



TOWARDS AN URBANIZED WORLD a challenge for urban planning and sustainable urban development



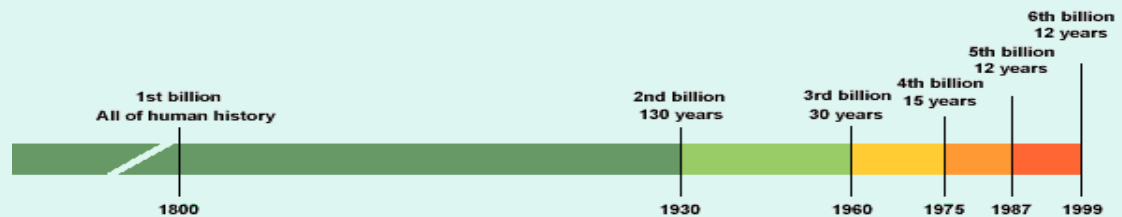
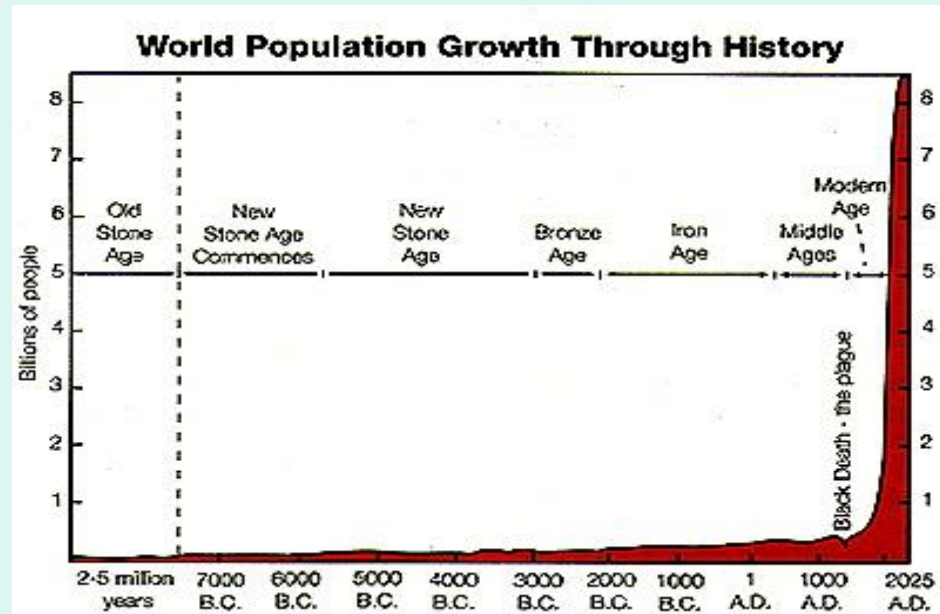
industrialization and „demographic explosion“

up to 1600 > relatively stable

1700 > modern age

1800 > dramatic increase > early industrialization

last 300 years > fundamental change



2050 - 7, 9 or 11 billion people?

2000 > 6 billion

2025 > 8

2050 > 7 - 11 ?

max. „carrying capacity“ of the earth ?

worst case > 11 billion, no major innovations

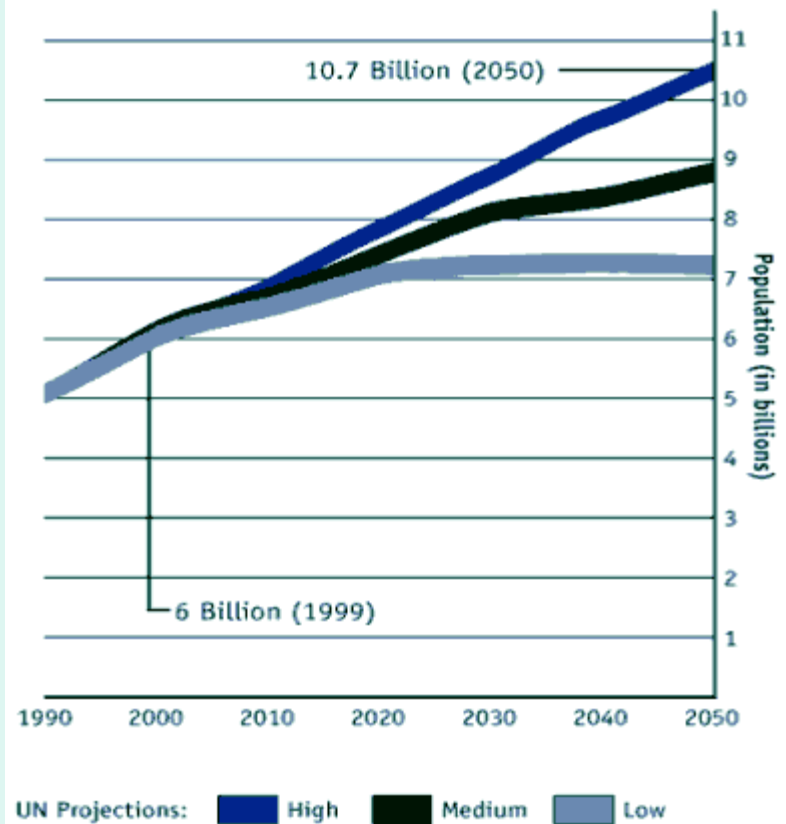
best case > 7 billion + new technologies >

sustainable global development



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.

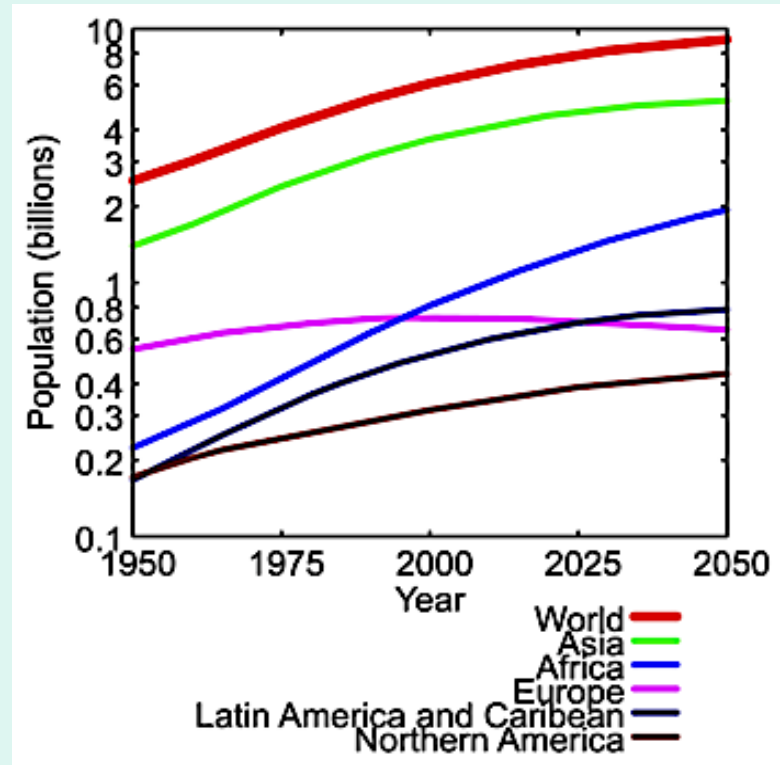
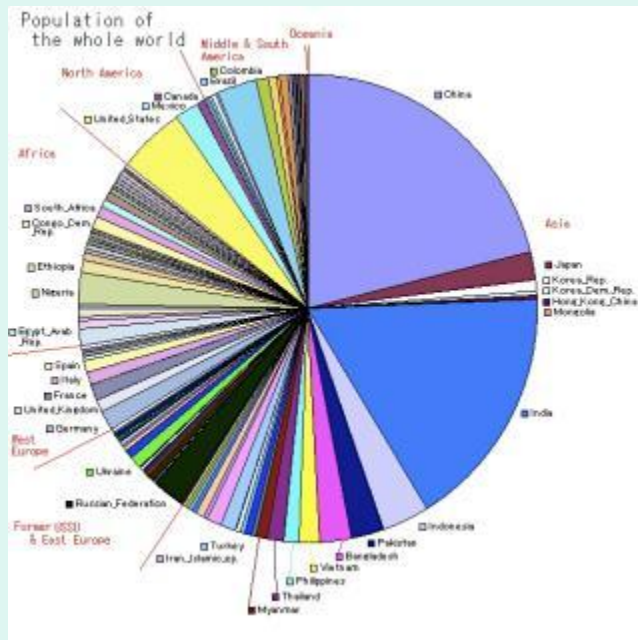


Source: United Nations, 1998. *World Population Prospects: The 1998 Revision*.

