



**European-Chinese Centre for Education and Research  
in Regional Development Planning (ECER)**



**Forum “Sustainable Urban and  
Regional Development”**

on the occasion of EXPO Shanghai  
October 18th, 2010

Project coordinators in China and Germany

The Project Identification Phase Sponsored by:



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# ECER is Sustainable Development in Cooperation

In its overall societal interest, China aims at reducing the regional disparities and creating equal living conditions in all regions. By these means, China's economic successes can contribute to a more balanced regional development.

Europe, particularly Germany, has a vast experience of regional and structural policies that can be seen as references for Chinese regional policy experts. Due to its specific conditions, it is not intended to develop a one-size-fits-all strategy for China, but rather to discuss the value of European regional development objectives and instruments for China.

For this purpose, in 2008 the City of Trier and the Beijing Normal University initiated a feasibility study for the project "European-Chinese Centre for Education and Research in Regional Development Planning (ECER)". The venture has been funded by the German Federal Ministry of Education and Research as well as by the Chinese Ministry of Education. Under the general theme "Sustainable Urban and Regional Development", five key topics for the areas of "academic education", "professional training" and "research" have been defined.



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**PARTNER IN THE PROJECT IDENTIFICATION PHASE / FEASIBILITY STUDY:**



**IN THE PROJECT IDENTIFICATION PHASE SPONSORED BY:**



**Bundesministerium für Bildung und Forschung**



**中华人民共和国教育部**  
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**European-Chinese Centre for Education and Research in Regional Development Planning (ECER)**



**INVITATION**  
**Forum "Sustainable Urban and Regional Development"**  
**on the occasion of EXPO Shanghai**  
**October 18<sup>th</sup>, 2010**

Organized by:  
Beijing Normal University, Beijing  
East China Normal University, Shanghai  
City of Trier, Germany

# ECER. Growth with Future.

The establishment of equal living conditions in all regions of China will be enabled through sustainable and thereupon future oriented urban and regional development. Europe has a long experience in sustainable regional development. The ECER network aims at applying this knowledge in the areas of academic education, professional training and policy oriented research.

Since the very beginning, the European-Chinese Centre for Education and Research in Regional Development Planning (ECER) is a unique example of an active faithful cooperation.

Best scientists and management officials from China and Europe are working together on new approaches and methods in sustainable regional development. Through mutual dialogue and joint cooperation in the ECER modules "Academic Education", "Professional Training" and "Research", experts obtain useful insights for their practical work.



# ECER. The Forum in Shanghai.

During a one-day forum to be held at the world exhibition in Shanghai, the contents of the "European-Chinese Centre for Education and Research in Regional Development Planning (ECER)" will be presented.

The objective is to demonstrate the possibilities to transfer sustainable urban and regional planning to China and its regions. For this purpose, experts from Germany and China will present their ideas of sustainable urban and regional development. The forum will present three different approaches to this issue (see programme).

**Notice of a visit must be submitted to the conference office:**  
Conference Office for ECER 2010  
Shanghai Forum  
E-mail: [CECenter@bnu.edu.cn](mailto:CECenter@bnu.edu.cn)  
Phone: 86-10-58802958  
Beijing Normal University (BNU)  
19 Xijiekouwai Street  
100875, P. R. China



## A visionary leading project of sustainable urban and regional development for China: "European-Chinese Centre for Education and Research in Regional Development Planning (ECER)"

**9:00 - 9:05** Welcome speech  
Prof. XU Lizhong, President, East China Normal University

### LEVEL 1

**9:05 - 10:00**  
Requirements, experience and future perspectives of sustainable urban and regional development for China and its regions will be demonstrated from Chinese and German perspectives.

**Lecture:**  
Overcoming Regional Disparities in China and Germany to Establish Equal Living Conditions: Objectives, Starting Points and Perspectives

Prof. Dr. SHI Peijun,  
Executive Vice President, Beijing Normal University  
Prof. Dr. Gumar Schwarting,  
Director of the Congress of Municipalities of Rhineland-Palatinate, Mainz

### LEVEL 2

**10:00 - 10:45**  
"European-Chinese Center for Education and Research in Regional Development Planning (ECER)" can serve as an instrument to reduce regional disparities, in which German/European experience of regional development can be transferred into China and China's own considerations can be further developed.

**Lecture:**  
Substantive Starting Points of ECER – Academic Education, Professional Training and Research as Bases of Sustainable Urban and Regional Development in China  
Prof. h.c. Dr. Johannes Weimand,  
Director of the Office of Urban Development and Statistics, City of Trier

**Break: 10:45 - 11:00**

### LEVEL 3

**11:00 - 11:40**  
Element: „Academic Education“

• **Qualification of the Best Students of the Best Chinese Universities**  
Prof. Dr. JIANG Yuan, School of Resources Science & Technology, Beijing Normal University

• **Implementation of the PhD Programs in the Network "ECER"**  
Prof. Dr. SHI Peijun, Executive Vice President, Beijing Normal University

**11:40 - 12:00**  
Element: „Professional Training“

• **The Professional Training Program of ECER – Transfer of German and European Knowledge**

Mr. Pablo Gándara, ECER Advisor of the city of Trier

**Break: 12:00 - 13:30**

**13:30 - 16:00**  
Element: „Research“

• **Research on Regional Planning and Industry Integration in Yangtze River Delta**  
Prof. Dr. GU Renxu, Vice Dean of School of Resource and Environment, East China Normal University

• **Traffic Development Planning: Central Basis for Sustainable Urban and Regional Development**  
Dr. Christoph Zimmer, Manager, BPV Consult Ltd.

### • **Trans Eurasian Transport Corridors**

Prof. ZHU Xiaoming, Vice Dean, School of Traffic and Transportation, Beijing Jiaotong University

Prof. Dr. Hans-Dietrich Haasis, Institute of Shipping Economics and Logistics, University of Bremen

### • **Eco-city Planning & Management towards Sustainable Development**

Prof. Dr. XU Linyu, School of Environment, Beijing Normal University

### • **Disaster Prevention and Reduction in China**

Dr. FAN Yida, Chief Engineer of National Disaster Reduction Center of China of Ministry of Civil Affairs of the People's Republic of China

### LEVEL 4

**16:00 - 16:30**

**Perspectives of the Implementation of ECER from German and Chinese Points of View**

Prof. Dr. SHI Peijun, Executive Vice President, Beijing Normal University  
Prof. h.c. Dr. Johannes Weimand, Director of the Office of Urban Development and Statistics, City of Trier

### LEVEL 5

**16:30 - 17:00**

**Panel Discussion**

**Forum “Sustainable Urban and Regional Development”  
on the occasion of EXPO Shanghai  
October 18th, 2010**



a Cooperation Project  
between the City of Trier and  
the Beijing Normal University

**Lecture:**

**Overcoming Regional Disparities in China and Germany to Establish  
Equal Living Conditions: Objectives, Starting Points and Perspectives**

Prof. Dr. SHI Peijun, Executive Vice President,  
Beijing Normal University





European-Chinese Centre for Education and Research  
in Regional Development Planning (ECER)



**Peijun Shi**

**Executive Vice President, Beijing Normal University**  
**Vice Dean, ADREM, Ministry of Civil Affairs & Ministry of Education**  
**Director, ESPRE, Beijing Normal University**



北京师范大学  
Beijing Normal University

地表过程与资源生态国家重点实验室  
State Key Laboratory of Earth Surface Processes and Resource Ecology



European-Chinese Centre for Education and Research  
in Regional Development Planning (ECER)



**Contents**

**Characteristics and Driving Mechanism of Chinese Urbanization and Regional Development**  
**Characteristics and Revelation of German Urbanization Development**  
**Perspectives to Reduce Disparities OF Chinese Urbanization and Regional Development**



北京师范大学  
Beijing Normal University

地表过程与资源生态国家重点实验室  
State Key Laboratory of Earth Surface Processes and Resource Ecology



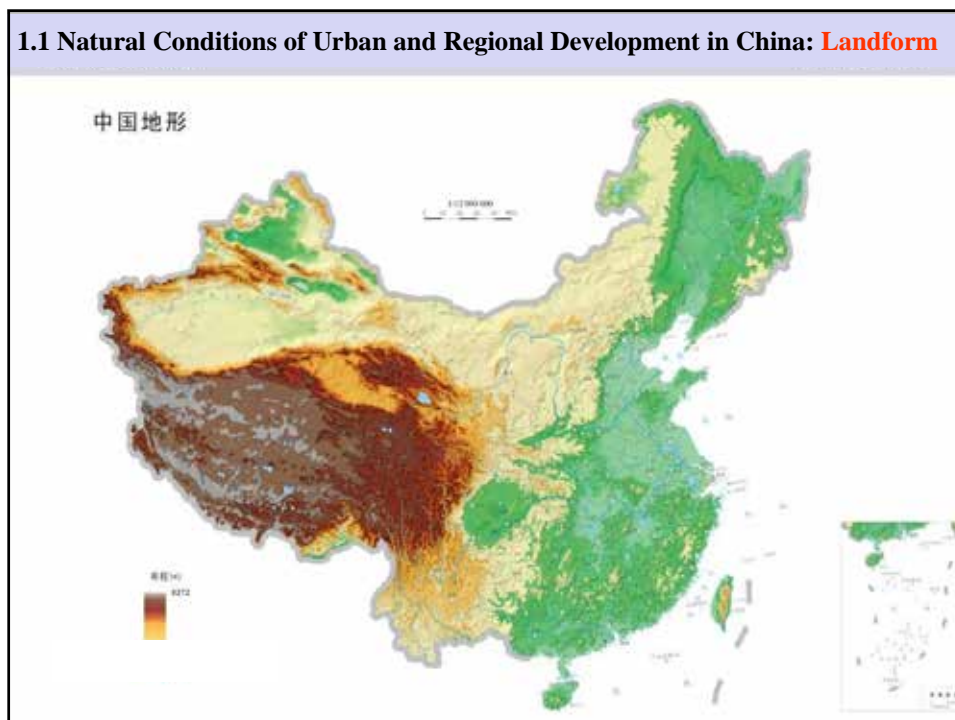
European-Chinese Centre for Education and Research  
in Regional Development Planning (ECER)

