



中国社会科学院城市发展与环境研究所

Institute for Urban & Environmental Studies Chinese Academy of Social Sciences

# **China's Urbanization** **inclusive, livable and sustainable** **a transformative process**

## **A China Story II: New Pathways to Urbanization**

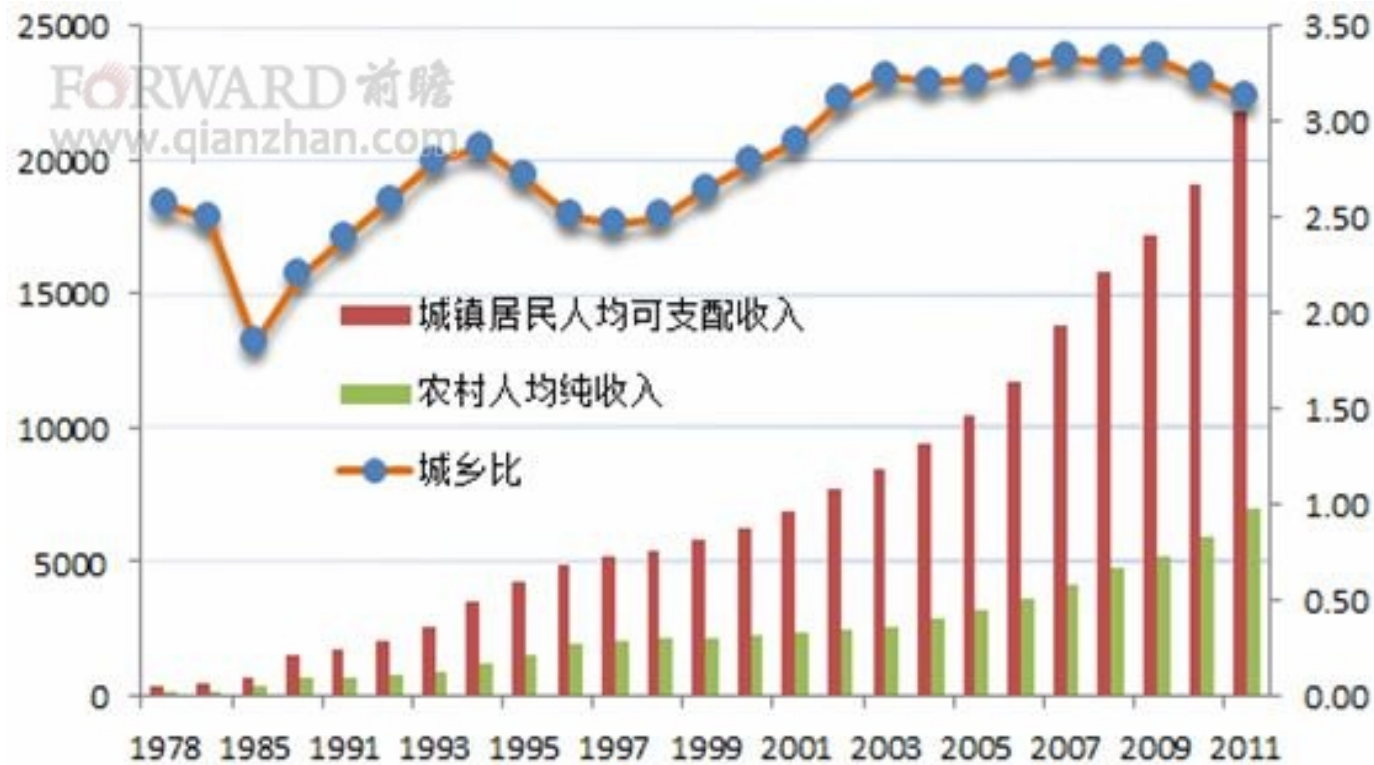
Conference Room, North Lawn Building, United  
Nations Headquarters, New York, USA

**July 7 2014 10:00 am - 13:30 pm**

**Pan Jiahua**

**July 7, 2014**

An Urban Dream: urban-rural  
duality to urban-rural integration

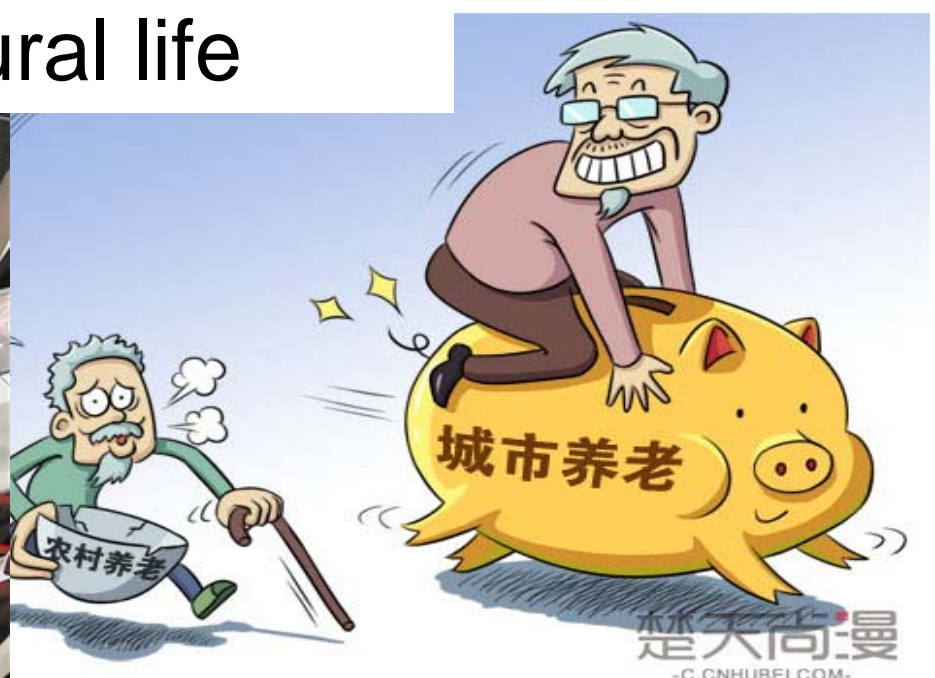


Rural-urban  
Income  
disparity





Urban-rural duality:  
education, health care,  
pension, cultural life



# Physical Infrastructure

## Urban physical infrastructure 2000-2012

	2000 年	2012 年
Tap water (%)	63.9	97.2
gas connection (%)	44.6	93.2
Urban road (m <sup>2</sup> /c)	6.1	14.4
	2000 年	2012 年
housing space (m <sup>2</sup> /c)	20.3	32.9
Waste water treatment (%)	34.3	87.3
Green space (m <sup>2</sup> /c)	3.7	12.3
Middle school	14473	17333
Hospital beds (10,000)	142.6	273.3