**2050 –
75% of world population in Asia and Africa**

Asia > + 50%
 Americas > 14%
 Africa > 14 %
 Europe (West+East) > 14%
 Turkey, Iran 8%

2050 >
 Africa > from 800 million to 2 billion
 Asia > from 3 to 5 billion



2000 - 3 billion urban dwellers

1800 > 2 %

1900 > 9 %

2000 > 50 %

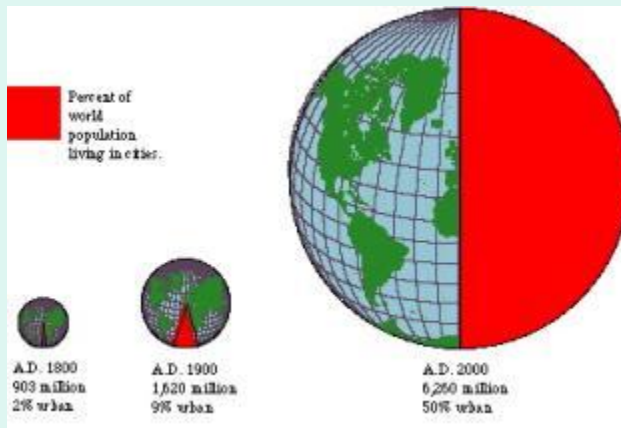
urban population 2000 > 3 billion

2010 > stagnating rural population

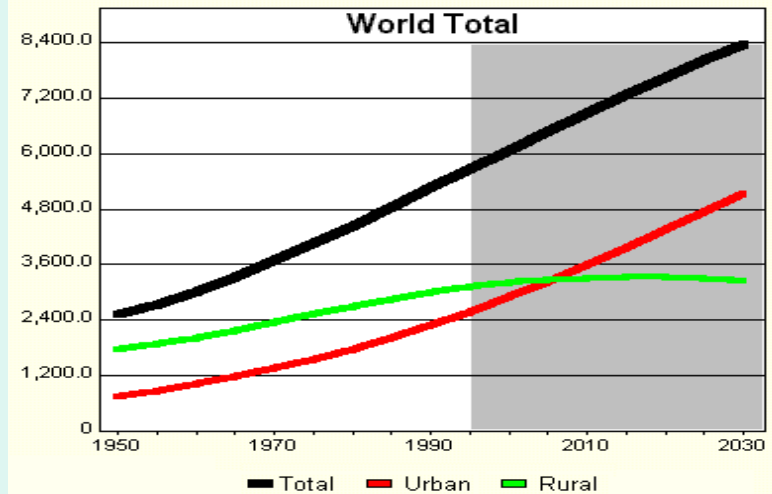
all future population growth

will be absorbed by cities

2030 > 3 + 2 = 5 billion



Total, Urban, and Rural Population (Medium Variant)



**regional urbanization:
latecomers Asia and Africa**

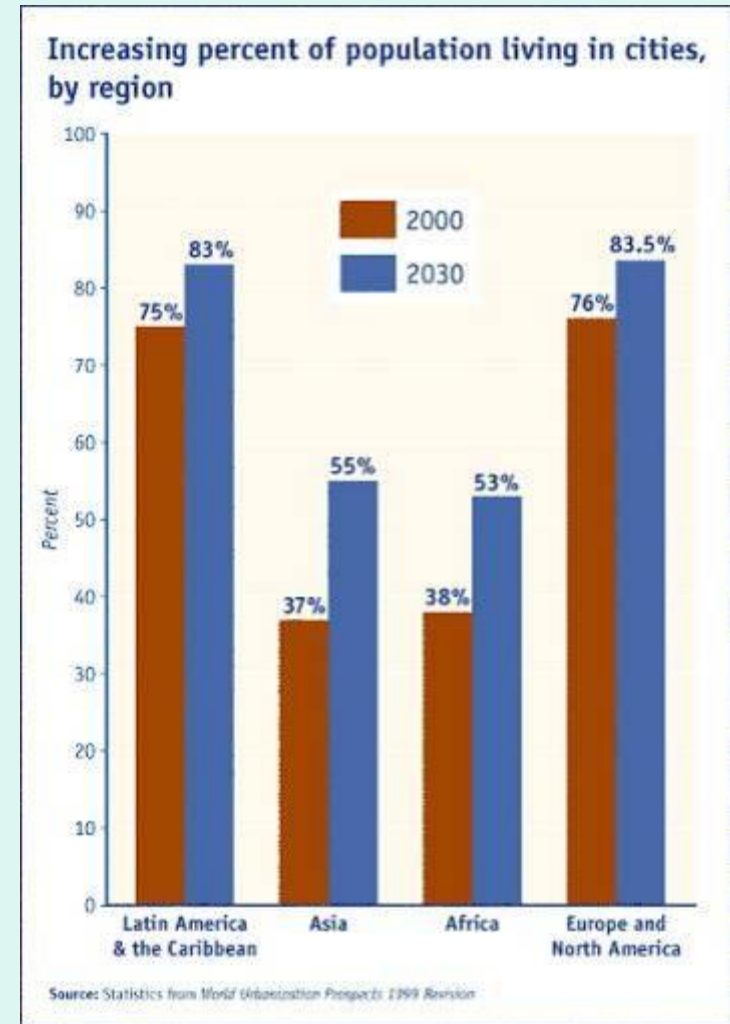
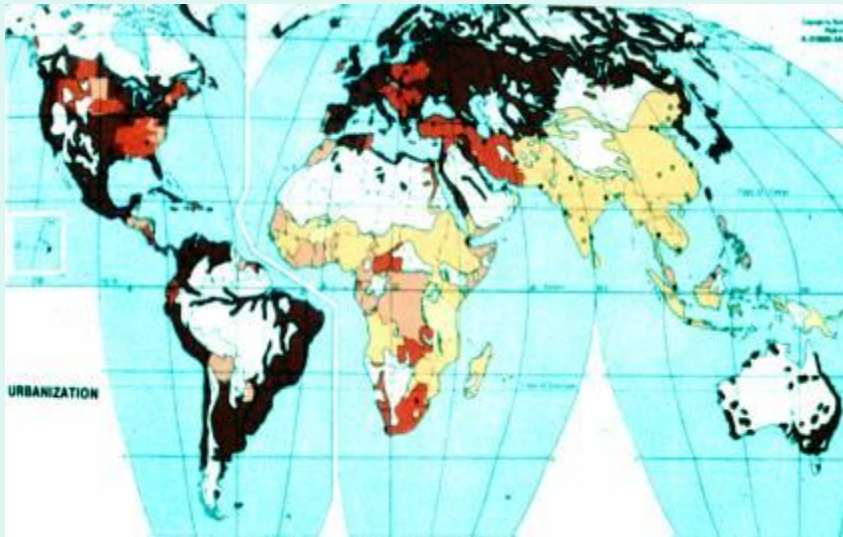
20th century >

Europe, North America > 75% > 83% (2030)

Latin America (!)

„latecomers“ Asia and Africa > 38% > 55% (2030)

now catching up with accelerated urban growth



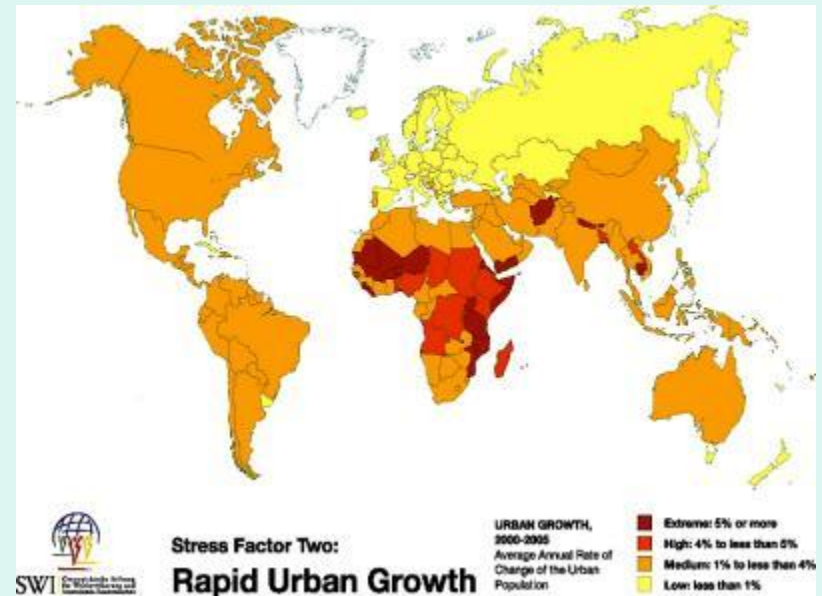
21st century - high-speed urbanization in Asia and Africa

19th / 20th century >
Europe, North America, Japan, Latin America

21st century >
„high speed urbanization“ in Asia and Africa

Africa (south of Sahara)	4,6 %
Southeast Asia	3,8 %
East Asia	3,4 %
West-Asia	3,0%
South Asia	2,9 %
North Africa	2,5%

new cities will be shaped according to
economic resources and planning capacity >
China



new towns in China

2050 - 5 billion urban dwellers ?