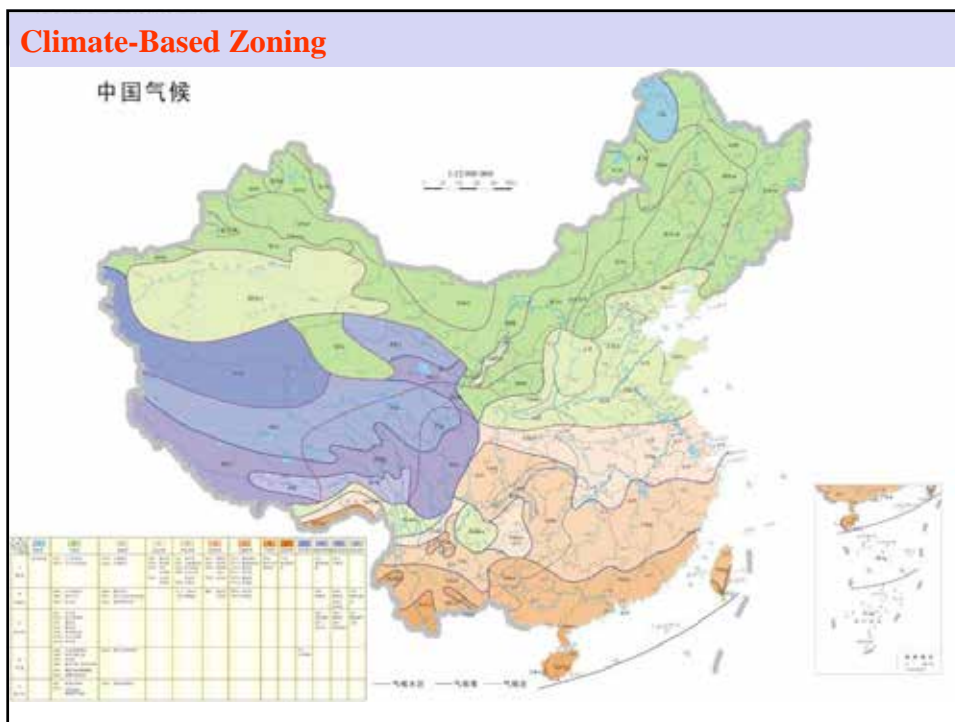
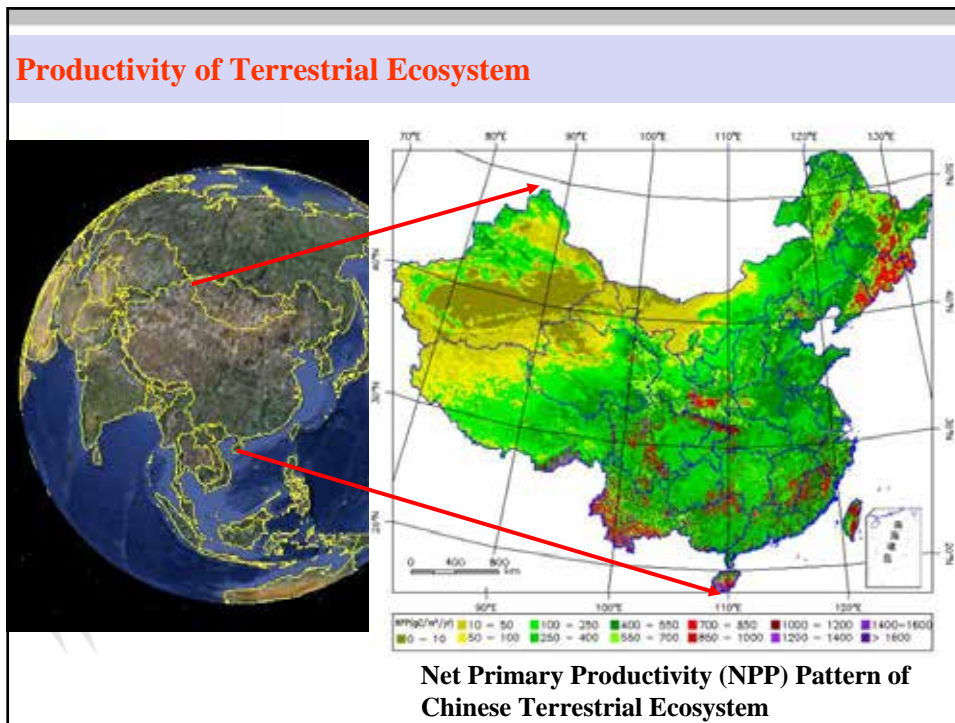


## 1 Characteristics and Driving Mechanism

**Natural Conditions of Urban and Regional Development of China**  
**Overall Characteristics of Chinese Urbanization**  
**Disparities of Social Economy Development in East, Middle and West Areas of China**  
**South –North Disparities of Development of Urban and Social Economy in China**  
**Urban-Rural Disparities of Social Economy Development in China**  
**Driving Mechanism of Urbanization for Economic Growth in China**

   
北京师范大学  
Beijing Normal University  
  
地表过程与资源生态国家重点实验室  
State Key Laboratory of Earth Surface Processes and Resource Ecology





## 1.2 Overall Characteristics of Chinese Urbanization

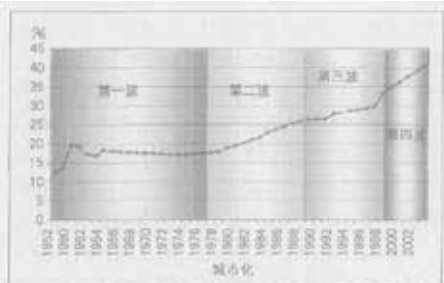


图1 建国以来我国城市化历程曲线 (1952-2002)  
Fig.1 Four waves of urbanization in China (1952-2002)  
资料来源: 中国统计年鉴, 历年。

**China is entering in the fourth round of accelerative urbanization (Ye Jia'an, 2006)**

表 1-1 世界城市人口增长状况

年代	1900	1920	1950	1965	1970	1980	1990	2000	2010
城市人口/亿	1.6	2.5	7.34	10.32	23.71	17.84	22.6	28.54	36.23
占总人口/%	19	13.6	29.2	34.2	37.1	30.6	42.7	46.6	51.4

表 1-2 我国城市人口增长状况

年代	1952	1970	1980	1984	1987	1990	1993	1995	2000	2010
城市人口/亿	0.39	0.93	1.34	1.91	2.62	2.97	3.21	3.48	3.87	6.71
占总人口/%	6.3	11.2	13.6	18.6	24.3	26.2	28.6	28.8	29.03	32.14

注: 城市按统计年鉴。

**From 1999 to 2025, the urbanization in China will rise from 30.9% to 55%; the urban population will increase from 389 millions to 830 millions (Wu Liangyong, 2003)**

**Characteristics of Chinese Urbanization: large, fast and robust. In the coming 20 years, a population equal to total population of Japan and US will migrate to cities.**

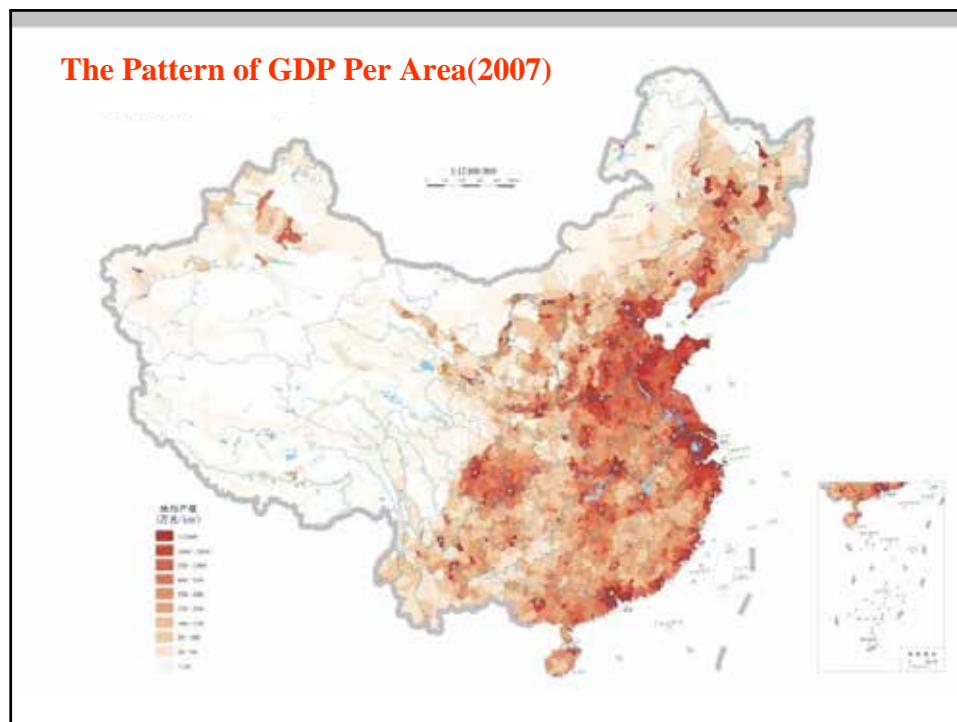
### Pattern of Urban Lighting Indicator (2007)

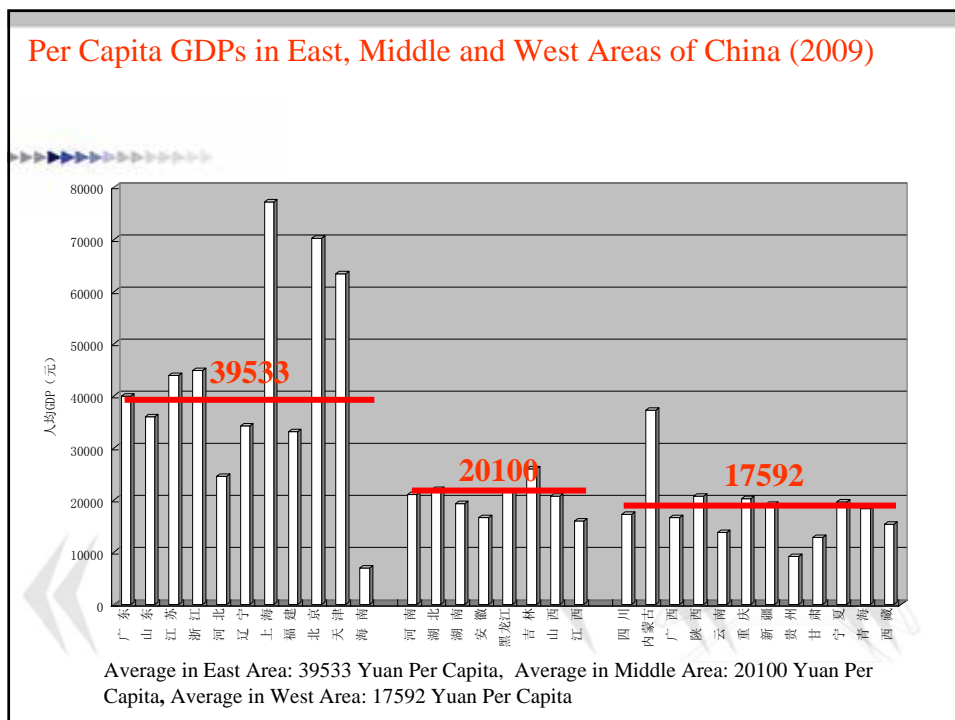
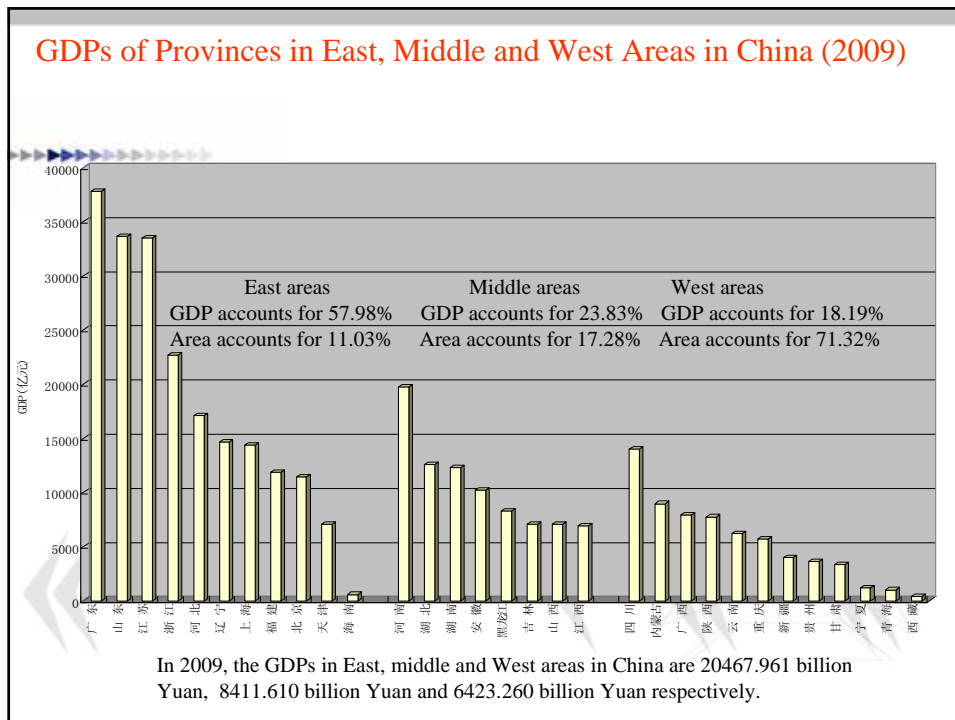
中国城市 (2009年)

