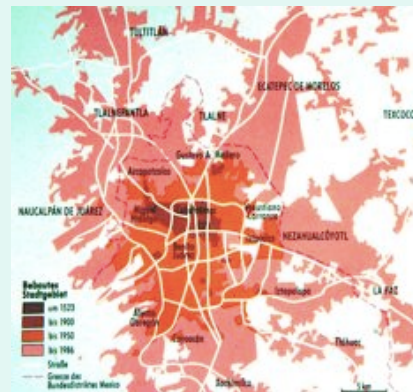


Shanghai, Mumbai, Mexico-City – struggling for a world city position

effort to attract foreign investment
and to develop world city functions

urban planning >
new CBDs and other urban mega-projects
Shanghai / Pudong
Mexico-City / Santa Fe > „gated CBD“

Shanghai / Pudong



Mexico-City / Santa Fe

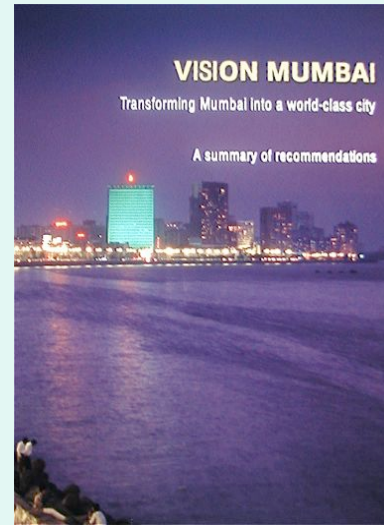
Dubai
the artificial city and business model



**Mumbai –
emerging world city, persisting poverty**

formal sector incapable to absorb
urban labour force >
boom of informal economy

urban fragmentation, social polarization,
increasing informalization of the city



Mumbai

**informal sector –
struggle for survival or
booming „micro-capitalism ?**

de Soto > „El otro sendero“ > Lima, Peru
Informal micro enterprises >
a dynamic self-help or grass-root-capitalism
with micro credits and de-burocratization >
growth opportunities, capital accumulation

M. Davis „Planet of Slums“ >
struggle for survival, self-exploitation, no
accumulation, critical work conditions,
minimum income



Slums - urbanization of poverty

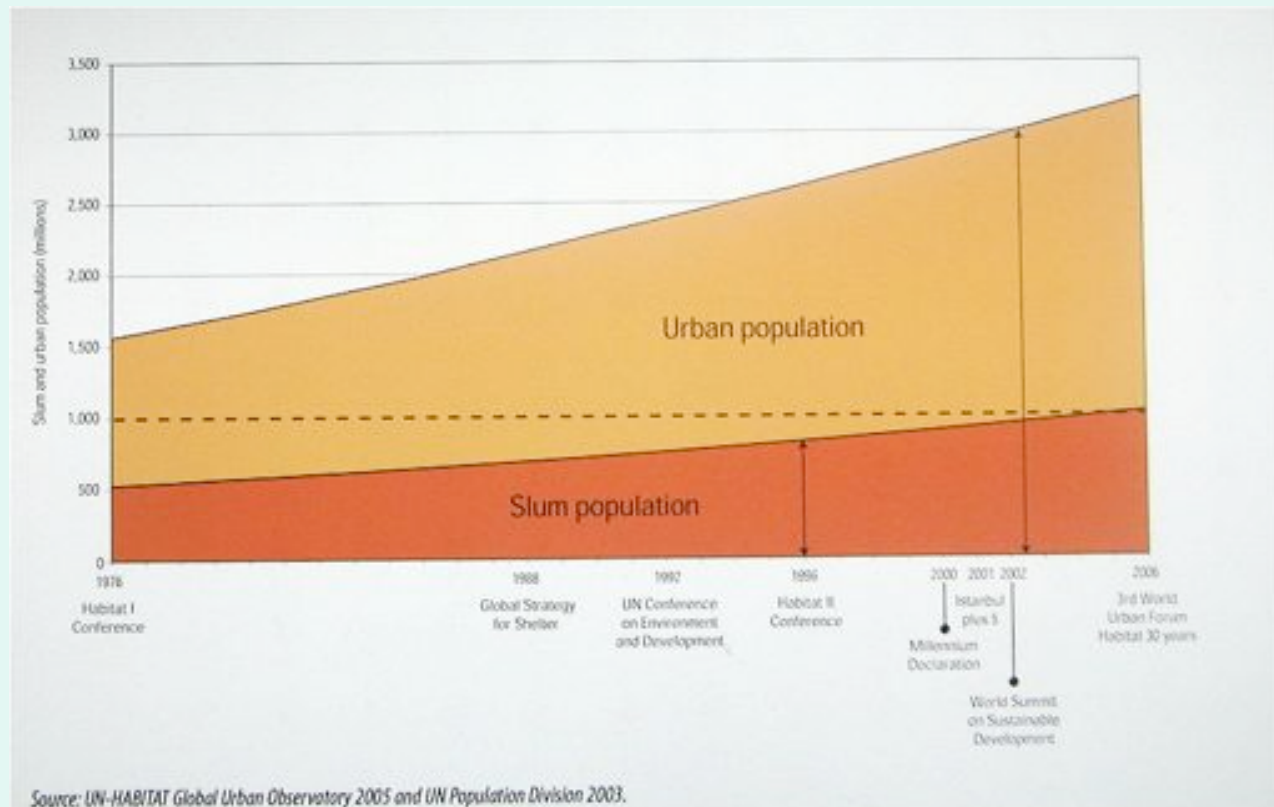
UN-Habitat „State of the world´s cities“ (2006)