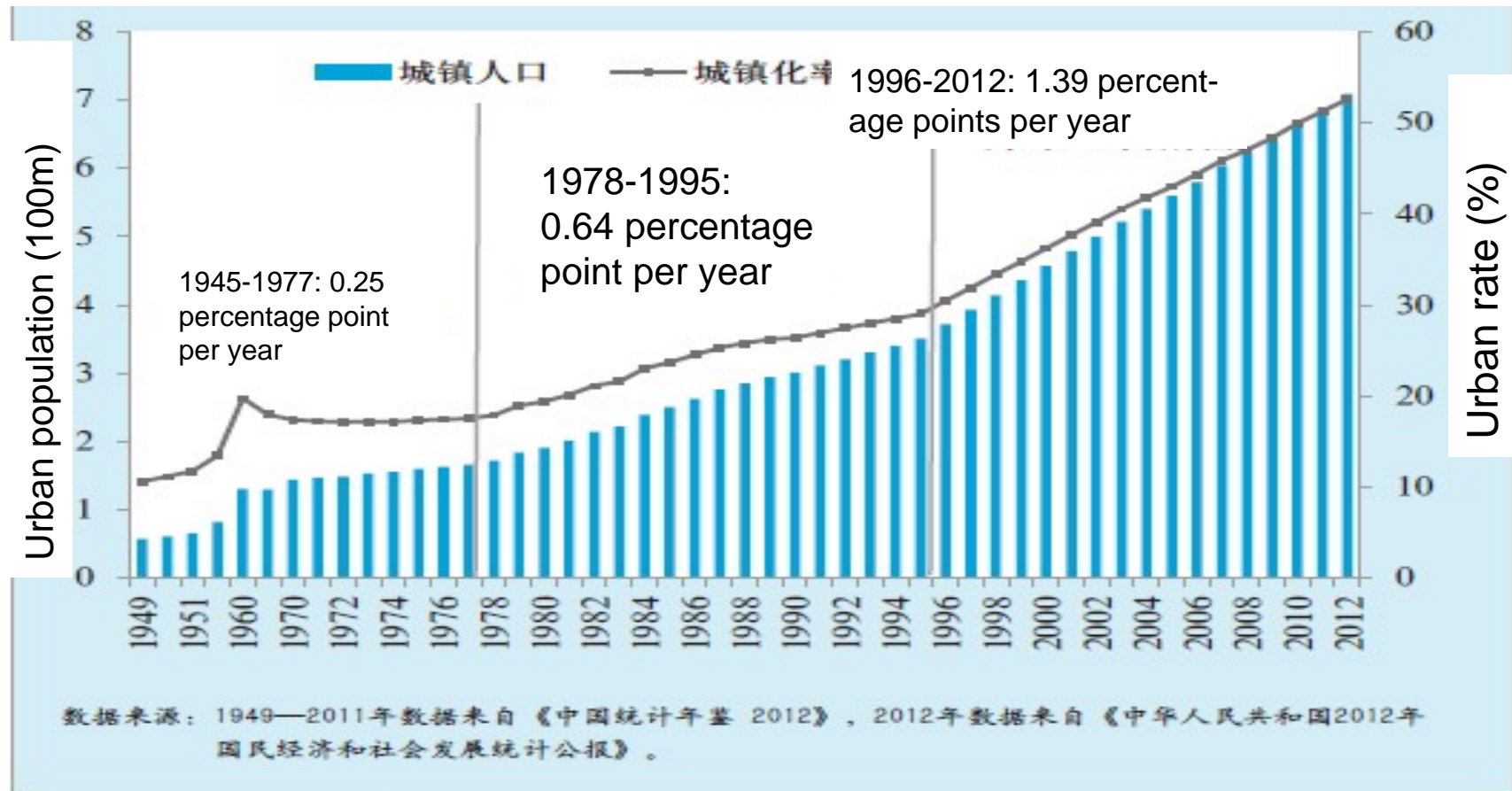




# Urban-Rural Integrated Development

- Urbanization → extending and upgrading social services and infrastructure to rural areas
- Industrial development → agricultural modernization: labor saving, high productivity
- A transformative process to eradicate rural-urban duality

How far?



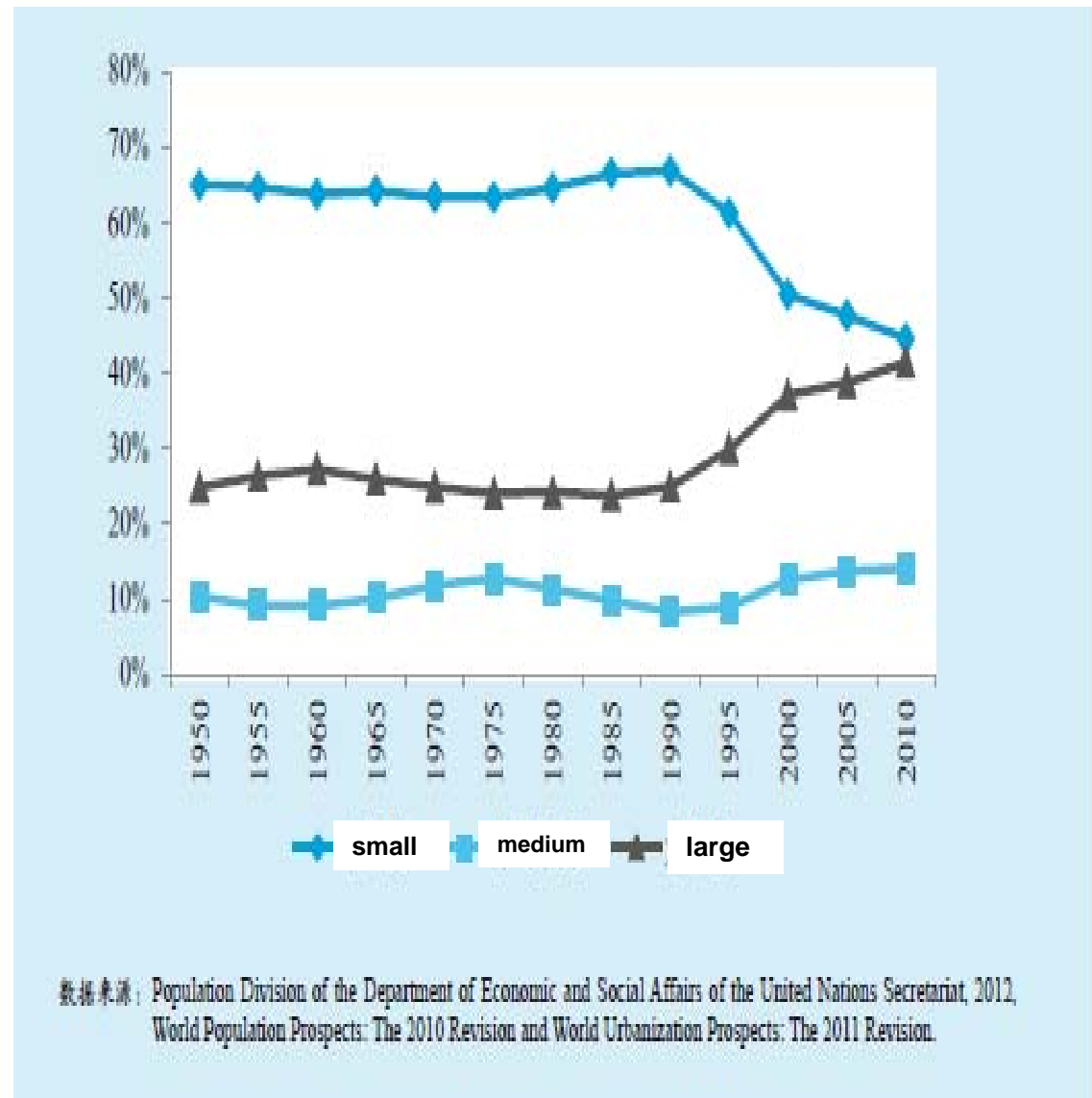
1978—2013, total urban from 170m to 730m, urban rate from 17.9% up to 53.7%, 1.02 percentage points per annum  
from an agrarian to a mainly industrial and urban society