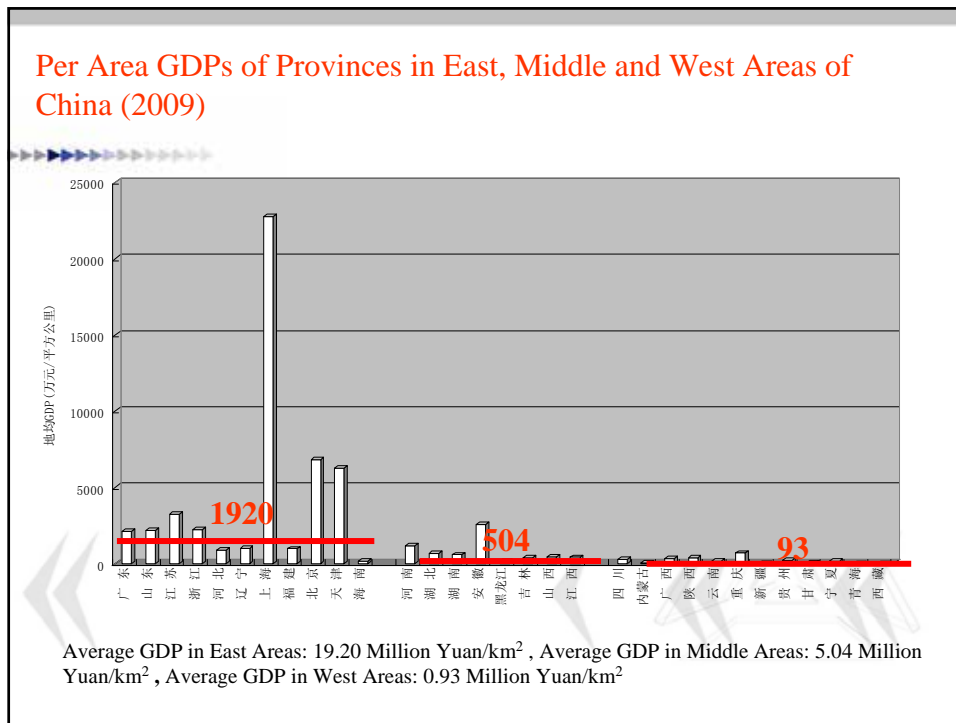


The higher urban lighting indicator is, the higher urbanization level



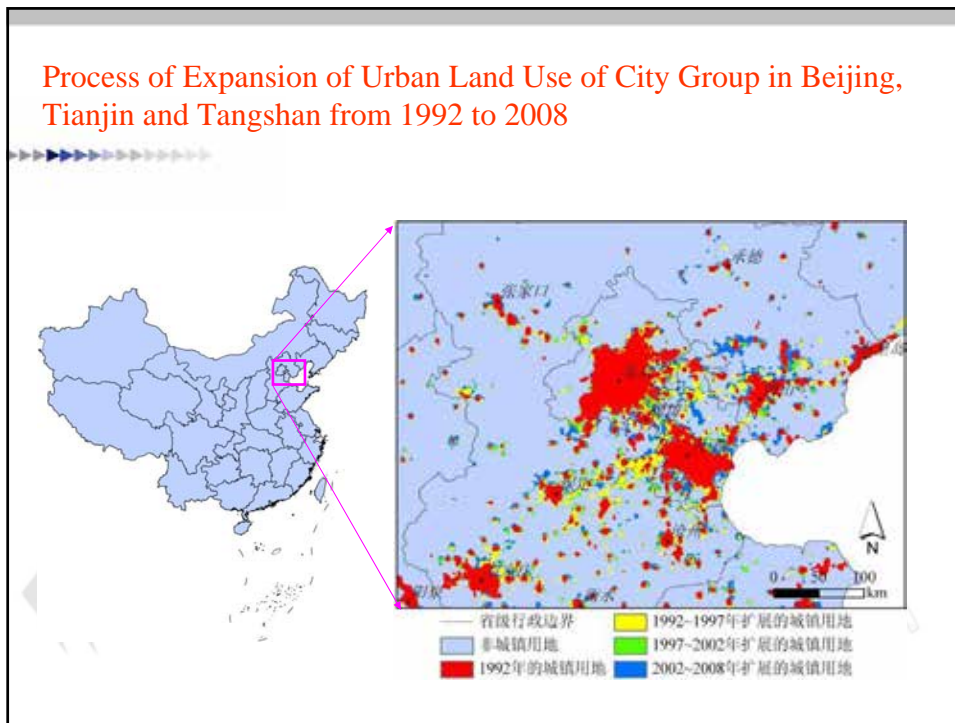




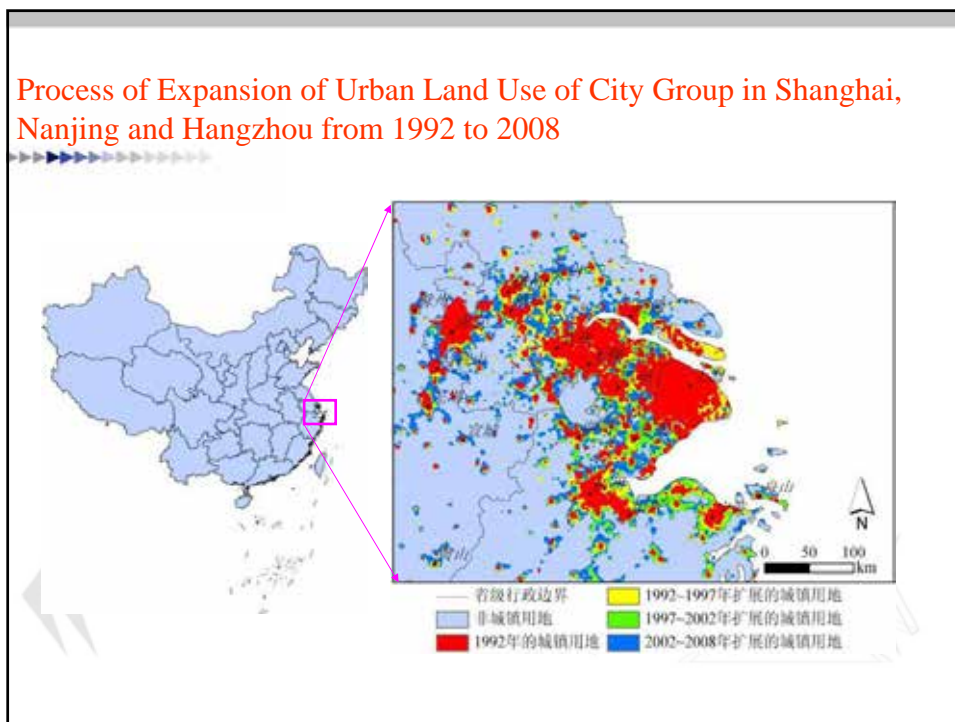


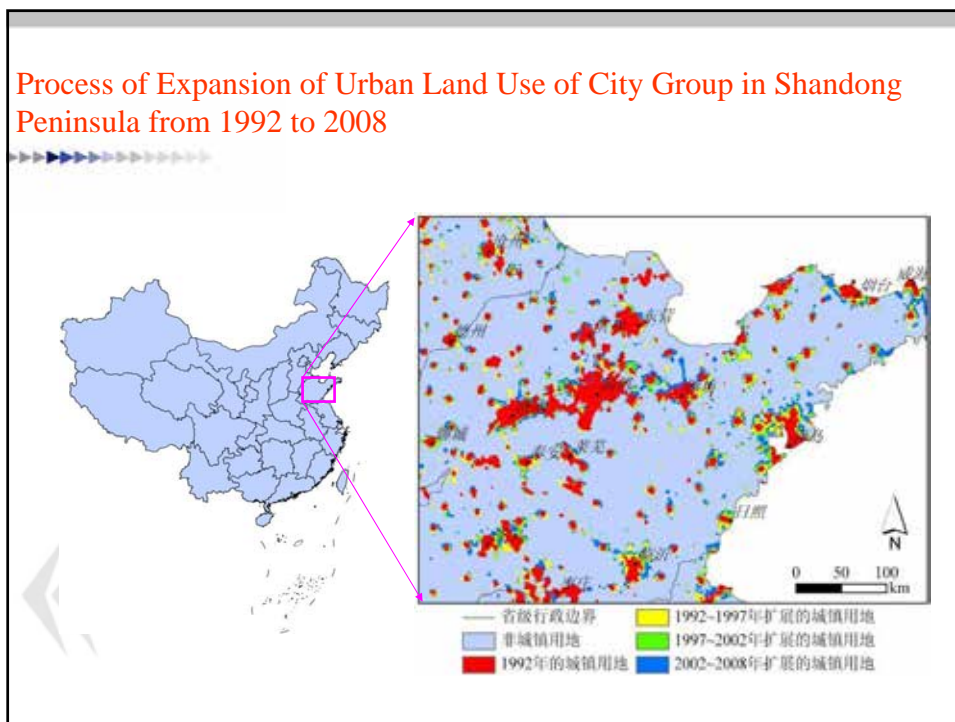
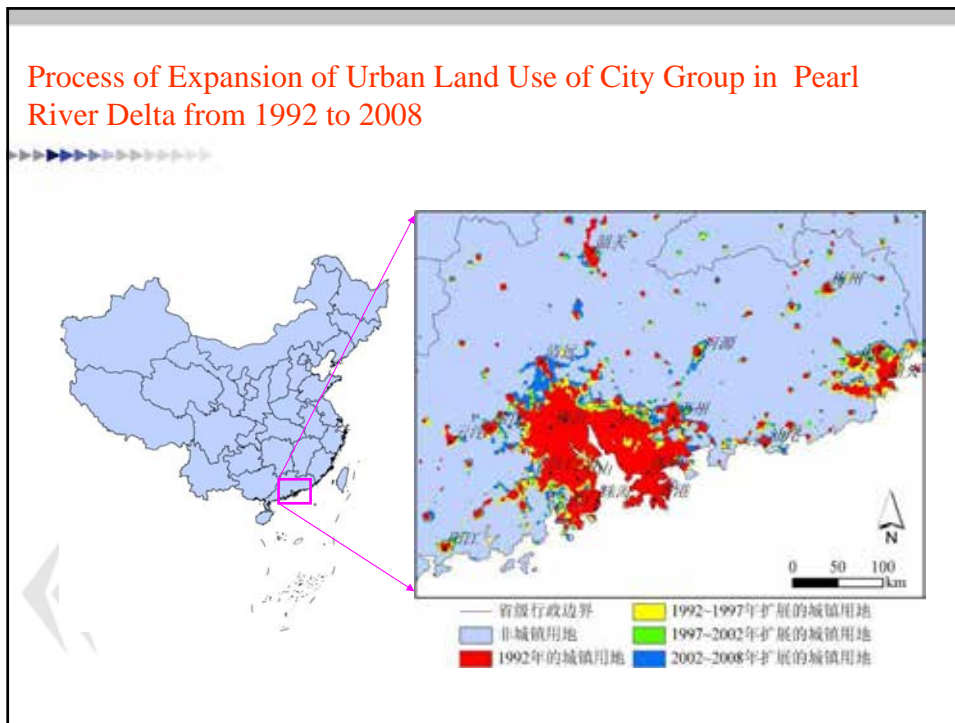


Process of Expansion of Urban Land Use of City Group in Beijing,  
Tianjin and Tangshan from 1992 to 2008

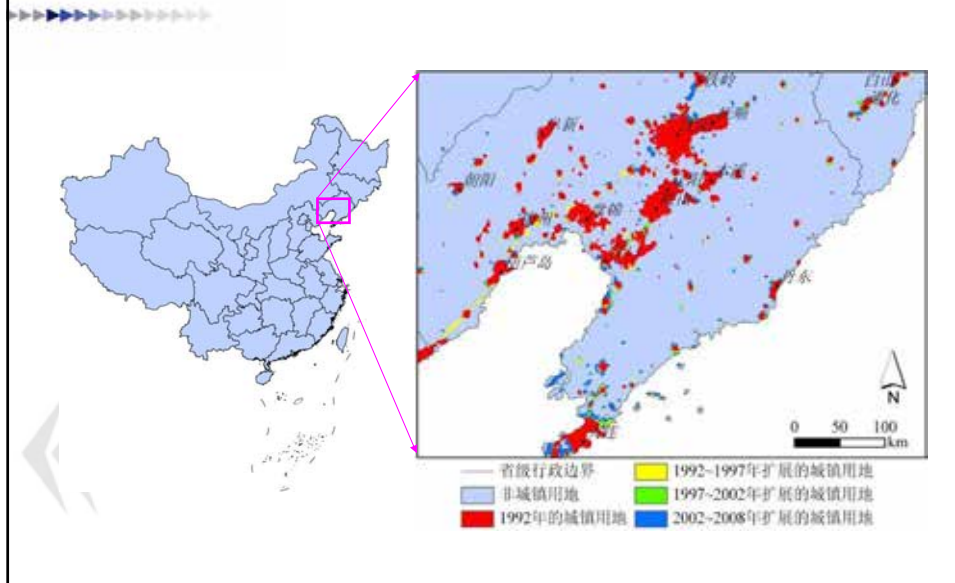


Process of Expansion of Urban Land Use of City Group in Shanghai,  
Nanjing and Hangzhou from 1992 to 2008

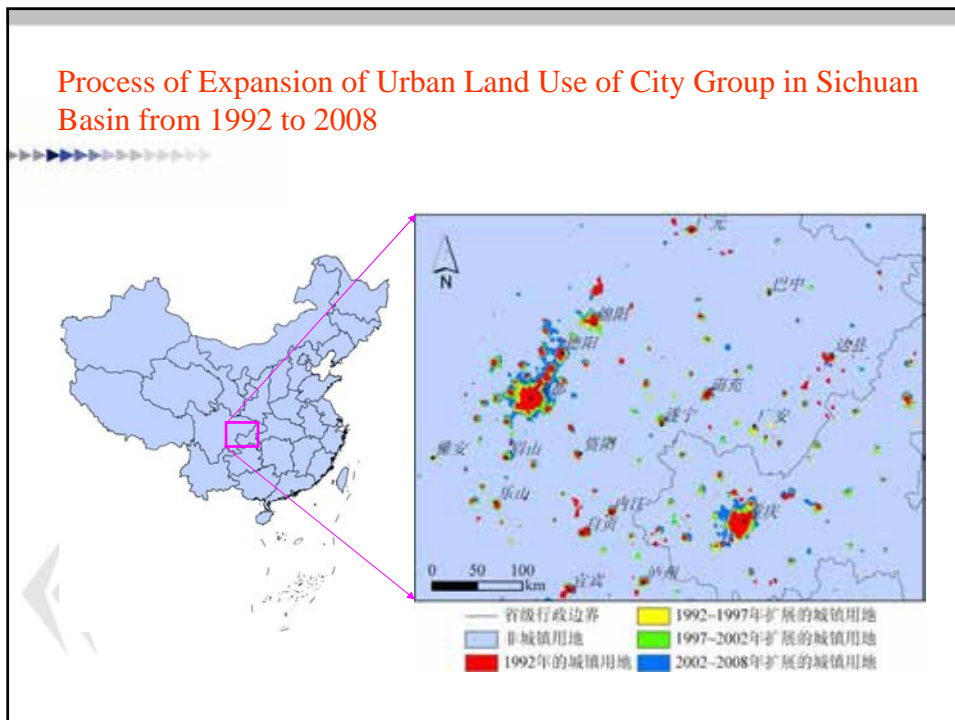




Process of Expansion of Urban Land Use of City Group in Middle and South Areas in Liaoning Province from 1992 to 2008



Process of Expansion of Urban Land Use of City Group in Sichuan Basin from 1992 to 2008



## 1.5 Urban-Rural Disparities of Social Economy Development in China

### ● Disparities of Incomes and Wealth

- ❖ per capita income disparity is large  
Per capita income of urban resident is 3.33 times to that of the peasant (2008)
- ❖ disparity of income growth rate  
Per capita income growth rate of peasants is far less than that in urban areas
- ❖ The disparity in wealth is large  
Per capita deposit of urban resident is 5.9 times to that of the peasant (2006)

### ● Disparities of living level

- ❖ Per capita consumption level of urban resident is 3.53 times to that of the peasant

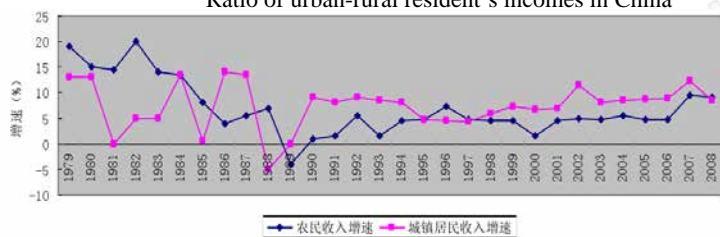
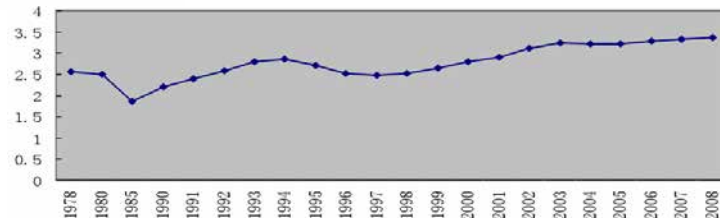
### ● Disparity of Education Level

- ❖ Disparity of education opportunity
  - The admission rate of higher schools for rural students is 6% lower than that for urban students
  - Most students from rural areas learn in universities of lower level and there are only 27.3% of total students from rural areas in key universities.
- ❖ Disparity of education level between urban-rural residents
  - in urban areas, the proportions of populations with diploma of high school, technical secondary school, junior college, undergraduate course and graduate course are 3.5, 16, 55, 281 and 323 times of those in rural areas respectively