Urban population > 3,2 billion

1 billion people in „slums“ > 2 billion in 2030 ?

urbanization > progress and development

In fact > urbanization of poverty



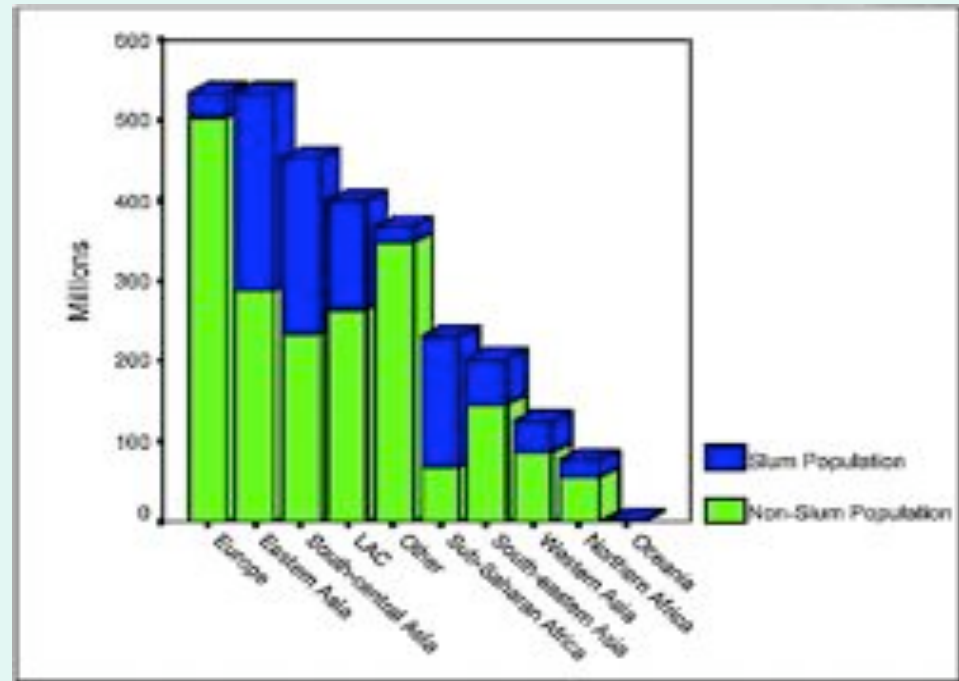
Is sustainable urban development possible with a large slum population ?