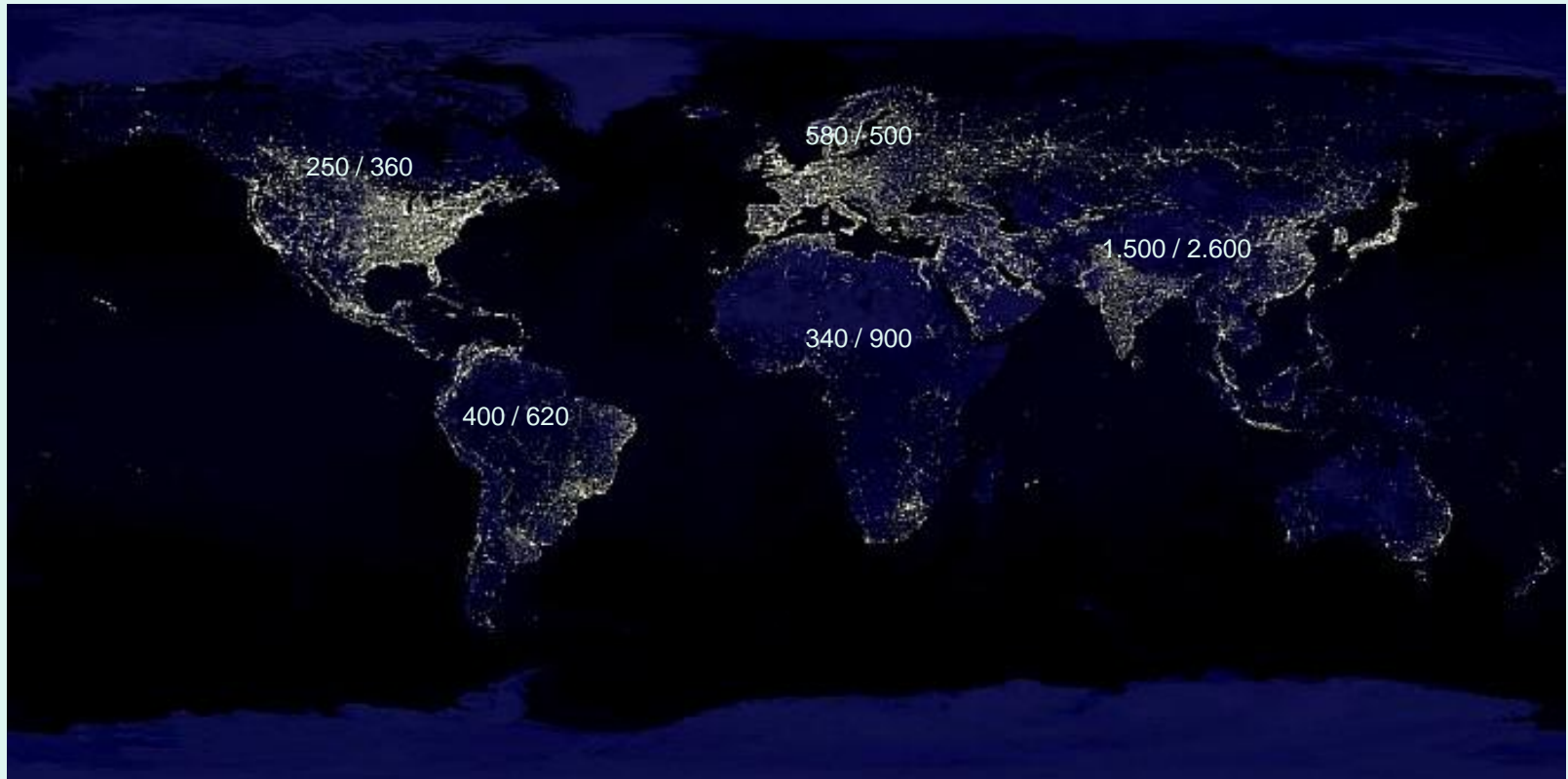
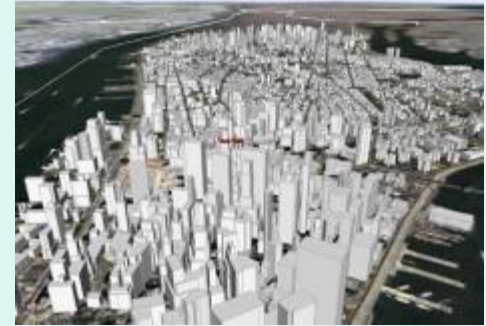
projected increase of urban dwellers

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

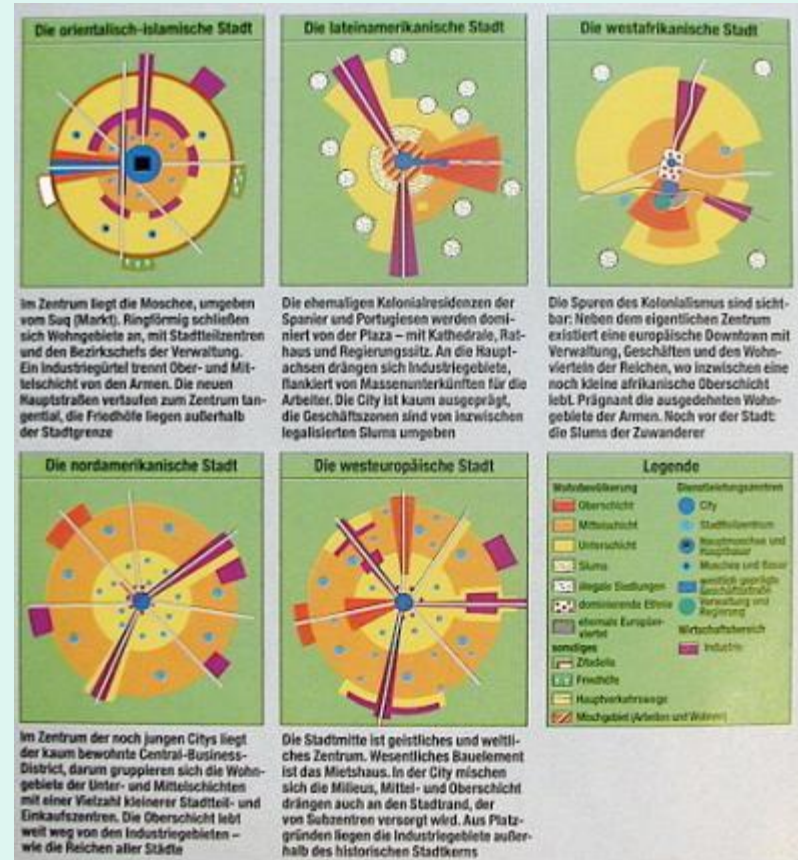
the West-European city
 the North American city
 the Latin American city
 the Oriental-Islamic city
 the West-African City

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

uniform globalized cities ?
 new regional urban models ?