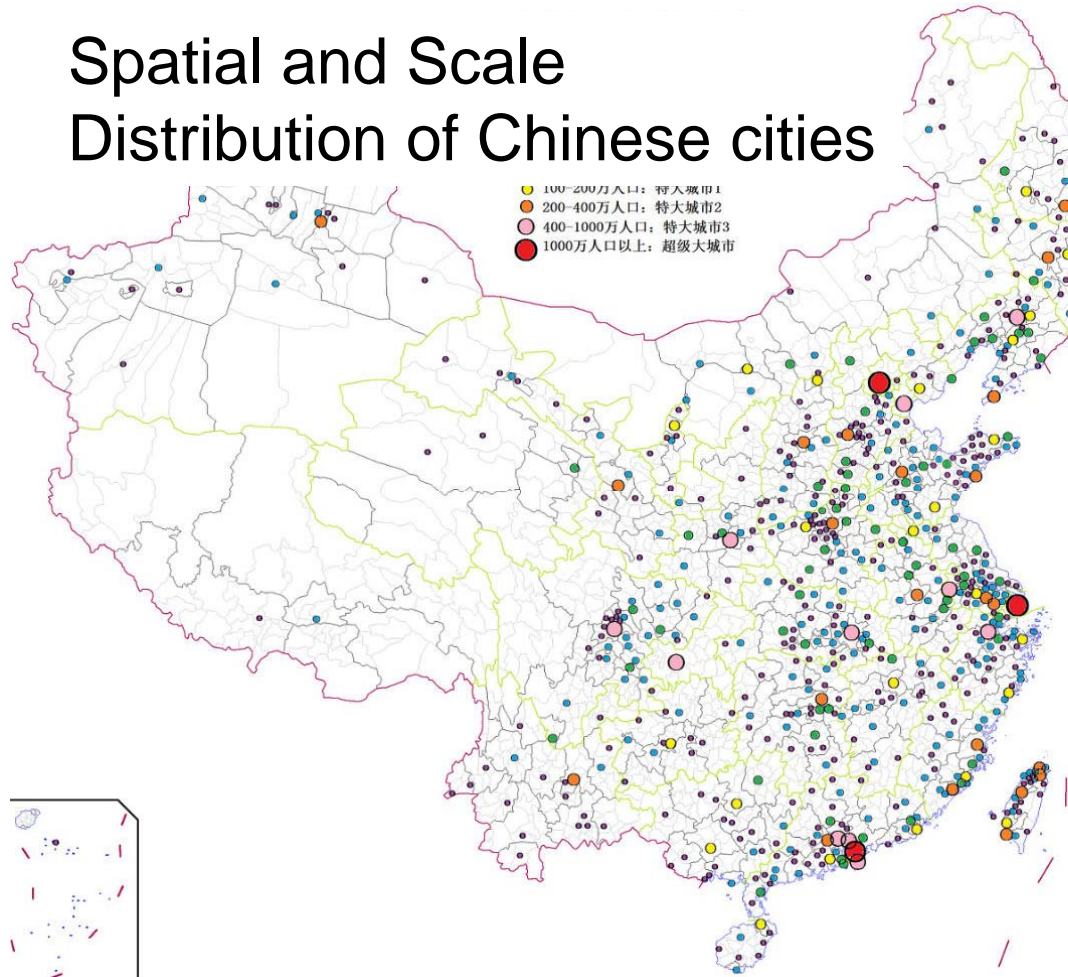
# Large cities have been leading the way:

## Proportion of the urban population in different city sizes

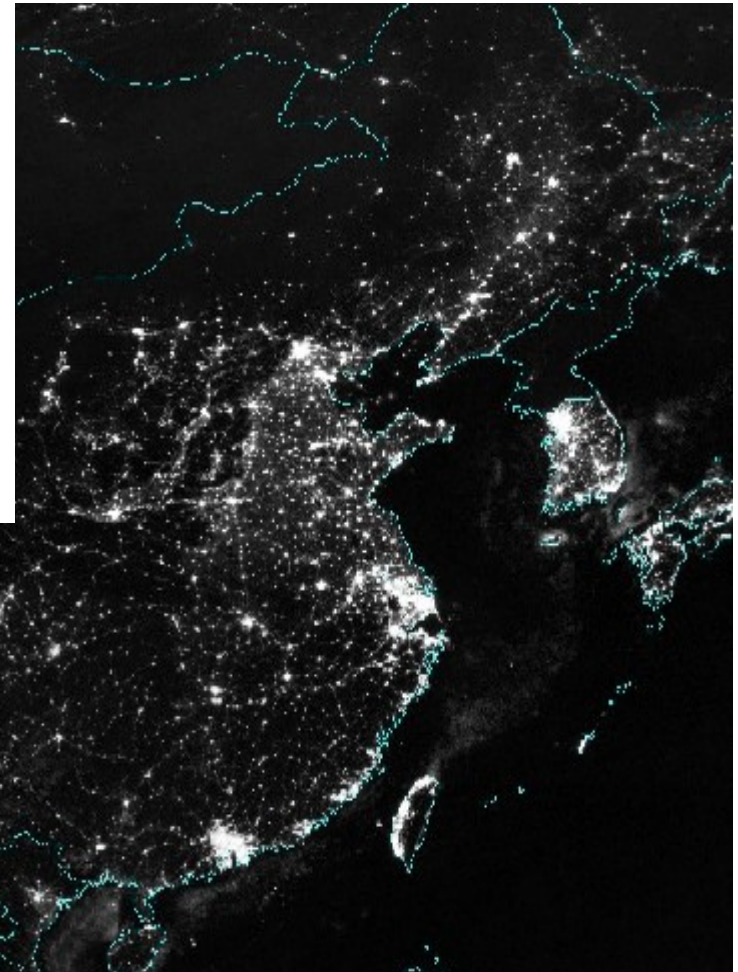
- Before 1990s: small dominating
- 1990s-2012: large expanding
- Future?