Regional differences

South Asia, Africa (Sub-Sahara) > slums are growing as fast as cities

50% young people (less than 20 years) lack of life perspectives

UN > reduction of urban poverty and slums key for sustainable global urbanization



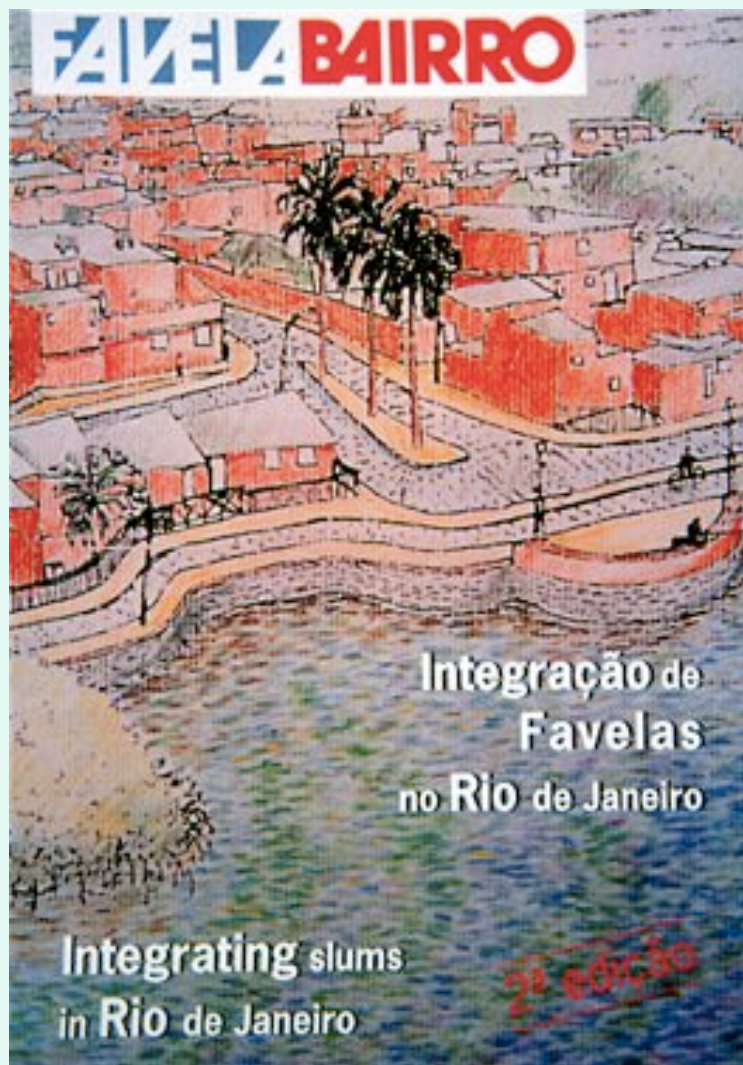
Informal settlements - problem or solution ?

„slums of hope, slums of despair“

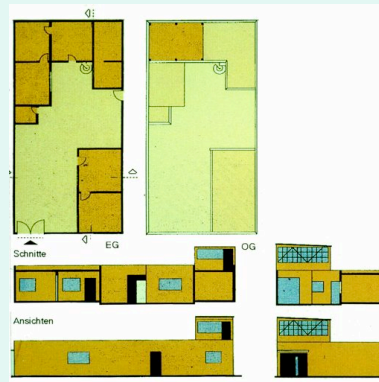
UN-Habitat > minimum requirements >
permanent housing that protects against climate
sufficient living space > 3 people/room
access to safe and affordable water
access to adequate sanitation
security of tenure that prevents forced evictions.



Rio de Janeiro / Favela Jacarezinho



Mexico-City
Informal settlements and self-help-housing

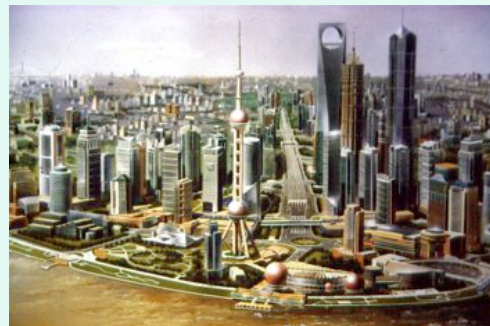


Megacities = mega-chances

focus of economic activities >
key for national and regional development
promotion of social and cultural transformation
high productivity and capital accumulation
modernization and technological innovation
reservoir of „cheap“ labour (formal and informal)
attractive for foreign direct investment