Mexico City



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

the European city > a sustainable urban model ?



urban project in Heidelberg



Berlin

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

large variety of traditional, conventional and futuristic settlement patterns
high-tech-, low-tech-, no-tech-architecture

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



Megacities – the top of the „urbanization iceberg“

Spectacular growth of large cities >
Megacity research and projects
2000 > 20, 2030 > 30 megacities
+10 million

but:
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

75% of global urban population
in cities < 5 million

rapid growth of
small and medium size cities >
deconcentration
emerging metropolization

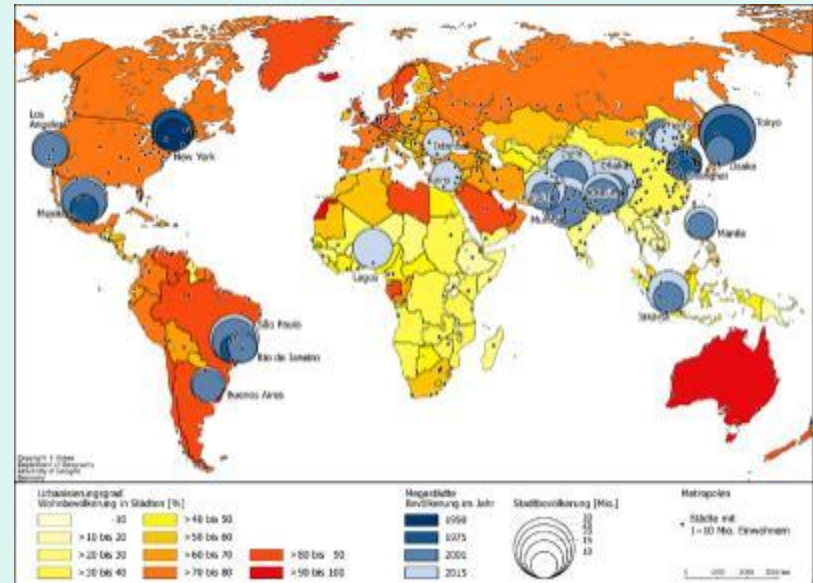
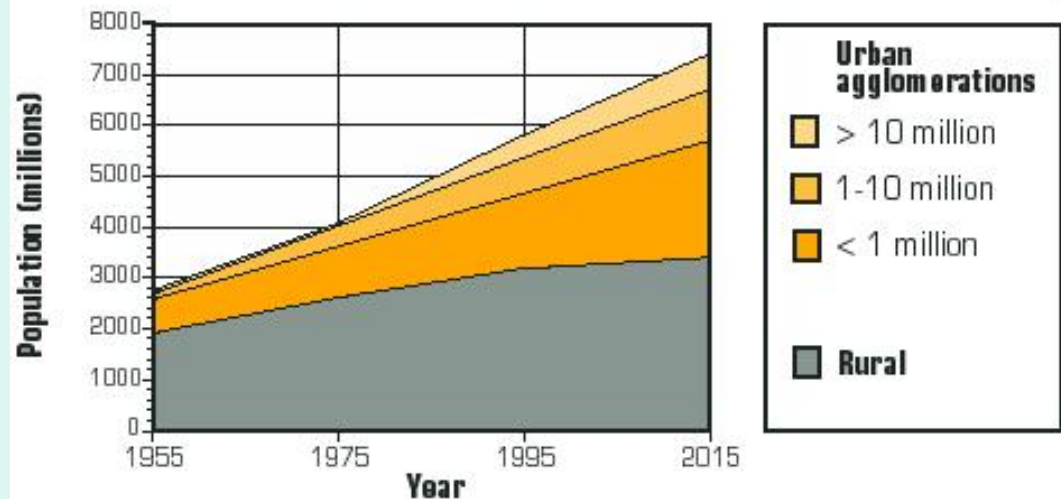


Fig. 16. Urban and rural population, world, 1955-2015



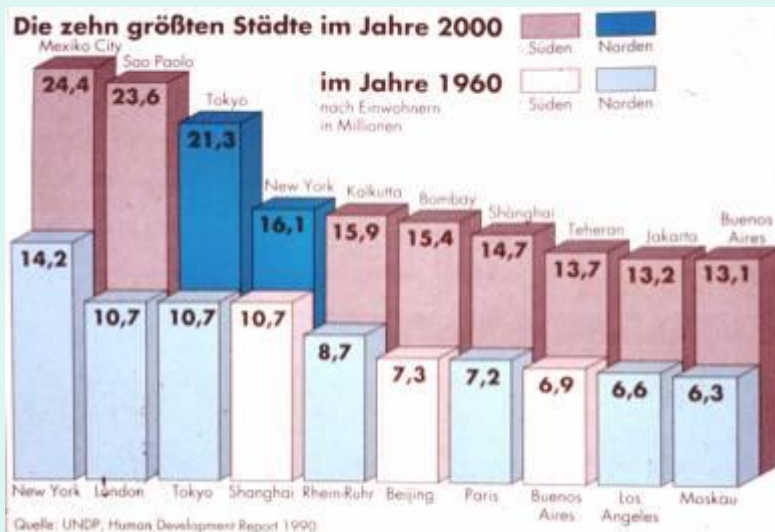
booming megacities

definition > 5, 8, 10 million inhab.

1960 / 2000 >

top ten north and south

growth projection Mecixo-City !

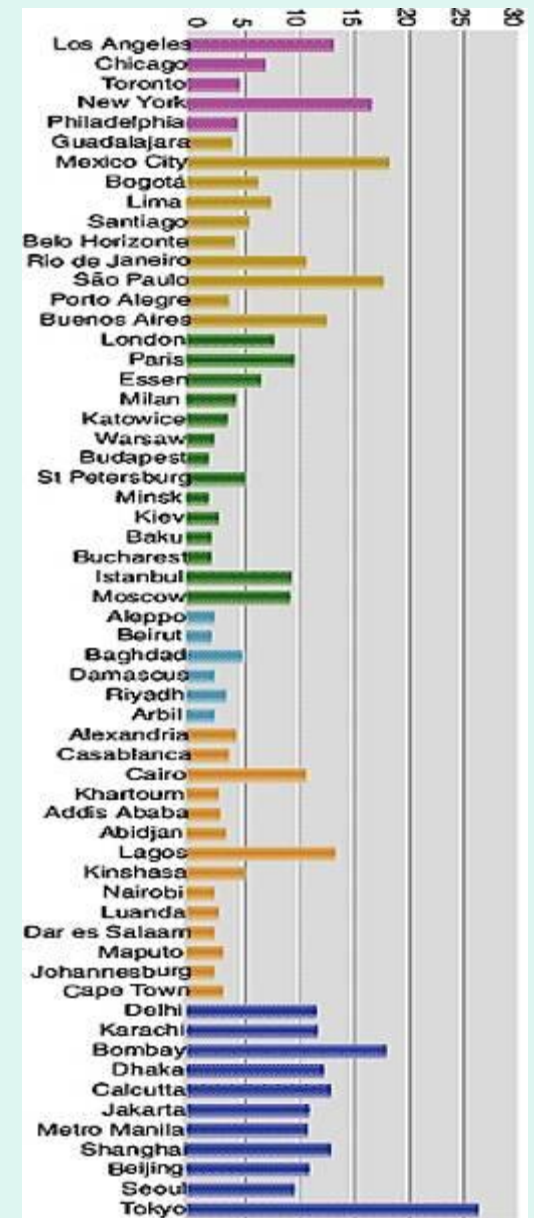
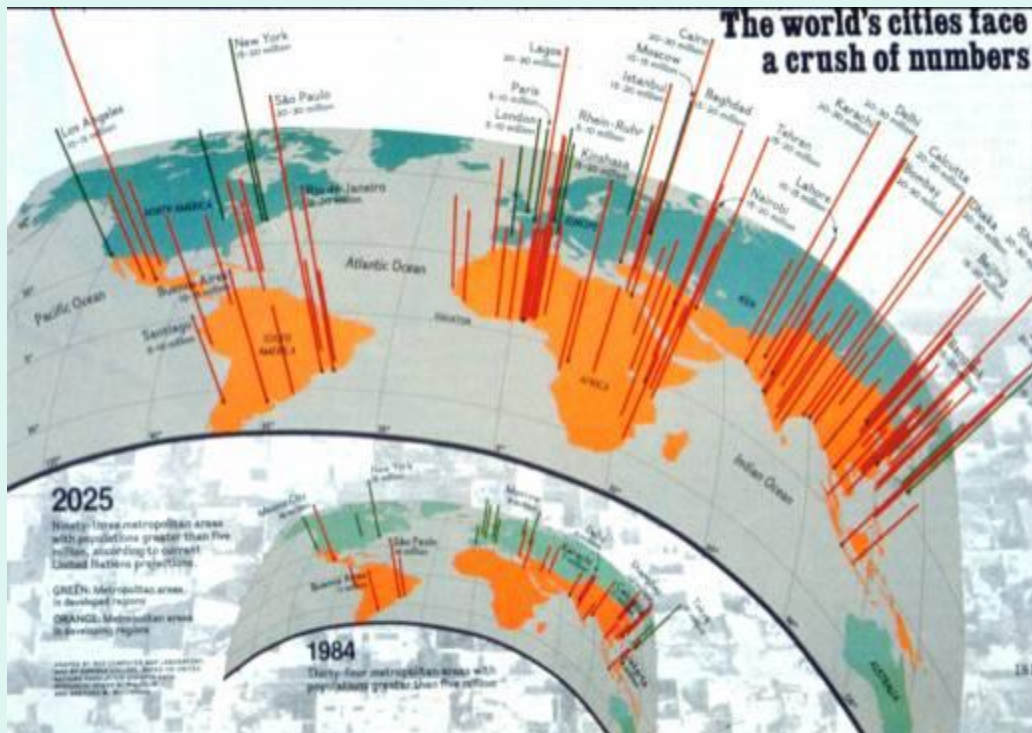