# Spatial and Scale Distribution of Chinese cities



Large & concentrated  
Beijing-Tianjin-Hebei,  
Yangtze Delta, Pearl River  
Delta: 2.8% land, 18%  
population, 36% GDP



	1978 年	2010 年
>10 million	193	658
5-10 million	0	6
3-5 million	2	10
1-3 million	2	21
0.5-1 million	25	103
<0.5 million	35	138
towns	129	380
	2173	19410

注: 2010 年数据根据国家统计局人口统计公报整理

# Regional variation

	Land area	Population (2010)	Population density
	10,000km <sup>2</sup>	10,000	Per km <sup>2</sup>
Shanghai	0.82	2302	<b>2794</b>
Beijing	1.64	1961	<b>1195</b>
Tianjin	1.19	1294	<b>1086</b>
Jiangsu	10.67	7866	<b>737</b>
Shandong	15.71	9579	<b>610</b>
Guangdong	17.98	10430	<b>580</b>
Henan	16.55	9402	<b>568</b>
Zhejiang	10.54	5443	<b>517</b>
Anhui	14.01	5950	425

- Coastal region: 62.2%
- Central region: 48.5%
- Western region: 44.8%

- Coastal region: destination of rural immigrants, largely industrialized & urbanized
- Central & western region: less developed and source region of rural migrants

Ningxia	5.20	630	<b>122</b>
Yunnan	38.32	4597	<b>120</b>
Heilongjiang	45.26	3831	<b>85</b>
Gansu	40.41	2558	<b>64</b>
Inner Mongolia	114.51	2471	<b>22</b>
Xinjiang	166.49	2181	<b>14</b>
Qinghai	71.75	563	<b>8</b>
Tibet	120.21	300	<b>2</b>

# The challenges

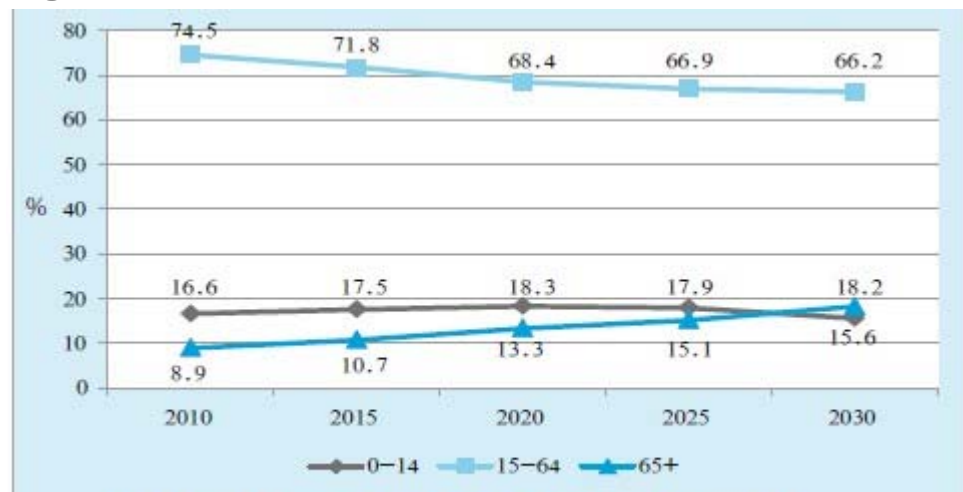


# Large in Scale & Long in Process

- If urban-rural equilibrium at 70%, some **300 m** more to be urbanized
- 1 percentage point urban level: **14 m** added to urban sector each year, up to 2030
- 30% rural residents, around **400 m**, similar level of social services to be provided
- Population **aging**: demographic changes