Sao Paulo, Bangkok, Mumbai >
10% population > 40% of GNP

nodal point of globalization >
chance to compete internationally

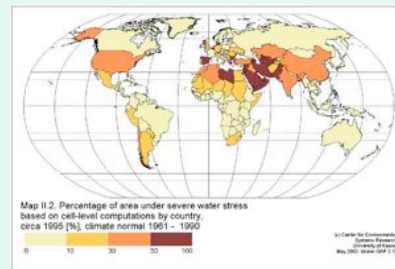


Megacities = mega-risks

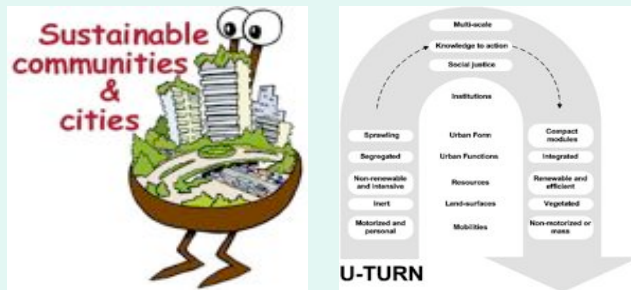
Vulnerable to natural and other disasters > earthquakes, rising sea level, scarcity of water and desertification, technical disasters (explosions), terrorism..

focus of political and economic crisis > urban poverty, extreme social contrast and conflict

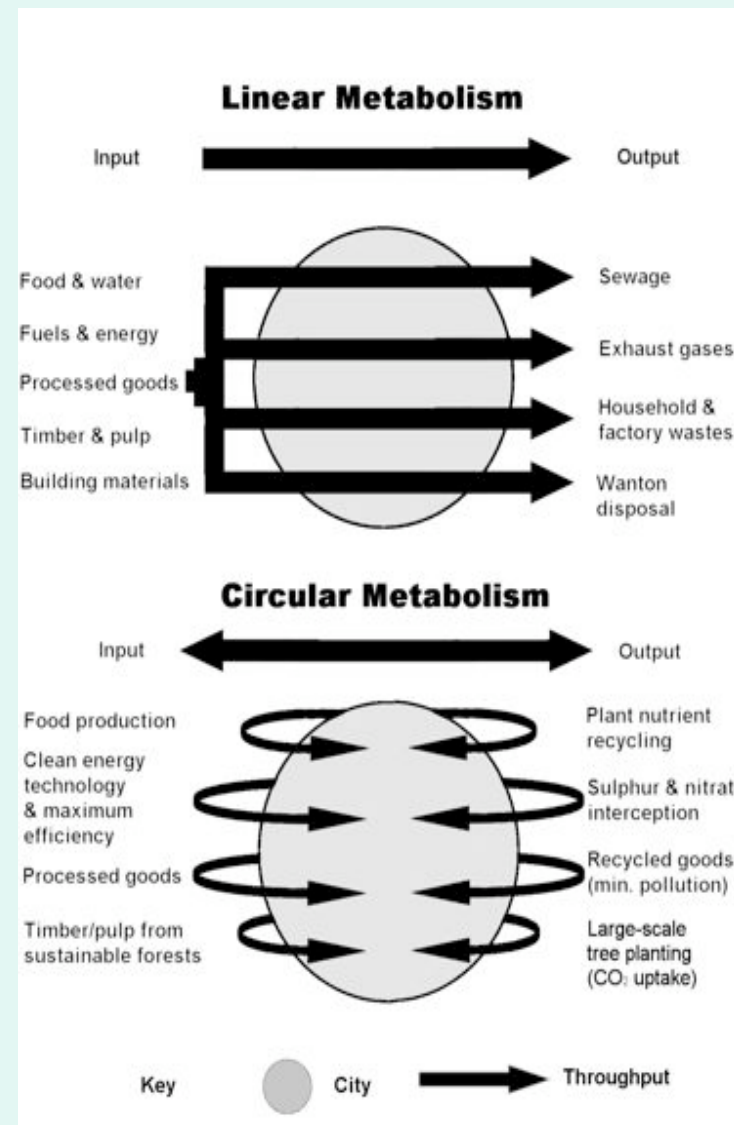
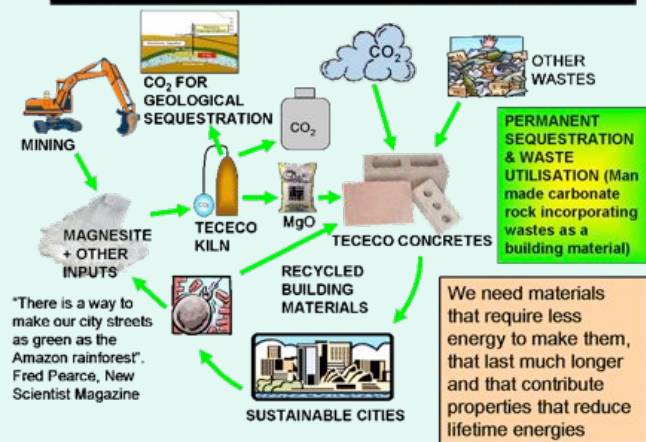
uncontrolled urban growth
lack of basic infrastructure
ecological problems > pollution
water, air, soil > loss of fertile land