### ● Disparity of Social Welfare

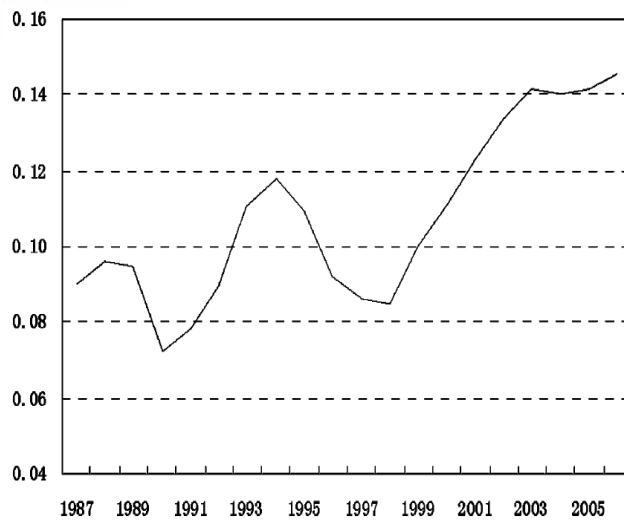
- ❖ Social welfares enjoyed by urban residents include:
  - Various subsidies, like housing subsidies, price subsidies and others
  - Social securities like medical insurance, unemployment insurance and guaranteed minimum incomes

● Urban-Rural Disparity of Residents' Incomes in China (1978-2008)



Comparison between average income growth rates of peasant and urban resident

● Theil Index ( TL) (1986-2006) It shows that the urban-rural disparity between the rich and the poor in China is being largened



Cited from Cao et al., 2010

● Disparities of Public Service Facilities

Comparison of public service facilities between urban area and non-urban area (2005)

Public facilities item	Non-Urban Area	Urban Area	Ratio of Non-Urban Area to Urban Area
Quantity of theater per 100 thousand people	0.40	0.66	0.61
Quantity of hospital per 100 thousand people	6.20	7.10	0.87
Quantity of sickbed in hospital per 100 thousand people	171.00	474.00	0.36
Quantity of post office per 100 thousand people	5.30	5.70	0.93
Quantity of book collected in public library per capita	18.00	61.00	0.30
Population density (people/km <sup>2</sup> )	317.00	1026.00	0.31

Source: Chinese Urban Statistics Yearbook, Beijing, Chinese Statistics Press

● Case: Shenzhen Special Economy Region



● Case: Towns and villages in suburbs of Shenzhen



Binary structure evidently exists in Shenzhen's numerous infrastructures

● Great Disparity in Education Investment

❖ Disparity in education budget

- ⊖ Per capital education budget in urban areas is 1.93 times as much as that in rural areas
- ⊖ Per capital public budget in urban areas is 3.24 times as much as that in rural areas
- ⊖ Dangerous classrooms mostly in village, accounting for 81.97%

❖ Disparity in teaching quality

- ⊖ China has lower requirements for teachers' educational background, and if China increases the threshold of educational background by one level, 70%-80% of teachers in rural areas will be unqualified.