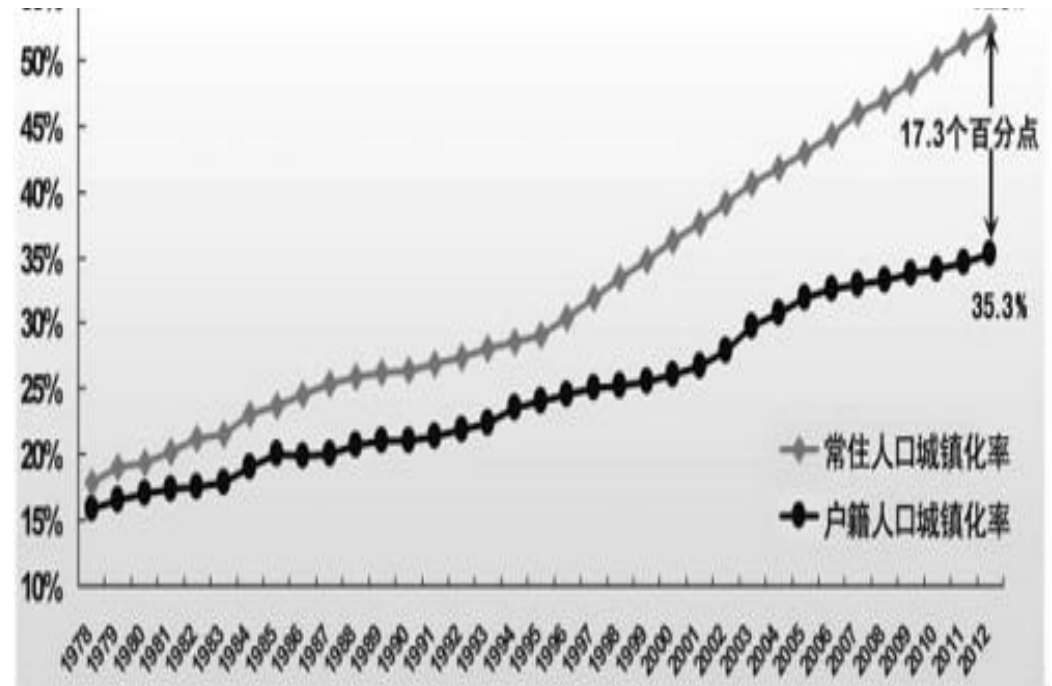
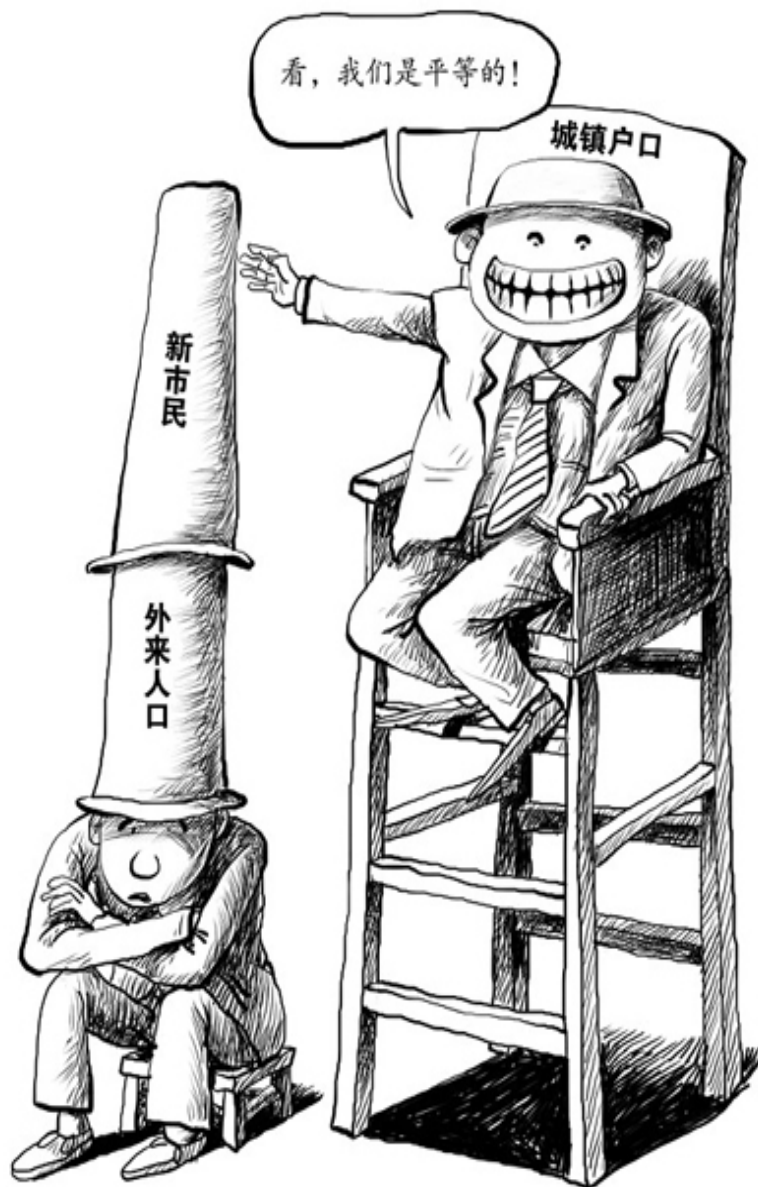
Age structure of China in 2010 and 2030 ( m )



Age structure change, 2010-2030 (%)

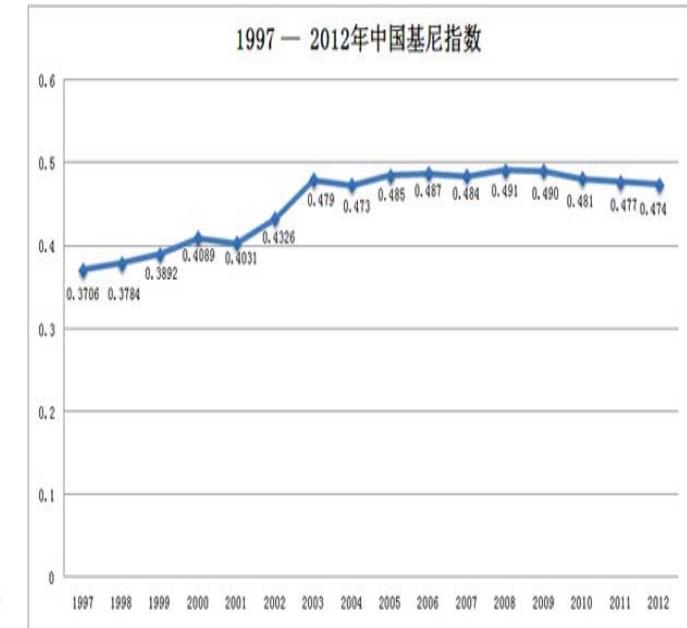
# Inclusive: Urban citizenization

Rural migrants discriminated and marginalized in cities

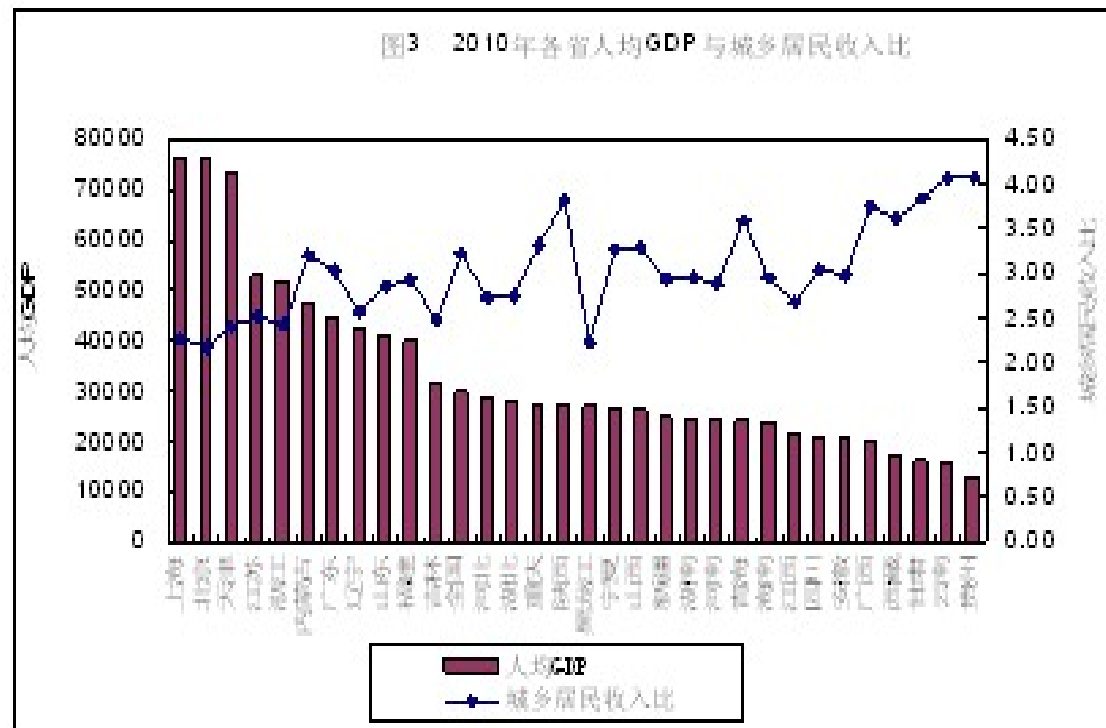


# Inclusive: narrow the gaps

- regional: east, central, west
- Urban-rural
- Rich-poor



注：1997-2002年数据来源于国家统计局文章 2003-2012年数据来源于国家统计局



s.xinhuanet.com/observation/20112247483.htm



# Livable: Urban vulnerability

- Traffic congestion
- Extreme climate events
- Utilities/infrastructure
- Environmental pollution
- Water shortage
- Social instability