1950	1975	2000	2015
Stadt	Stadt	Stadt	Stadt
Bevölkerung	Bevölkerung	Bevölkerung	Bevölkerung
New York 12,3	Tokyo 19,8	Tokyo 26,4	Tokyo 26,4
	New York 15,9	Mexiko City 18,1	Bombay 26,1
	Shanghai 11,4	Bombay 18,1	Lagos 23,2
	Mexiko City 11,2	Sao Paulo 17,8	Dhaka 21,1
	Sao Paulo 10,0	New York 16,6	Sao Paulo 20,4
		Lagos 13,4	Karachi 19,2
		Los Angeles 13,1	Mexiko City 19,2
		Kalkutta 12,9	New York 17,4
		Shanghai 12,9	Jakarta 17,3
		Buenos Aires 12,9	Kalkutta 17,3
		Dhaka 12,3	Delhi 16,8
		Karachi 11,8	Metro Manila 14,8
		Delhi 11,7	Shanghai 14,6
		Jakarta 11,0	Los Angeles 14,1
		Osaka 11,0	Buenos Aires 14,1
		Metro Manila 10,9	Kairo 13,8
		Peking 10,8	Istanbul 12,5
		Rio de Janeiro 10,6	Peking 12,3
		Kairo 10,6	Rio de Janeiro 11,9
			Osaka 11,0
			Tsijing 10,7
			Hyderabad 10,5
			Bangkok 10,1

emerging megacities – a new challenge

2000 > Asia 11, Latin America 4,
Europe 3, North America 2, Africa 2
app. 100 emerging megacities > + 5 million

research and cooperation project „emerging megacities“>
to control and steer future urban development



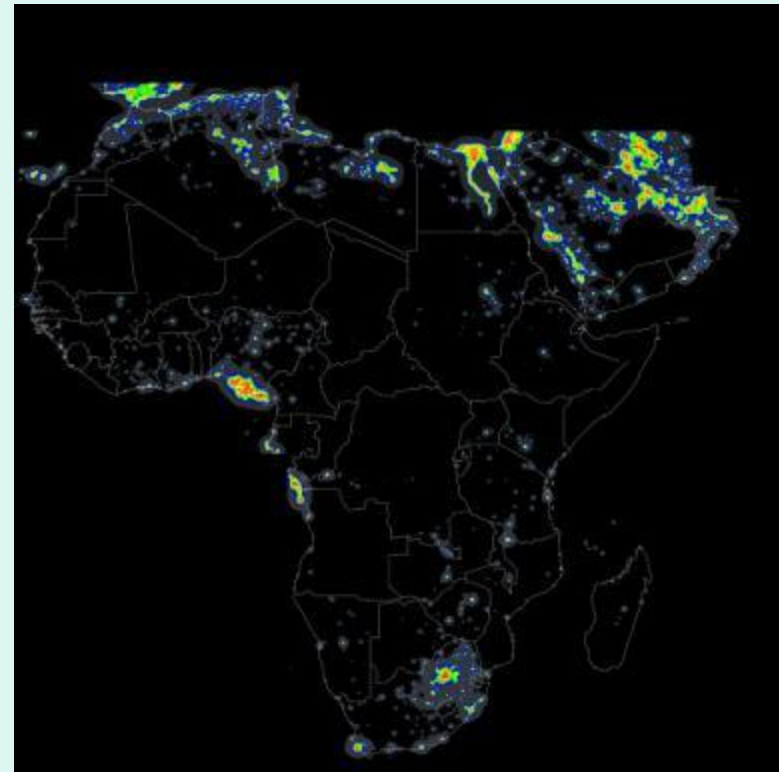
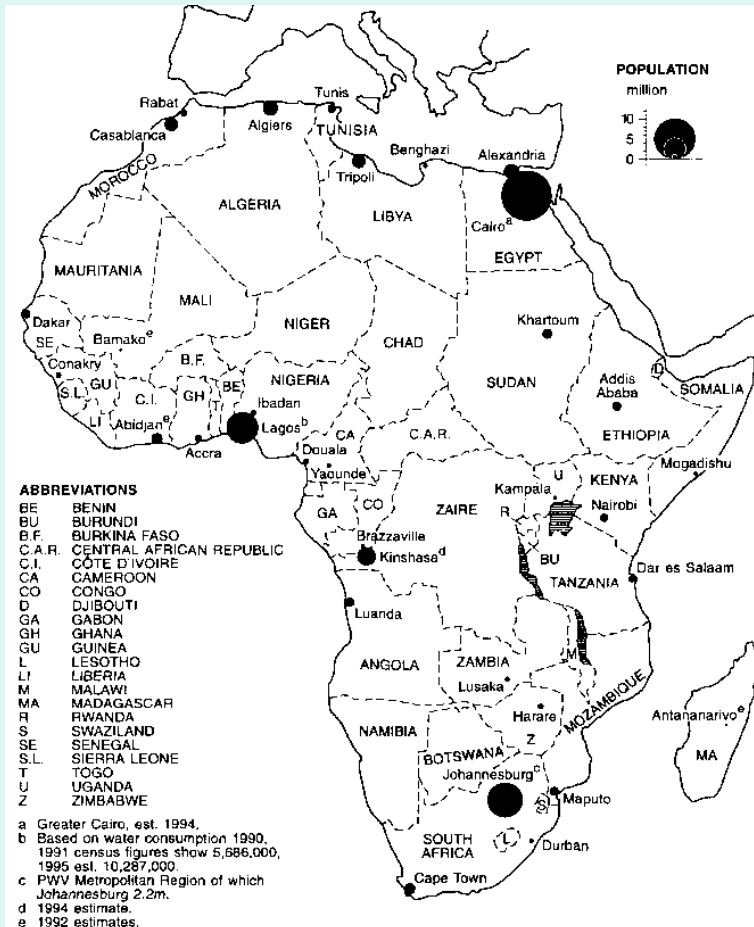
African (emerging) megacities

2000 >

2 megacities, 12 emerging megacities

economic activity areas >

oil, industry, urban agglomerations



Lagos	13
Cairo	11
Kinshasa	5
Alexandria	4,5
Casablanca	4
Abidjan	4
Addis Abeba	3,5
Cape Town	3,5
Maputo	3,5
Luanda	3
Khartoum	3
Nairobi	2,5
Dar es Salam	2,5
Johannesburg	2,5

How to manage „Meta-Cities“ ?

UN-Habitat > 20 million.
Meta- or Hyper-Cities

Tokio
2005 > 35 million

2020 >
Mumbai 33 million
Shanghai 27
Karachi 26
Jakarta 25
Dhaka 25

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

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

Megacities >
„spontaneous“ growth and
saturation ?