❖ Rural areas are trapped into a vicious cycle in the downgrading teaching quality

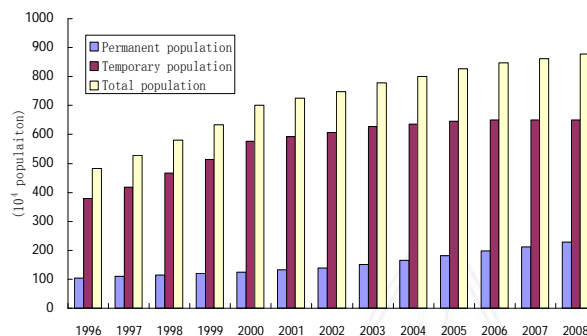
- ⊖ Few village students receiving higher education will come back, and they often become urban residents.
- ⊖ Researches show that parents' education level greatly influences their children's ultimate education
- ⊖ With the increasingly great gap between urban and rural areas in teaching quality, it is very hard for rural population and its productive force to directly benefit from education.

● **Binary Structure in Household Registration**

- ❖ Free migration of farmers is restricted
- ❖ In rural areas , children's education rights are restricted to the local area, making it hard for these children enjoy good urban education resources
- ❖ Farmers lack social assurances:
  - ⊖ Endowment insurance
  - ⊖ Medical insurance
  - ⊖ Minimal living guarantee
- ❖ Farmers working in cities have made contributions to urban development, but they cannot enjoy the welfare brought by the development.

**Binary structure in household registration:** Its cornerstone is to ground population into urban and rural residents, for whom different social welfare policies are exercised. Switch between urban and rural registration is strictly restricted.

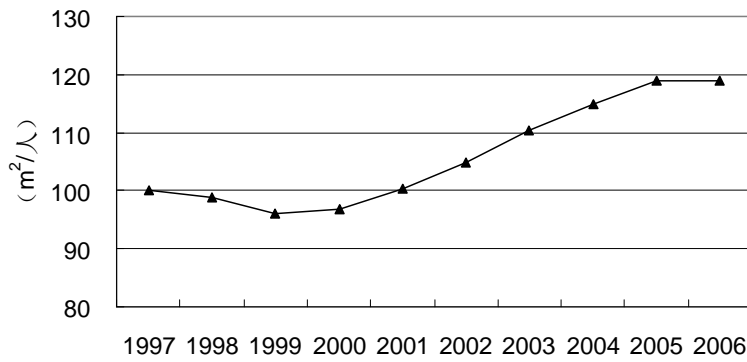
● **Case: Change of population structure in Shenzhen's urbanization**





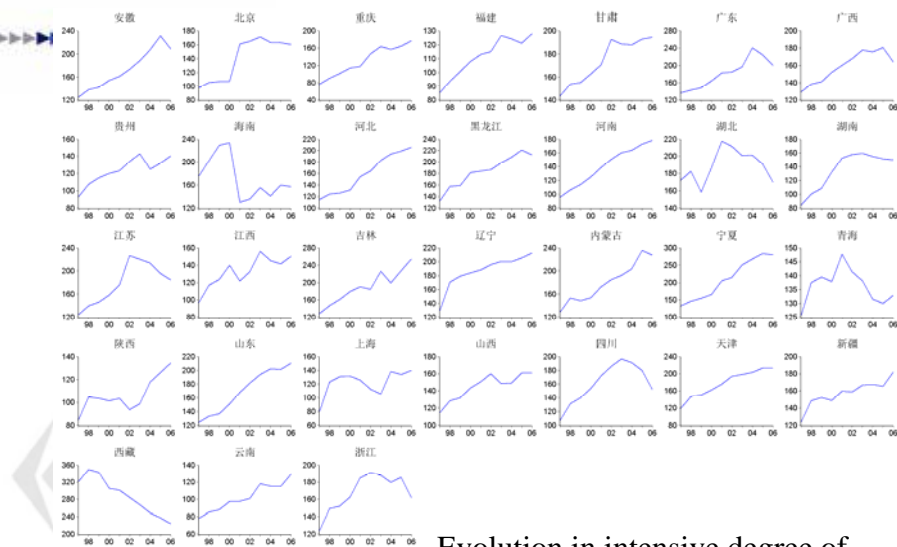
### 1.6 Driving Mechanism of Urbanization for Chinese Economic Growth

- Evolution in intensive degree of urbanization: An index of built-up area in cities is used for the evaluation



Evolution in intensive degree of urbanization

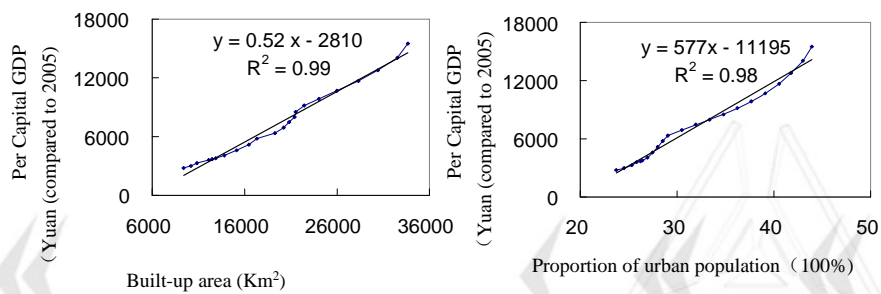
### An index of built-up area in cities is used for the evaluation



Evolution in intensive degree of urbanization in provincial regions

● **Landscape-oriented urbanization and population-oriented urbanization are important driving powers for Chinese economic growth**

▶▶▶ National economic growth is significantly related with landscape-oriented urbanization (expansion of built-up areas) and population-oriented urbanization (increase in the proportion of urban residents)



**Contribution rate of landscape-oriented urbanization and population-oriented urbanization to Chinese economic growth**

$$Y_t = \tilde{A}_t L_t^\alpha K_t^\beta D_{ut}^\gamma D_{at}^\lambda$$

In which,

the low mark “t” means year.

$Y_t$  means economic total at t year. The index is GDP, calculated as prices in 1952 (in 10,000 Yuan)

$\tilde{A}_t$  means total factor productivity at t year after the land factor is included.

$L_t$  means labor stock at t year. The index is employed population (in 10,000 Persons)

$K_t$  means capital stock at t year, calculated as prices in 1952 (in 10,000 Yuan) in accordance with methods by Zhang (2008).

$D_{ut}$  means urban land stock at t year. The acreage of established districts is the index (km<sup>2</sup>)

$D_{at}$  means agricultural land stock at t year. It is the acreage sum of farming land, forest land, garden land and grass land (km<sup>2</sup>).

$\alpha$  means output elasticity of labor;  $\beta$  means output elasticity of capital;  $\gamma$  means output elasticity of urban land use;  $\lambda$  means output elasticity of agricultural land.

### Contribution rate of landscape-oriented urbanization and population-oriented urbanization to Chinese economic growth

Formula for average growth speed of each explanatory variable during the research period is as follows:

Average growth speed

$$= \left( \sqrt[n]{\frac{\text{Research period level}}{\text{Base period level}}} - 1 \right) \times 100\%$$

Set average growth speed of  $Y, L, K, D_u$  and  $D_a$  respectively as  $y, l, k, D_u$  and  $D_a$ .

During the research period, contribution rate of each explanatory variable to  $Y$  is:

For labor stock  $L$ :  $EL = a/y \times 100\%$

For capital stock  $K$ :  $EK = \beta k/y \times 100\%$

For urban land  $D_u$ :  $ED_u = \gamma du/y \times 100\%$

For agricultural land  $D_a$ :  $ED_a = \lambda da/y \times 100\%$

For technological advancement:  $EA = 1 - EL - EK - ED_u - ED_a$

### Contribution rate of landscape-oriented urbanization and population-oriented urbanization to Chinese economic growth

- Contribution rates

- Contribution rate of labor stock to GDP growth: 29%
- Contribution rate of capital stock: 34%
- Contribution rate of urban land use: 31%
- Contribution rate of agricultural land use: 1%
- Contribution rate of technological advancement : 5%

Since contribution rate of agricultural land use is very low, the evaluation result is as follows after excluding this factor

- Contribution rate of labor stock to GDP growth : 27%
- Contribution rate of capital stock : 32%
- Contribution rate of urban land use : 29%
- Contribution rate of technological advancement: 12%

- Contribution of landscape-oriented urbanization to economic growth is about 22000 Yuan per year in terms of per capital GDP value value (calculated as prices in 2005)
- For central and western regions, growth in per capital GDP will continue to be an important driving power for urbanization process

**Contribution rate of landscape-oriented urbanization and population-oriented urbanization to Chinese economic growth**

GDP for Chinese major cities in 2005 (Note: digital data with gray background means per capital GDP over 22000 Yuan per year)