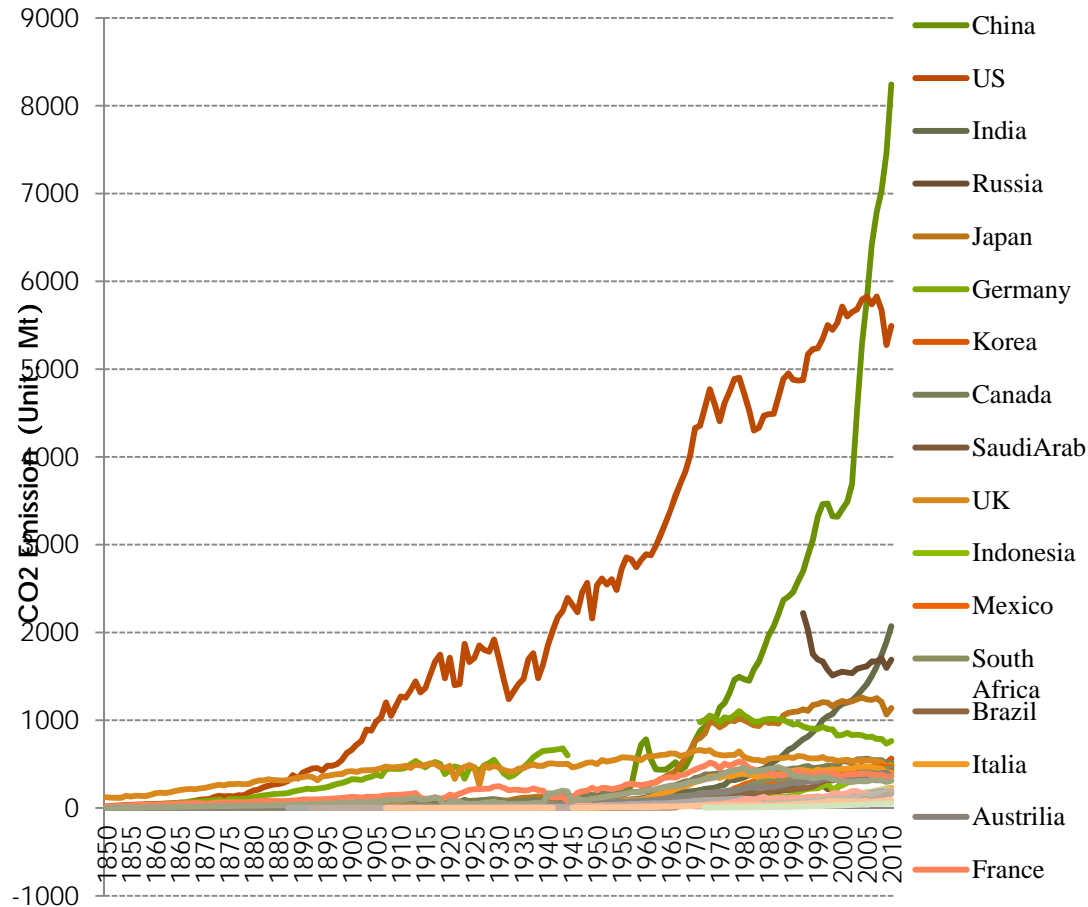
Among 74 cities monitored,, only 3 (4.1%) cities new air quality standards (including PM2.5)

## Livable: air pollution

In 2013, in the most economically dynamic metropolitan regions, non of the cities met the new standards



## Emission trajectories for selected countries (1850-2010)



Data Source:

- 1.CO2 Emission data is from Carbon Dioxide Information Analysis Center(CDIAC) and Oak Ridge National Laboratory 2011, include emission from fossil fuel combustion and Cement process .
- 2.Germany data in 1971-1990 is from International Energy Agency(IEA), CO2 Emissions from Fuel Combustion 2011
- 3.Data of CO2 Emission from fossil fuel combustion from CDIAC and IEA are basically Consistent, Error is in 1%.

## Urban Sustainability challenges

- Climate mitigation and adaptation
- Access to sustainable energy
- Water shortage and ecosystem deterioration

数据来源: <http://www.bp.com/en/global/corporate/about-bp/statistical-review-of-world-energy-2013.html>  
<http://datacatalog.worldbank.org/>

The direction for the future

# Human Development & level of urbanization (2011) : Long way to go

		HDI	Life expect ancy (yrs)	GNI capita (US\$) per	Urban ization level (%)
<b>101</b>	<b>China</b>	<b>0.699</b>	<b>73.7</b>	<b>7945</b>	<b>51.9</b>
HDI level					
<b>Very high</b>		<b>0.905</b>	<b>80.1</b>	<b>33391</b>	<b>81.2</b>
<b>High</b>		0.758	73.4	11501	74.1
<b>Medium</b>		0.640	69.9	5428	43.7
<b>low</b>		0.466	59.1	1633	33.6
<b>world</b>		<b>0.694</b>	<b>70.1</b>	<b>10184</b>	<b>52.6</b>

数据来源: <http://hdr.undp.org/en/reports/global/hdr2013/http://datacatalog.worldbank.org/>