Mexiko City, Sao Paulo

Tokio



new Shanghai

Large and „small“ megacities

urban area of megacities >

New York	app. 3500 km ²	/ 17 mio.hab.
Sao Paulo	1200	/ 18
Kairo	600	/ 10

megacities in developing countries >
large population, but compact and
densely populated

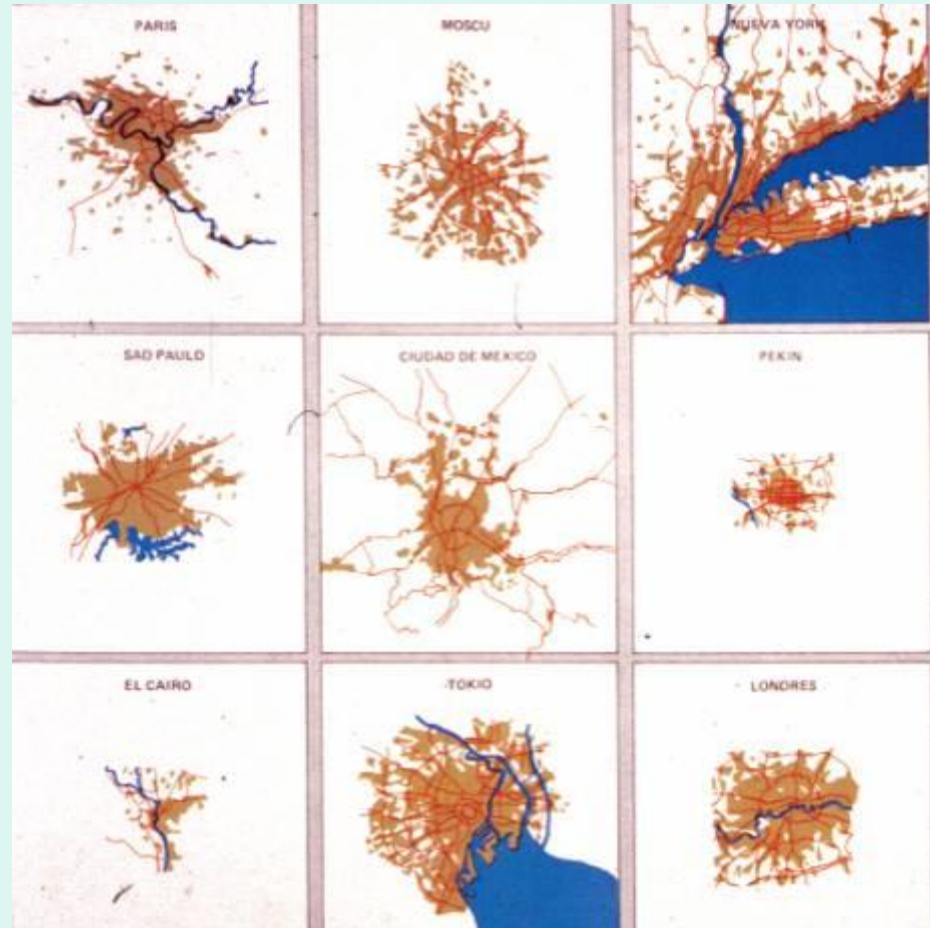
housing standards >

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

same applies for
public space, street network,
industrial areas

„developing megacities“ >

density 3-5 times higher than in
industrial/post-industrial megacities



Mega-agglomerations - Pearl River Delta

rapid urbanization >
conurbation of small and large cities
urban-rural continuum

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

Great Jakarta / Indonesia > Jabotabek
semi-urban landscape and corridors

semi-urban mega-agglomerations >
temporary or permanent structures ?
administration, planning, infrastructure ?

Pearl River Delta / China



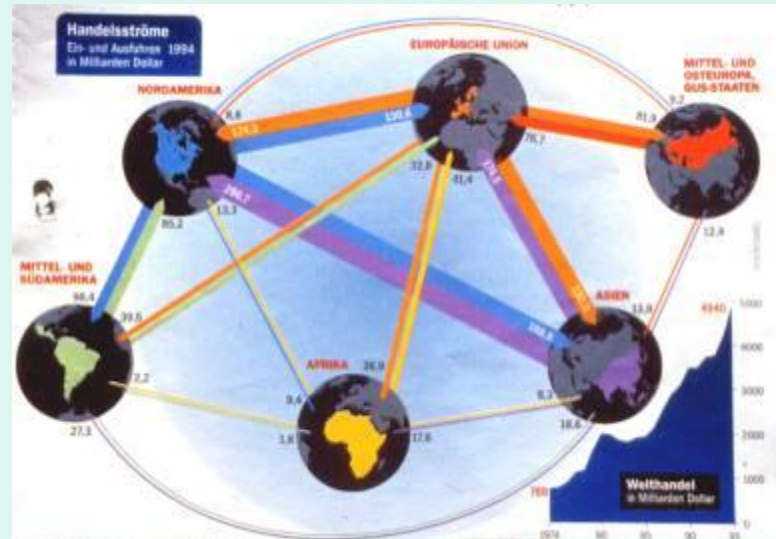
World Cities

megacity > population size
world city > functional definition

international role and importance
in the global economic network

world cities > post-industrial cities
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. >
model of dispersion and concentration

Dipersion of industrial producion >
production costs and future markets

Concentration of steering and control
functions in a few strategic locations >
world cities
cluster of corporate headquarters, stock
markets and related services

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

ranking according international role >

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



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)

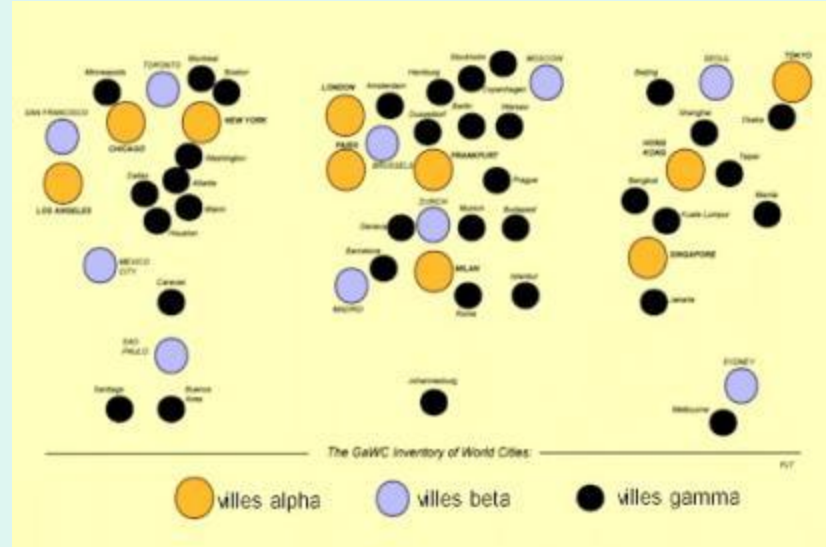
6 points: [Amsterdam](#), [Boston](#), [Caracas](#), [Dallas](#),
[Düsseldorf](#), [Geneva](#), [Houston](#),
[Jakarta](#), [Johannesburg](#), [Melbourne](#), [Osaka](#), [Prague](#),
[Santiago](#), [Taipei](#), [Washington](#)

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!



Frankfurt

**world cities
as powerful „city states“ ?**

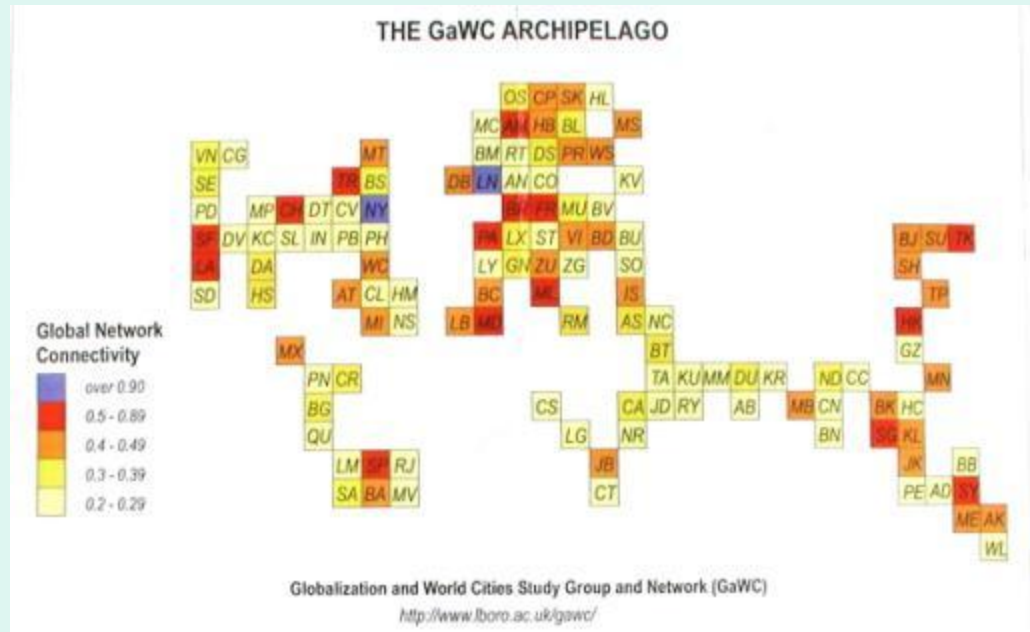
world cities > larger GNP
than many countries

national borders disappear
world cities act as „city-states“
global competition
to control global markets

scenario >
rich and poor „urban islands“ (not
countries) will shape the future
economic geography

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

alternative spatial and functional
Modell ?