Sustainable urban development – a theoretical framework

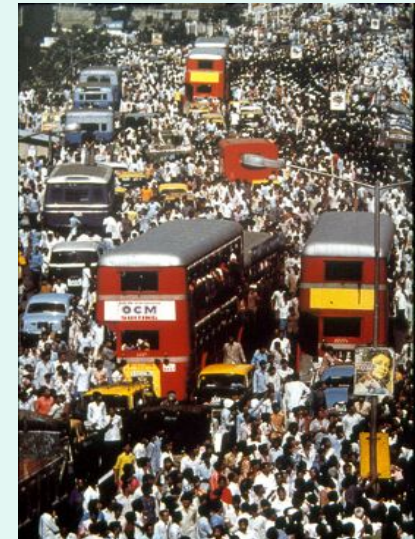
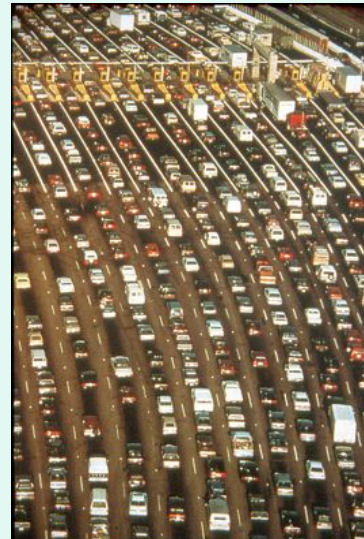
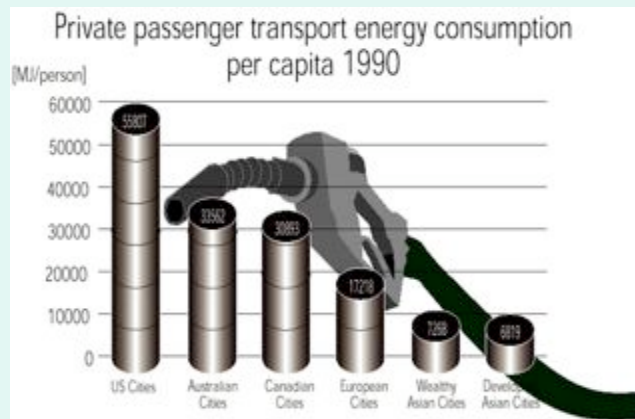


The TecEco Dream – A More Sustainable Built Environment



Urban mobility and energy consumption – sustainable cities ?

„on average, one US-American consumes as much energy as ·2 Japanese, 6 Mexicans, 13 Chinese, 31 Indians, 128 Bangladeshis, 307 Tanzanians, 370 Ethiopians..“



UN >

**„...global urbanization is a race against
the time >**

**huge investments are necessary
If not, all UN-millennium goals and
sustainability policies will fail...“**