# National Plan for New style Urbanization 2014-2020:

targets set for

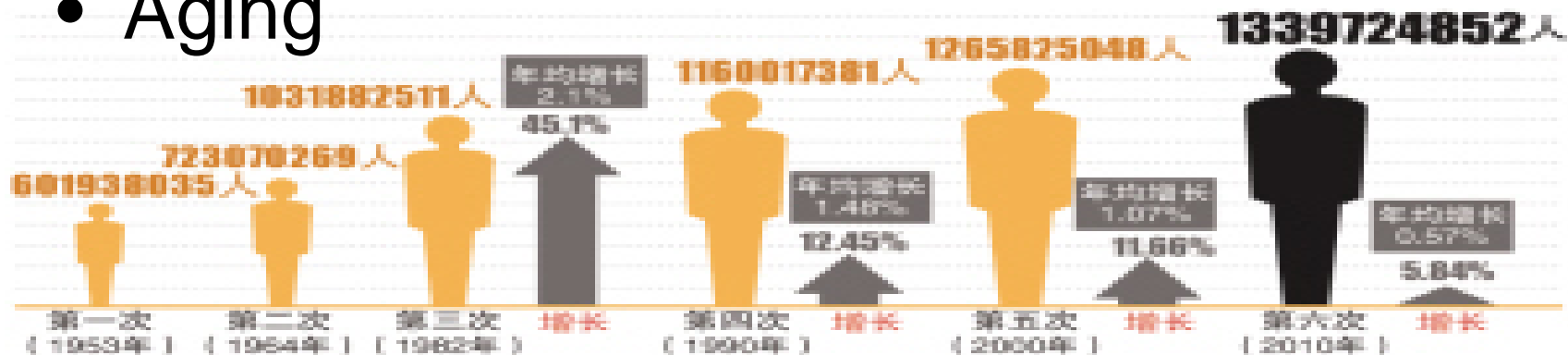
- inclusiveness,
- livability &
- sustainability

Government of China,  
March 16, 2014

	2012	2020
<b>Urbanization level</b>		
Urban residents (%)	52.6	60
Urban household registration (%)	35.3	45
<b>Basic urban services</b>		
9 year free education of rural migrants (%)		>99%
Vocational training (%)		>95
Basic Pension coverage (%)	66.9	>90
Medical insurance coverage(%)	95	98
Subsidized housing over total residents(%)	12.5	>23
<b>Infrastructure</b>		
Share of public transport (%)	45	60
Tap water (%)	81.7	90
Waste water treated (%)	84.8	95
Internet capacity to households(Mbps)	4	>50
Community service coverage(%)	72.5	100
<b>Natural resources and environment</b>		
Per capita urban land use(m2)		<100
Share of renewable energy (%)	8.7	13
Share of green buildings over new ones	2	50
Share of green space in built up area(%)	35.7	38.9
large cities: % meeting air quality	40.9	60

# Population Dynamics

- Total fertility rate: 1.17 (population census 2010)
- Population growth rate: 0.49% (2013)
- Population dividends diminishing and disappearing
- Change of one child policy: 2014
- Aging

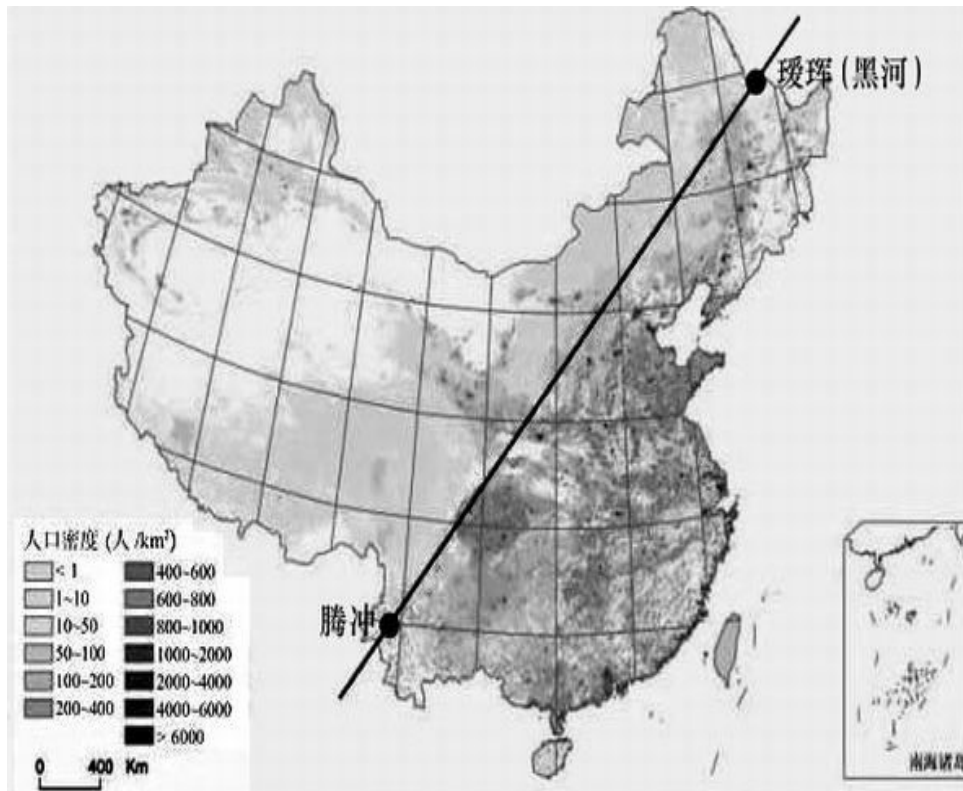


# Economic growth and employment

- Economy: more urban dominated
  - Growth: slow down
  - Structure: higher share of tertiary sector
  - Employment: more in the service sector
- Industrialization: transition to late and post industrialization stage
- Urbanization: from scale expansion to quality upgrading

# Environmental sustainability

- Respect for nature
- Resource saving
- Low and zero carbon



## Livability type

## Livability index

## Land

## population

Area (10,000km<sup>2</sup>)