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

effort to attract foreign investment
and to develop world city functions

to change the economic and urban structure
new industrial and post-industrial activities >
information, finance, tourism

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



Shanghai / Pudong



Mexico-City / Santa Fe



New Shanghai / Pudong – the world's largest world city project

Dubai
the artificial city and business model



Mumbai – emerging world city, persisting poverty

established and emerging world cities >
Shanghai, Bombay..

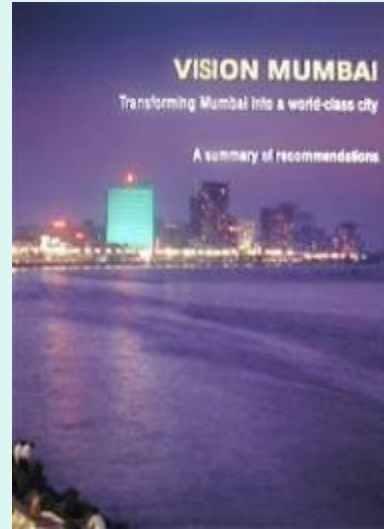
formal sector incapable to absorb
urban labour force >
rapid growth of informal sector

LA, Africa > fast growing population
stagnating urban economy >
reason > disadvantages in global competition >
location, markets, infrastructure, skilled labour

UN-city report 2005 > World Bank and
neo-liberal economic reform >
privatization, reduced public employment and
expenditure, monetary devaluation, foreign
imports, de-industrialization >

loss of formal job opportunities
boom of informal economy

urban fragmentation, social polarization,
increasing informalization of the city



Mumbai

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

Opposite position >

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
examples >
public transport, markets, production sector

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

Informal sector > absorbs millions of people who
don;t find formal jobs
without a booming „street economy“
many cities would collapse



Mexico City

Slums - urbanization of poverty

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

world population > 6,4 billion

Urban population > 3,2 billion

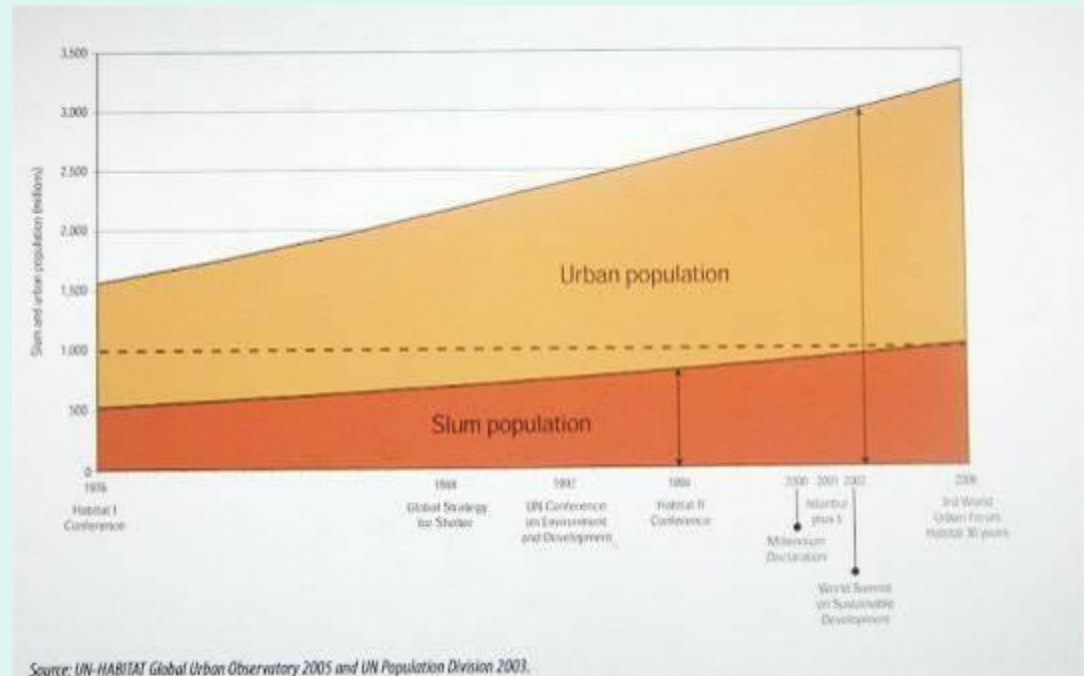
In spite of many international conferences and resolutions >

app. 1 billion people in „slums“

1/3 of total urban population

urbanization > progress and development

In fact > urbanization of poverty



Is sustainable urban development possible with 30% informal settlements and slums ?

1 billion people in informal settlements and slums > 2 billion in 2030

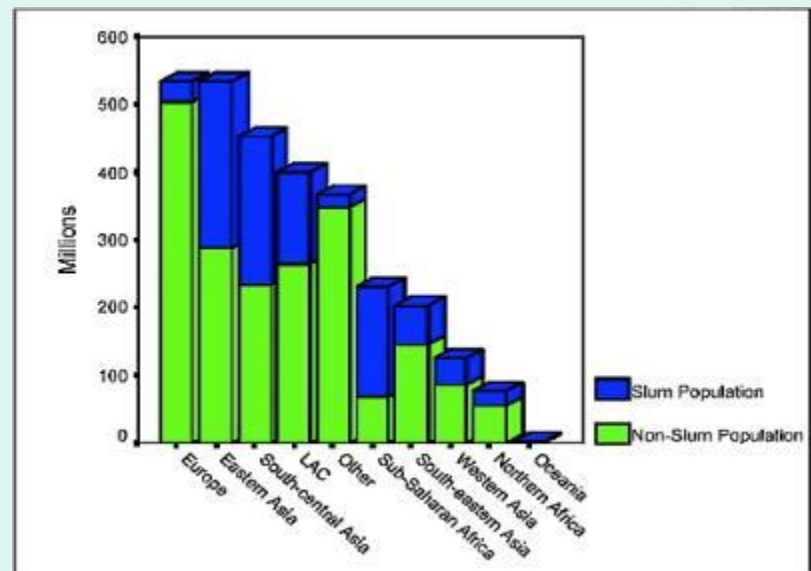
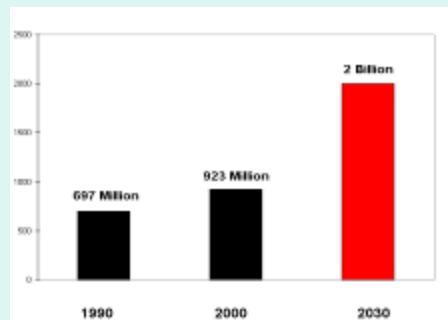
50% young people (less than 20 years) lack of life perspectives > migration, radicalization

regional differences

East Asia, Latin America, North Africa, slums are growing slower than cities
South Asia, Africa (Sub-Sahara) > slums are growing as fast as cities

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

Rio de Janeiro

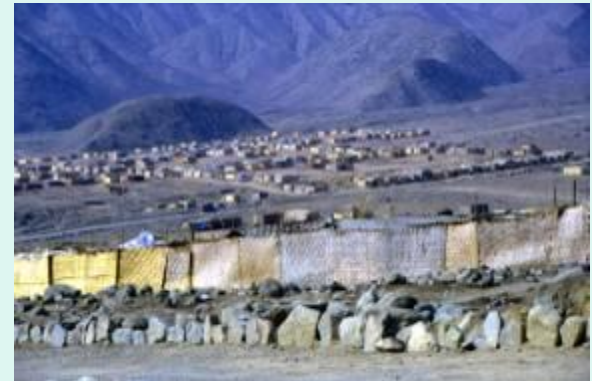


Informal settlements - problem or solution ?