城市	人均 GDP (元, 2005 年可比价)								
	1990	1999	2000	2001	2002	2003	2004	2005	2006
广州	15341	46179	47865	52888	59250	68091	77443	77638	88284
杭州	13384	42236	45684	37592	41102	45574	51435	57187	64267
上海	14552	37575	41479	45173	49994	55791	63240	70213	78157
北京	17472	28162	37874	41850	44335	48577	54752	60919	67767
青岛	8772	27827	31358	34363	38087	41322	44957	55471	63386
南京	9740	27982	31102	30477	28749	33172	36388	43536	47397
济南	8350	27831	29255	29633	33077	35265	37692	40760	45351
石家庄	8695	26512	29176	27422	28724	31144	32337	32488	34152
长沙	8143	24294	25633	28375	31081	31580	34937	43822	47975
长春	5745	20123	25285	28851	32420	36740	38982	35590	35924
天津	9143	22768	23916	25785	28576	32547	37434	44217	50251
鞍山	10596	20490	22795	26136	29704	33884	45467	45882	49360
淄博	7549	19702	22768	24995	27861	34138	38404	41954	46200
成都	7305	20310	21584	24401	24549	26960	29095	31482	37479
南昌	5217	19140	21220	23003	24852	26692	28679	32143	35817
乌鲁木齐	12632	20763	20604	23018	24715	26095	28697	29887	31714
唐山	7277	20251	20465	22368	21480	24442	28328	35941	39945
沈阳	8079	18173	19544	22152	25528	29993	35471	36648	44968
郑州	6808	16985	18846	20224	22308	25564	27994	29323	32871
太原	8781	16422	17623	19186	20646	22674	25558	29587	32337
贵阳	6064	12531	14148	15930	17587	18856	20435	20113	21483
抚顺	7834	11455	12359	13585	15182	17175	20480	22686	25778
Number of cities exceeding value	0	10	13	18	18	20	20	21	21

**Contribution rate of landscape-oriented urbanization and population-oriented urbanization to Chinese economic growth**

- After per capital GDP reaches 22000 Yuan, contribution rate of landscape-oriented urbanization (characterized by urban expansion) to economic growth decreases. In 2006, 7 out of the 31 provinces, autonomous regions and cities directly under central government (Shanghai, Beijing, Tianjin, Zhejiang, Guangdong, Jiangsu, Shandong) as well 90 out of the 155 prefecture-level cities have reached this valve value.
- Therefore, these provinces and cities can realize effective control over expansion of urban land without significant impact on economic growth. Thus, efficiency in urban land use can be enhanced and it is necessary to promote eco-environment construction.

## 2 Characteristics and revelation of Germany's urbanization

Germany's urbanization process

Characteristics of Germany's urbanization

Experience and revelation of Germany's urbanization

### 2.1 Germany's Urbanization Process

- **Preparation stage (1815-1840).** There were more population in rural areas than that in urban areas. Residual rural workforce, especially in eastern agricultural regions, gradually began to migrate to urban areas. As a result, urban economy began to see a rapid development.
- **Rapid development (1840-1872).** Some cities in western Germany had witnessed a rapid development and population increase in some cities in eastern Germany overran that in rural areas.
- **Great prosperity and development of urbanization (1871-1914).** Urbanization level increased from 36.1% in 1871 to 60% in 1910.
- **Fluctuation (1914-1949).** Influenced by two world wars and economic crisis, Germany's economy entered an circle of "recession-recovery-recession-recovery", resulting in a slow economic growth.
- **From 1949 to 1990.** Germany realized unification and its domestic economy was on the wheels of rapid development, greatly enhancing its urbanization level.
- **As from 1990.** Its urbanization has entered into a stable development stage, with its urbanization rate exceeding 90%.

## 2.2 Characteristics of Germany's Urbanization

- Rapid development and high urbanization level.** Compared with Britain, France and USA, Germany started its industrial revolution at an later time. But it took for Germany to realize urbanization nearly the same time with Britain, but less time than France and USA. By 1996, urbanization level of Germany had reached 87% and its non-farming population accounted for 96%.
- Germany's medium-sized and small cities are in large number and with reasonable spatial pattern, while its over-crowded large cities are in small number.** Medium-sized and small cities and towns are spread around the country, with reasonable layout and coordinated development between these cities. Berlin, the biggest city in Germany, only has a population of 3.4 million; Hamburg and Munich, its second and third largest city, respectively has a population of 1.3 million and 1.2 million. In comparison, Paris and London respectively has a population of 12 million and 14 million.

Ten most populous cities in the world (10,000 persons)

Countries	Cities	2010	2050
Japan	Tokyo	3670	3710
India	New Delhi	2220	2860
Brazil	St. Paul	2030	2370
India	Bombay	2000	2580
Mexico	Mexico City	1950	2070
USA	New York	1940	2060
China	Shanghai	1660	2000
India	Calcutta	1560	2010
Bengal	Dacca	1460	2090
Pakistan	Karachi	1310	1810

- Germany's cities lay stress on orientation and characteristic features. Berlin:** centre of culture and industry; **Hamburg:** harbor city and trade center; **Munich:** exposition capital and beer city; **Cologne:** media and chemical industrial centre, perfume capital; **Stuttgart:** auto city; **Frankfurt:** financial center; **Dusseldorf:** model capital; **Dortmund:** steel and coal base; Leipzig: historic city.
- Town and village construction lays stress on planning, and there is almost no disparity between its urban and rural areas.** Firstly, the government has placed great emphasis on renovation and construction of its towns and villages, forming a relatively balanced system in the structure of its towns and villages. Secondly, priority is given to construction of infrastructures and social service facilities. Thirdly, pay attention to coordination between individual design and overall landscape. Fourthly, emphasize environmental construction and ancient architecture protection.



### 2.3 Experience and Revelation from Germany's Urbanization

- **Emphasize characteristic and coordinated development between large, medium-sized and small cities.** Based on its central cities, Germany gives a full play to radiation and congregation effect of these cities while considering characteristic and coordinated development between large, medium-sized and small cities. It advocates a harmony between city and nature.
- **Emphasize essence of the urbanization development—modernization.** It has realized modernization of its social production mode, living way as well as values and ideas, rather than simple migration of population to urban areas.
- **Emphasize scientific planning and promote participation by all its people.** Its urban planning and construction have well balanced social efficiency and equity, laying a foundation for sustainable development of its cities.

### 3 Perspectives to Reduce Disparities OF Chinese Urbanization and Regional Development

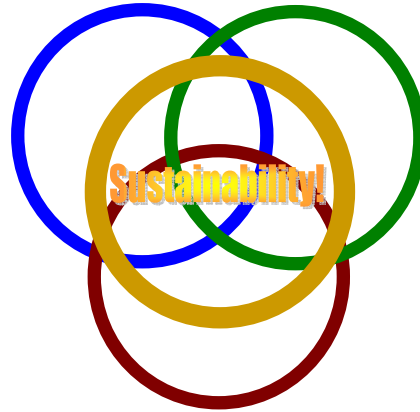
**Sustainability is System Thinking  
Strategies**

**A Chinese Way for Dealing with Disaster Risk Reduction**

### 3.1 Sustainability is System Thinking

Profit

Planet



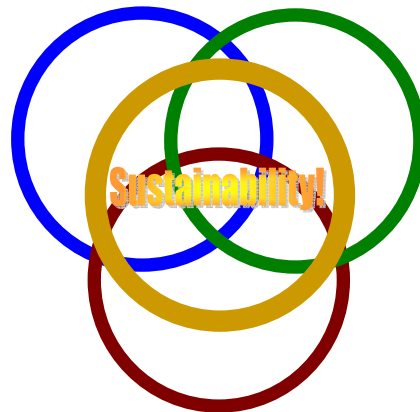
People

**How do we run the nation and community systems to provide a better place to work and live?**

**Sustainability is that approach...**

Profit

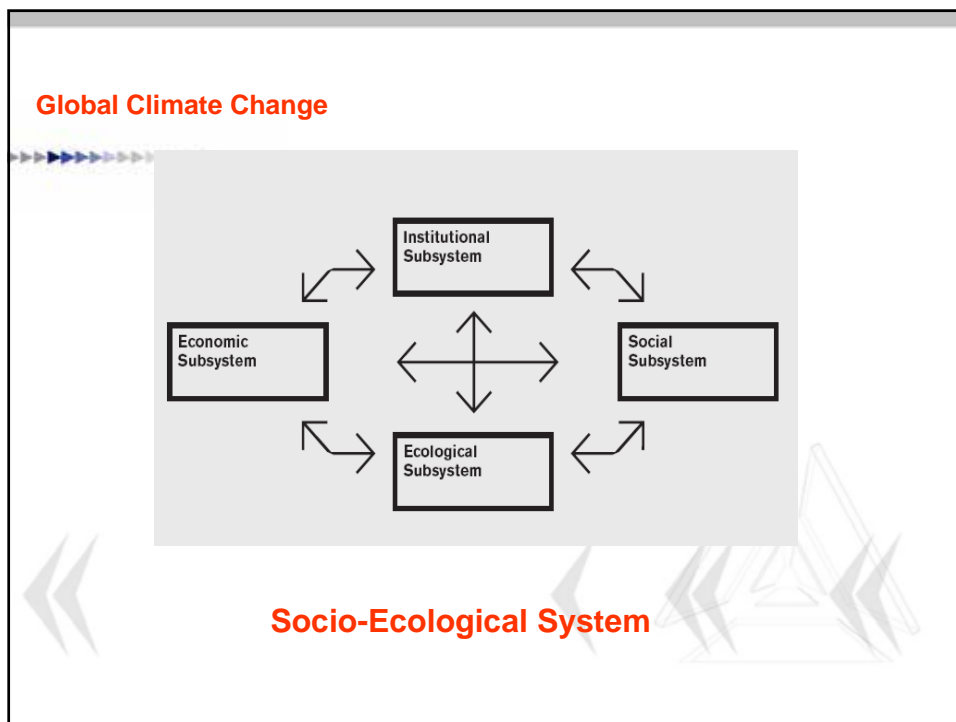
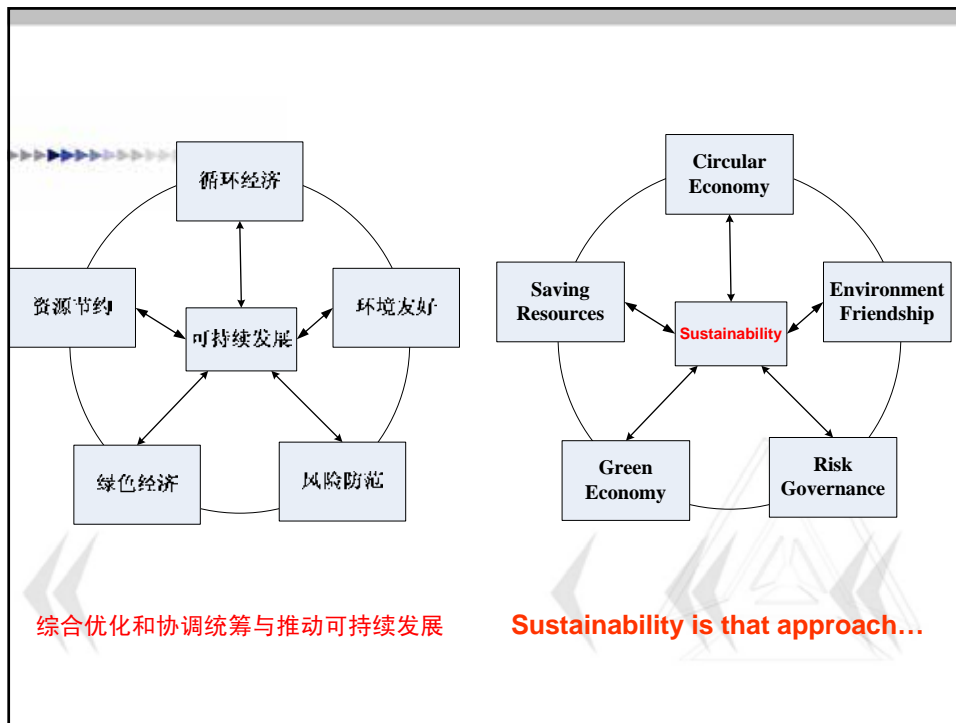
Planet



People

**Optimize this triple-bottom-line**





Never doubt that a small group  
of thoughtful, committed citizens  
can change the world. Indeed, it is  
the only thing that ever has.