%

10,000

%

Unlivable

0~20

303.24

31.71

257

0.20

Critically livable

20~40

224.24

23.45

4 244

3.24

Marginally livable

40~60

167.13

17.48

23 330

17.84

Normally livable

60~80

166.13

17.37

63 776

48.78

Highly livable

80~100

95.55

9.99

39 149

29.94

total

956.29

100.00

130 756

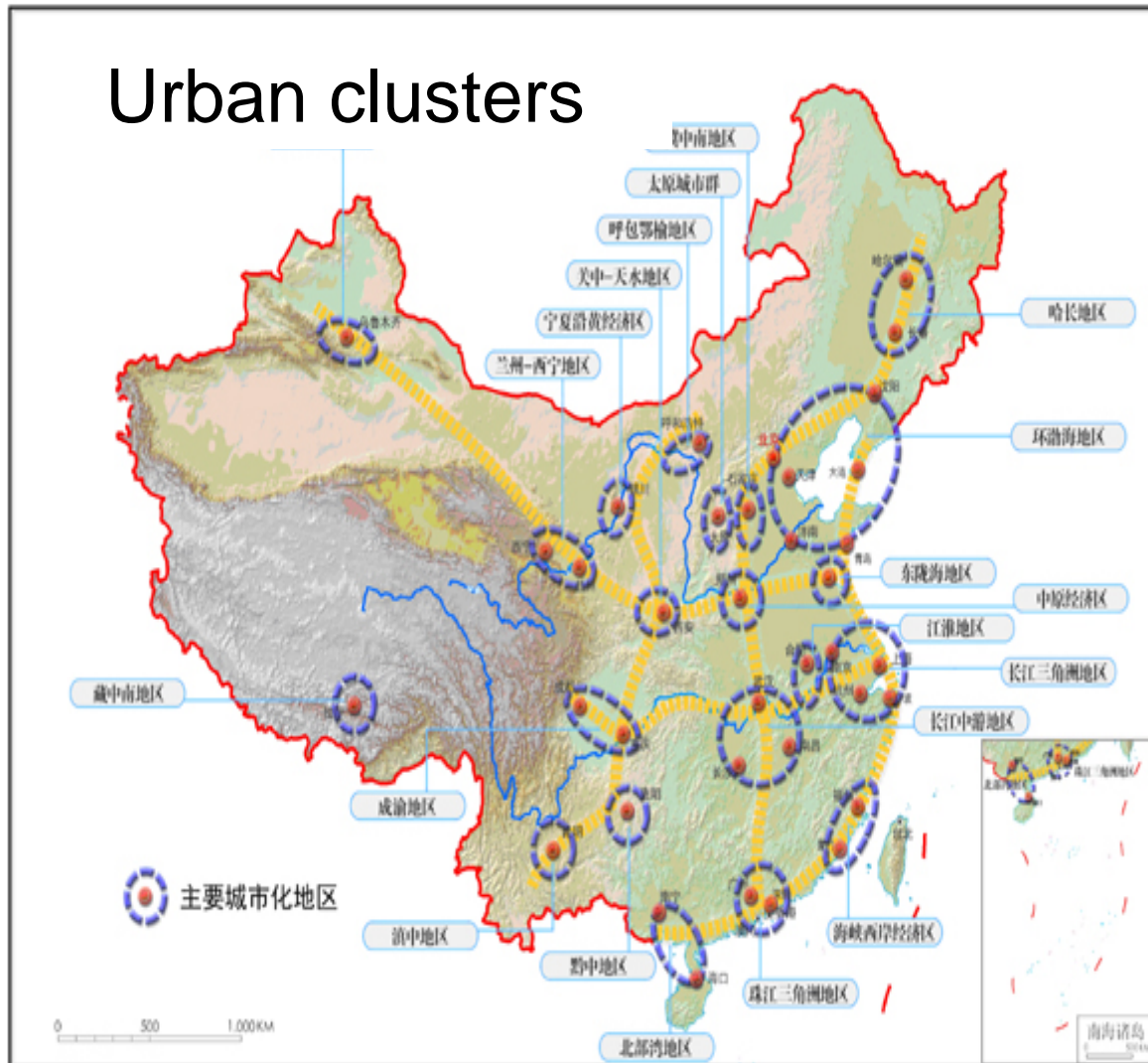
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The Way forward

# Regional & Urban Planning

## Urban clusters



Government of China, 2010, 2014

## Functional zoning

- urban built up area;
- agricultural products;
- key ecological functions
- Identify, specify, and stick to the approved functions for urban development
- Urban system
  - spatial
  - scale
- Carrying capacity: urban development boundaries
- Mixed urban functions

# Inclusiveness: barriers to be removed

## Urban household registration reform



- Small cities and towns (<0.5m): Completely open, no restriction
- Medium sized cities (0.5-1.0m): Orderly open: limited restriction
- Large cities
  - Scale I (1.0-3.0m): Reasonably open
  - Scale II(3.0-5.0m) appropriately determined
- Extra large cities (>5.0m): strictly restricted


## Urban governance structure and capacity

# Inclusive and livable

- Urban social services: basic social services equalized, with no discrimination against rural migrants
- Housing: available and affordable
- Employment: training programs
- Green: green space, environmental quality
- Cultural identity and services: heritage, facilities (library, museum, theatres, gyms, ...)

# Sustainable: Reshaping urban life style

No Country/region per 1000 ownership

1	 摩纳哥	863
2	 美国	828
3	 列支敦士登	796
4	 卢森堡	749
5	 新西兰	733
6	 澳大利亚	730
7	 冰岛	724
7	 卡塔尔	724
8	 文莱	696
9	 意大利	690
5	 马耳他	743
11	 关岛	677
12	 塞浦路斯	659
13	 加拿大	620

## Automobile ownership as an example

Since 1970, the number of automobiles have been doubling every 15 years. Total numbers (2011):

- 1. US, total, 343 million;** in terms of per 1000 people ownership, number 2 in the world;
- 2. China, total 78 million,** per 1000 people ownership, number 115 in the world;
- 3. Japan, total 74 million,** per 1000 people ownership, number 14;
- 4. Germany, total 51million,** 24 in the world;
- 5. EU 27, 320million,**



# Urban-rural integration

- Integration: social services, factors of production
- New countryside
- Modern agriculture

# Transformative Policy Initiatives

- Progressive pricing
  - water
  - electricity
- Carbon market:  
Cap-trade
  - Total quantity: cap
  - Pilot trading
  - National market
- Ecological compensation
  - Transfer payment
  - Bilateral arrangement
  - Market transactions
- liabilities
  - Polluter-pays
  - 3<sup>rd</sup> party treatment

国务院批转发展改革委关于2014年深化经济体制改革  
重点任务意见的通知

# Progressive pricing of natural resources consumption

	ladder	Per Household water consumption (m3)/a	Price (Y/m3)	Among which		
				Water charge	Water resource fee	Waste water treatment
Water company	1	0-180	5	2.07	1.57	1.36
	2	181-260	7	4.07		
	3	>260	9	6.07		
Self supply	1	0-180	5	1.03	2.61	1.36
	2	181-260	7	3.03		
	3	>260	9	5.03		

Beijing Municipal Government, April, 2014.

Transformative Urbanization  
Better life, better future

# Transformative urbanization in China: Better city, better life

- Challenges into opportunities
- Barriers to inclusiveness removed
  - ✓ Household registration
  - ✓ Equal entitlements to social services
  - ✓ Urban rural integration
- Urban livability enhanced
  - ✓ Physical infrastructure: mobility, utility, information accessibility
  - ✓ Housing and social services: available and affordable
  - ✓ Greener living environment, decent jobs
- Good urban governance structure established and capacity improved



# Transformative urbanization in China: Better city, better future

- Paradigm shift: from industrial to ecological civilization
  - ✓ Rural→industrial→Urban-rural integration: more resource saving and higher efficiency
  - ✓ Sustainable urban consumption and production
  - ✓ Sustainable, reliable and affordable energy: renewable energy, passive housing
  - ✓ Ecological redlines and natural resource assets non-declining
- Contribution to world economic development and global sustainability

# THANKS