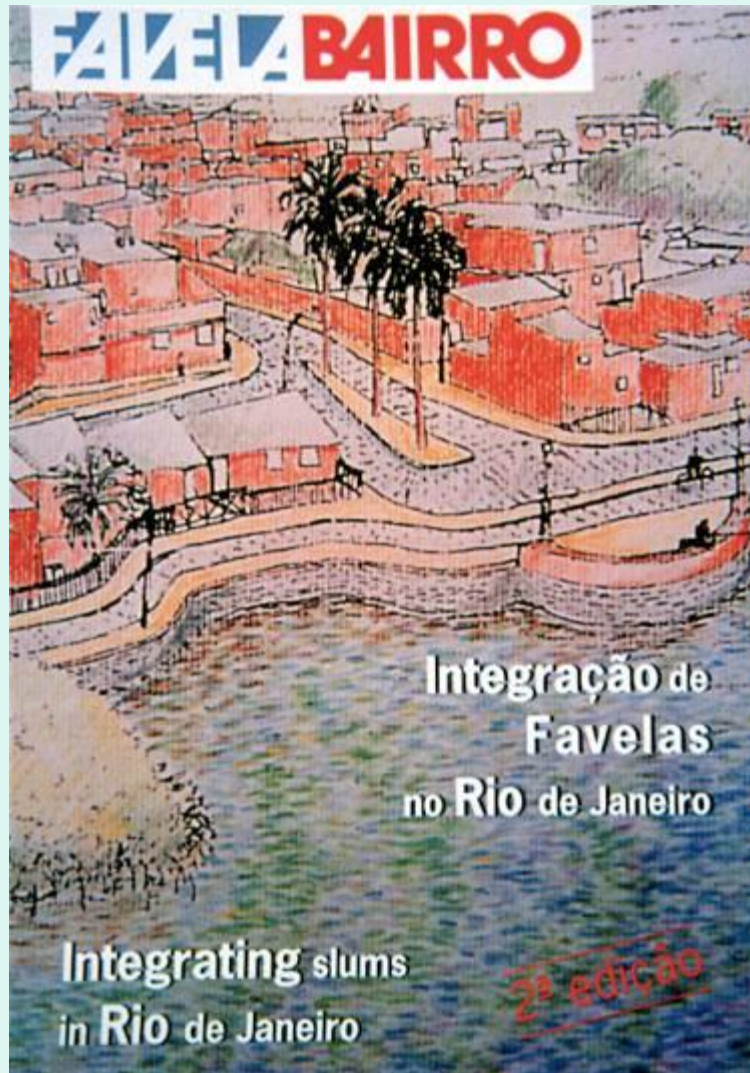
Large variety of informal settlements and slums
1960s > „slums of hope, slums of despair“
hard core slums > marginalization, ghettoization
self-help settlements > consolidation and integration

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.

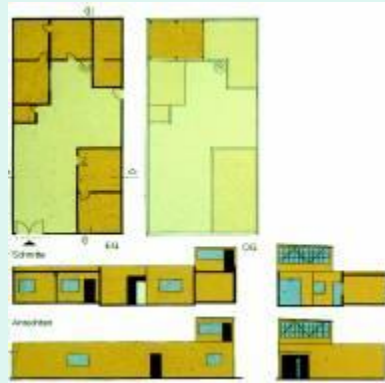
Barriada in Lima / Peru
Gecekondu in Istanbul
Bustee in Mumbai
Palafita in Rio de Janeiro



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

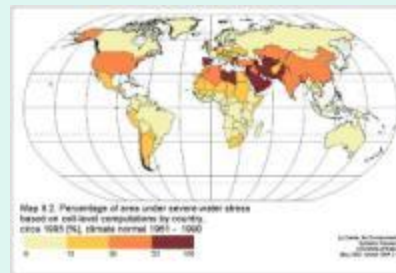


Megacities = mega-risks

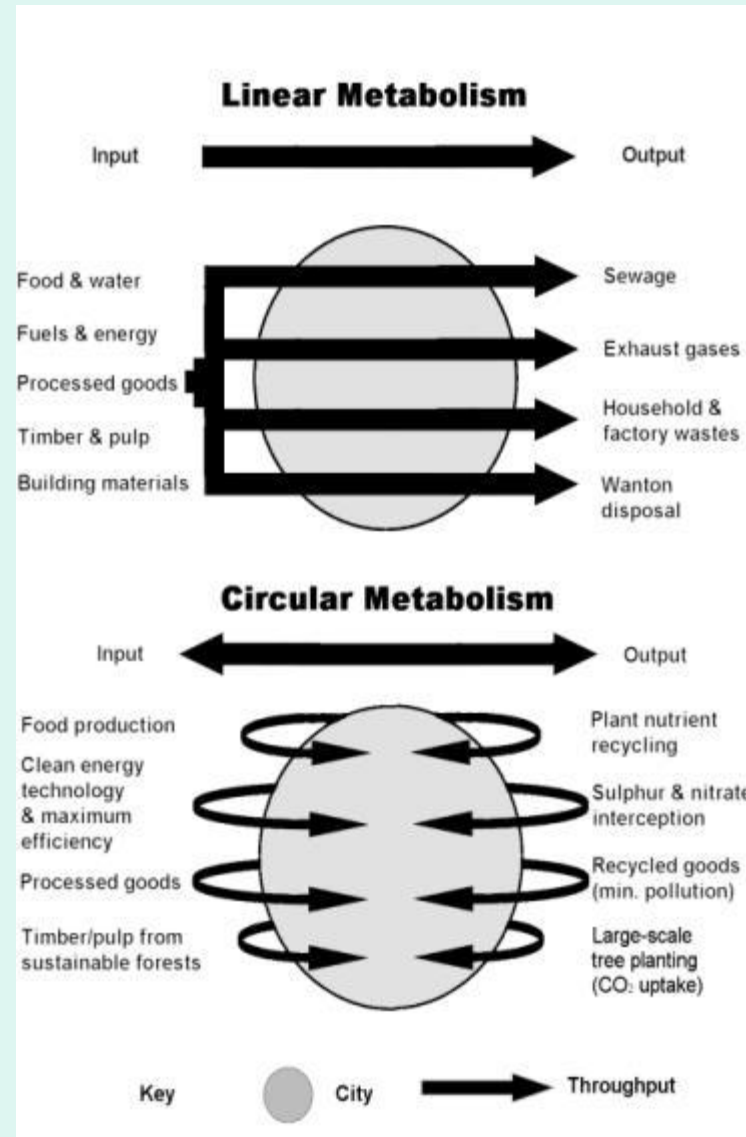
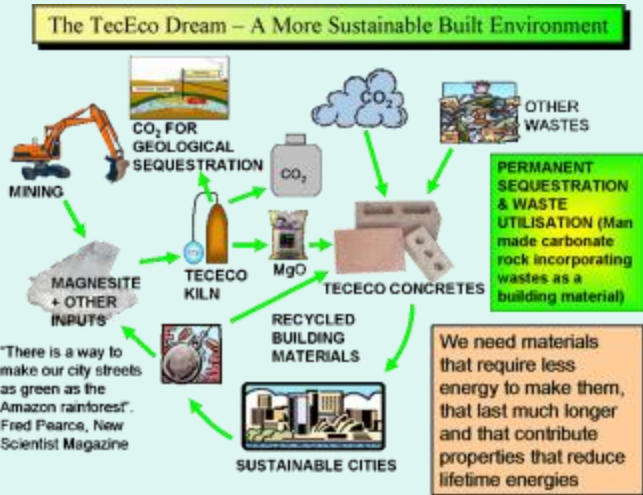
Vulnerable to natural and other disasters > earthquakes, rising sea level, scarcity of water and desertification, technical disasters (explosions), terrorism..

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

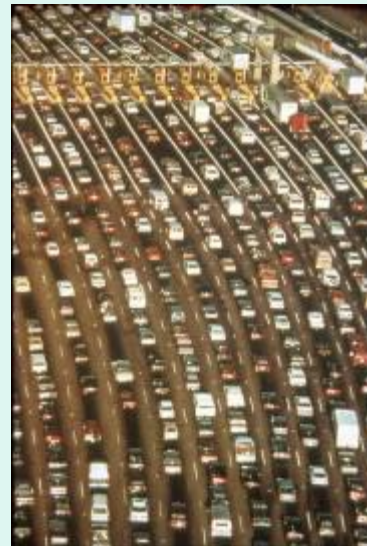
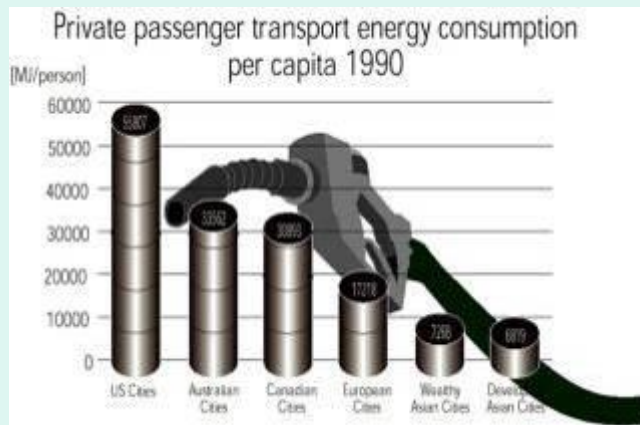


Sustainable urban development – a theoretical framework



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