**Margaret Mead**

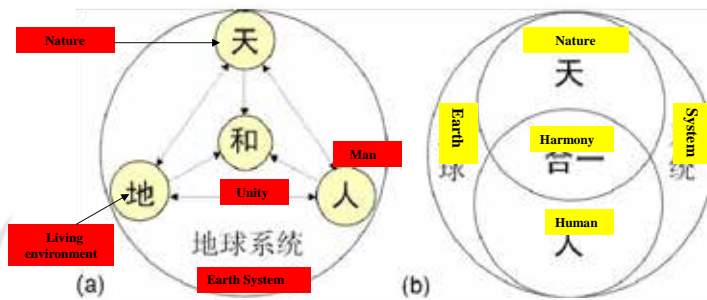
## The Question

Do we want to leave the world a better place for them?

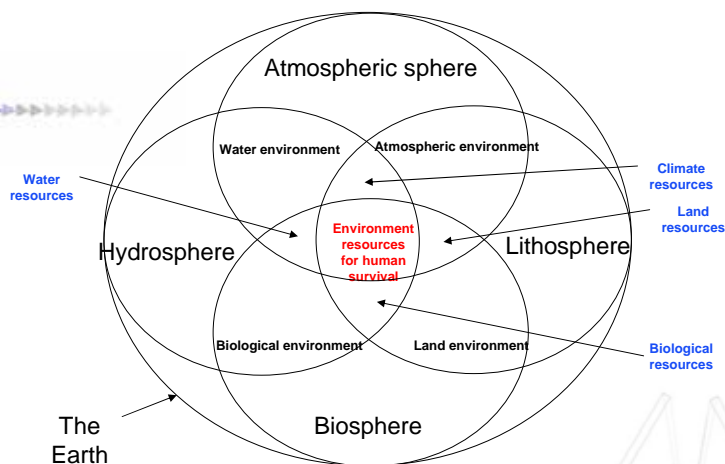


### 3.2 strategies

#### S1 Emphasize harmony between human-nature systems to realize sustainable development



Nature-Living environment-Human Unity (a) Harmony between Nature and Human (b)



The objectives of urbanization as well as social and economic development are to enhance people's happiness. While creating rich material and social civilization by employing various resources (see the above graph), we shall preserve ecological civilization to realize sustainable development.

**S2 Enlarge radiation and congregation effects of city groups, and promote coordinated and characteristic development between regions**

**Geographic Pattern of Chinese Urban and Economic Circles**

- Inter-lake three circles
- Leading circle: Current development meets coordination. Beijing-Whan circle during
- Geographic economic belt

**S3 Intensify planning efforts for regional development, promote structural adjustment and transformation of Chinese economy, and realize leap-forward development**

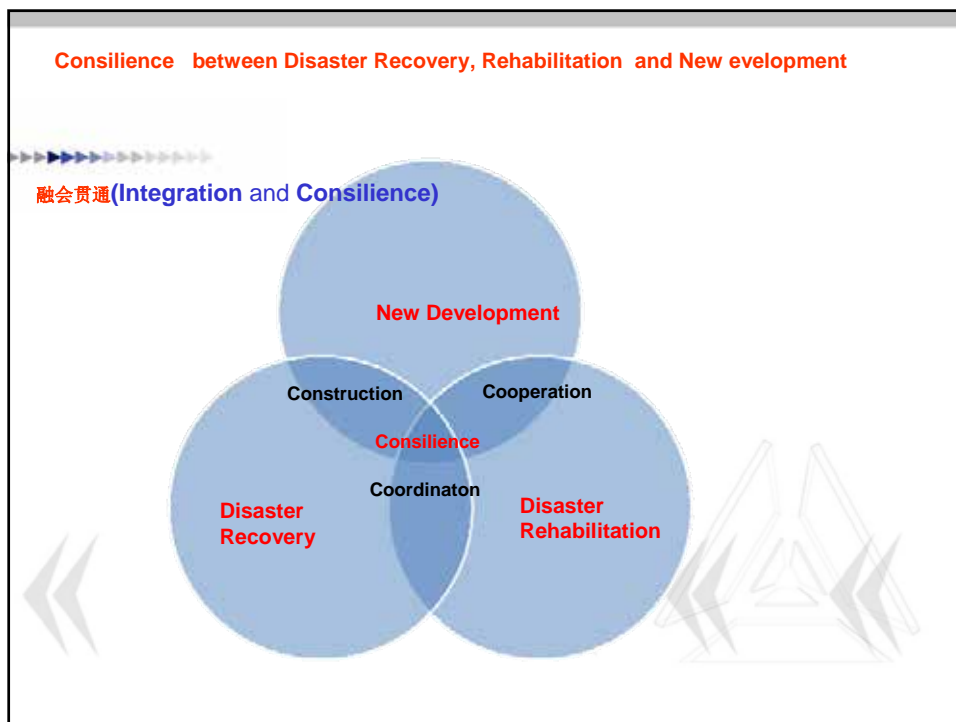
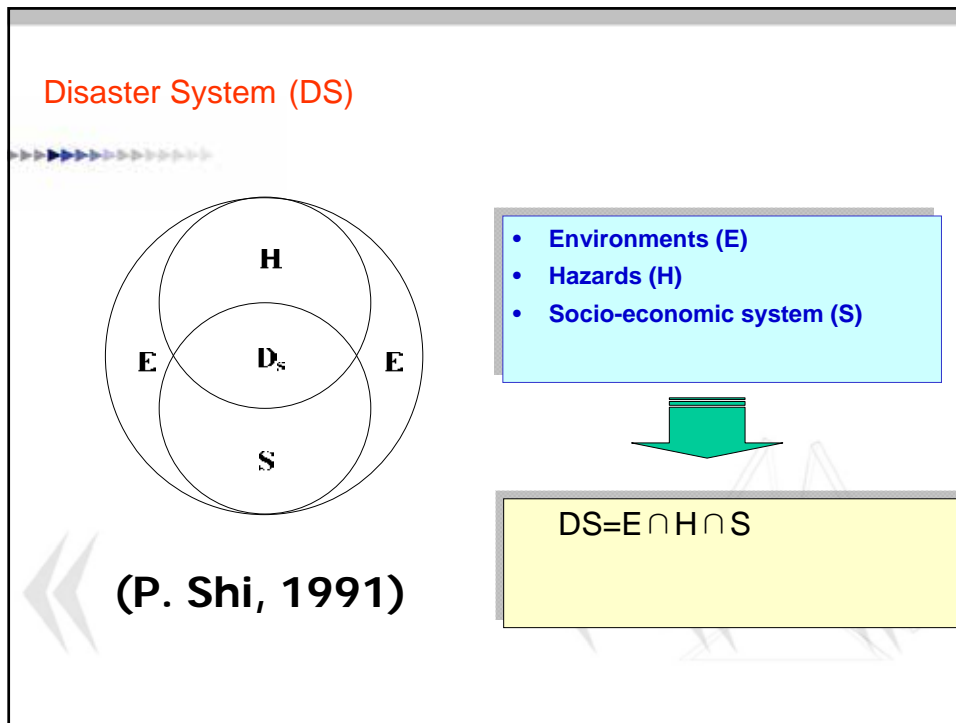
- By integrally combining national overall strategic objectives with local actual needs, we should plan and form a network-linked layout of productive power, and create numerous “anchor points” and “growth poles” to bring leap-forward development to Western and Central regions and realize transition from all-dimensional economic stimulus to region-focused economic stimulus.
- During adjustment of regional structures, industry transformation and upgrading between East and West shall be accelerated. Core coastal regions (such as Pearl River Delta, Yangtze River Delta and Capital circle), in particular, shall gradually radiate their traditional industries to the surrounding regions by enhancing their innovative abilities, and create new driving power for economic growth and transit to high-end areas within the industry by transforming economy growth mode.

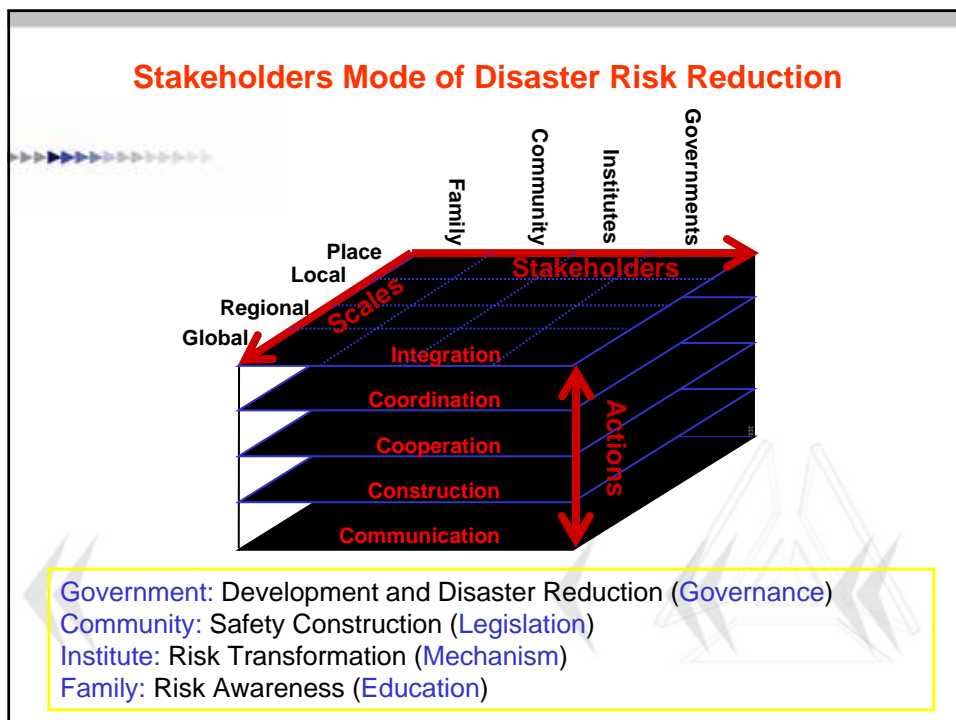
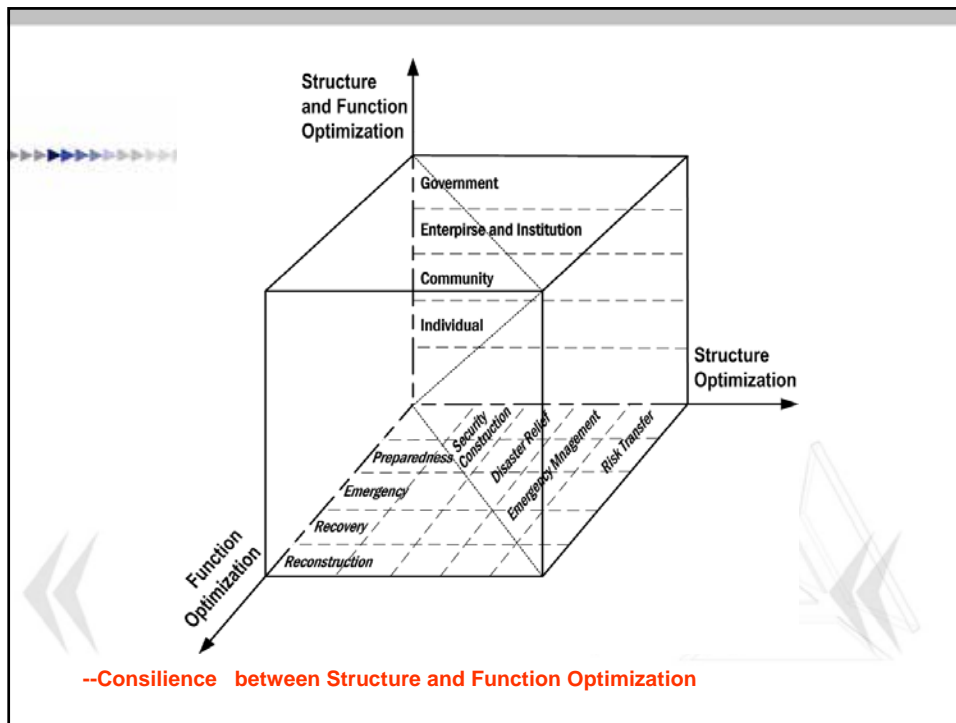
**S4 The core objective for urban, social and economic development is to realize modernization**

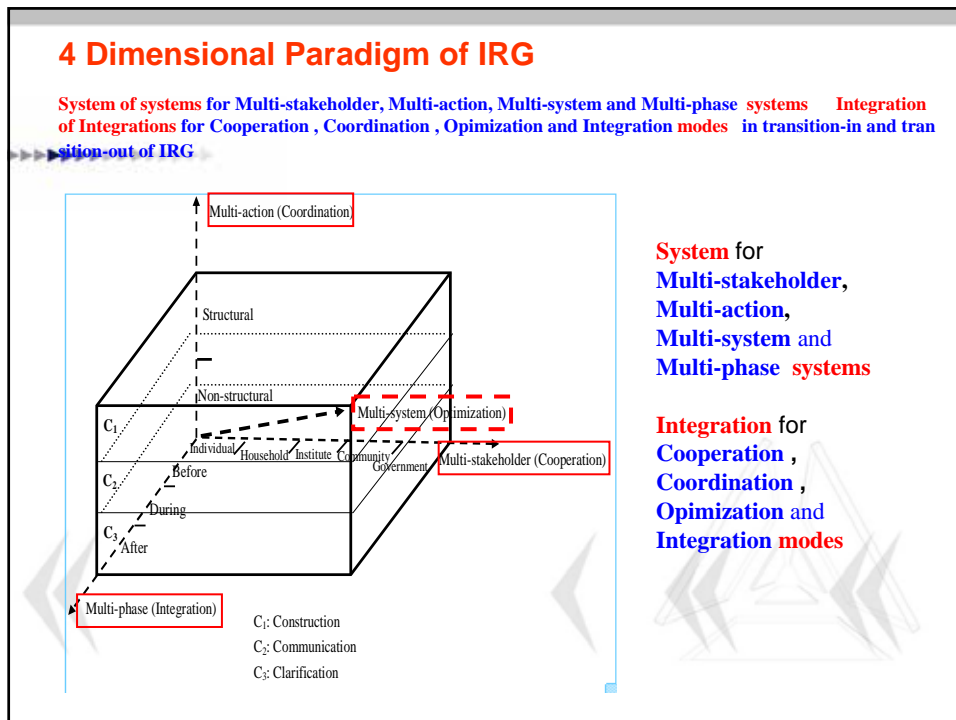
- Population-oriented urbanization, which is characterized by large-scale migration of population to urban areas, does not gear to Chinese national conditions. We shall avoid “urban illness”;
- While creating leading driving power for urban development, we shall promote urban suburbanization to walk on the urbanization road of characteristic and coordinated development;
- Realize modernization of infrastructure, producing mode, living way, values and ideas;
- Break through disparities in urban and rural policies, coordinate between efficiency and equity, and increase input in backward regions and infrastructure.

**3.3 A Chinese Way for Dealing with Disaster Risk Reduction**

- **天地人和(Nature, Living environment and People)**
  - Better understanding the relationship among three components in the Earth's system (Nature, Living environment and People), their interaction and processes.
- **天人合一(Harmony between nature and people)**
  - Changes both in Nature and human society (People) must be coordinated with each other in spatial-temporal scale and magnitude.
  - Emphasis of speed of development







European-Chinese Centre for Education and Research  
in Regional Development Planning (ECER)

# Thanks !

北京师范大学  
Beijing Normal University  
地表过程与资源生态国家重点实验室  
State Key Laboratory of Earth Surface Processes and Resource Ecology



**Forum “Sustainable Urban and Regional Development“  
on the occasion of EXPO Shanghai  
October 18th, 2010**



a Cooperation Project  
between the City of Trier and  
the Beijing Normal University

**Lecture:**

**Overcoming Regional Disparities in China  
and Germany to Establish Equal Living**

**Conditions: Objectives, Starting Points and Perspectives**

Prof. Dr. Gunnar Schwarting,  
Director of the Congress of Municipalities of Rhineland-Palatinate, Mainz



## **The principle of equivalent living conditions**

### **- The German perspective –**

#### **Gunnar Schwarting**

I.

It is widely accepted that everyone in Germany should be faced with equivalent living conditions wherever he lives. This is stipulated in article 72 of the German Constitution too. This does not mean perfect equality in an economic, ecologic, social or cultural sense. But in sum there should be some kind of equivalence of course according to the preferences of people who have the right to settle down where they want. The definition of equivalence in terms of the Gross National Product or a similar indicator alone does not cope the meaning of equivalence – although I will firstly refer to that indicator.

To handle the topic mentioned there are different levels of viewpoints. First of all there is an overall European perspective. One of the main targets of the European Union is the principle cohesion that means to decrease namely the economic disparities between different regions of the Union. The GNP reaches its maximum in Luxemburg by (2009) 75.900 Euro per capita while in Bulgaria the amount is only 4.400 Euro. The disparities do not disappear if an adjustment by an consumer price index is made. After this adjustment Luxemburg still has 275% of the European average while Bulgaria stays far below by 41%. The European Union tries to reduce this gap by giving subsidies to the less developed regions out of its budget. During the period 2007 – 2013 the Budget to finance specific regional politics has a volume of a little more than 300 billion Euro, most of it addressed to the regions with a GNP below 75% of the European average. This money is directed to the new eastern member states in the main. Additional there are some programs for the peripheral regions such as Lapland in northern Scandinavia.

During the last ten years the new member states caught up quite well. Bulgaria as an example rose from 28% in 2000 up to 41% in 2009. The most impressive story was the enormous growth in Ireland now clearly above the European average. But this growth was partly based upon feet of clay – this was apparent during the financial and economic crisis after 2008. The Irish economy was very vulnerable compared to other member states.

The subsidies are given according to a national strategic plan further specified by an operational program on the regional level. So every member state is involved in the European Regional Policy – but the programs have to be approved by the European Commission. The content of such an operational program differs widely between the regions. It may focus on the improvement of (public and private) infrastructure; but there are also measures to enforce the competitive capacity of the regional economy. One of the interesting ideas behind these subsidies is to induce private investment – so to get an accelerator effect.

There is no strong correlation between the GNP per capita and the population density. Luxemburg is not much more densely populated than Bulgaria. In Sweden there is a difference of about 50 percentage points between the “poorest” and the

“richest region even if the density of the Stockholm region is 200 times higher than the density of Norrbotten in the North. In Germany the difference amounts to 125 percentage points while the density of North Rhine-Westphalia is only 7 times higher than in Mecklenburg-Vorpommern.

## II.

This leads me to the next level of viewpoint – the national policy. Within Germany there also are disparities namely between East and West. Not mentioning the city states the GNP differs between 19.200 Euro in Mecklenburg-Vorpommern and 33.400 Euro in Hessen. To overcome this gap different measures have been taken. First of all there is a fiscal equalization scheme between the German Länder. I will not go into the details but there are three different instruments:

- The distribution of the Value Added Tax Revenue in favor of the “poorer” Länder;
- Direct compensations between “rich” (donors) and “poor” Länder (beneficiaries);
- Direct payments out of the national budget to smaller and/or “poor” Länder.

As an example Rhineland-Palatine got 346 million Euro out of the compensation scheme and 223 million Euros from the national budget in 2006. On the other side Hessen paid 2.418 million Euros and got no money from the national budget. In this context I will not mention the specific aid to the so called New Länder – the former GDR. This aid (“Pact of Solidarity II”) has a volume of 156,5 billion Euros during the period from 2005 – 2019.

Secondly the spatial placement of public institutions is a traditional instrument to strengthen weaker regions. Very well known is the placement of universities during the late sixties and early seventies in Western Germany. After the unification two of the High Courts were transferred from Berlin to Leipzig in Saxony respectively from Kassel to Erfurt in Thuringia. In the past subsidies for the settlement of new plants was another measure to improve the economic base of regions. But under the regime of the European Subsidy Control the use of it is strictly limited at least in Germany as a well developed member state.

Thirdly there is the improvement of public and private infrastructure. In the Sixties and Seventies many new motorways were built. Beginning in the Nineties the system of high-speed trains linked main cities together, but often letting aside the so called hinterland. A very recent discussion is concerned with the development of high-speed-internet connections all over the country to ensure that communication as a main condition for economic activity. While motorways and railway were undertaken by the state or public entities the high speed internet is a public/private form of infrastructure.

## III.

The third viewpoint is related to the regional level. Within every Land there are disparities; f. ex. in Rhineland-Palatinate the GNP per capita ranges from 120% above the average to 18% below. So another fiscal equalization scheme on the local level takes place. It cannot and shall not eliminate different levels of revenues but every municipality should have at least enough resources to meet minimum requirements in relation to the average municipality. I must admit that the minimum

requirements are not always met because the amount given to fiscal equalization is too low. So even the average municipality does not get enough money to fulfill its duties.

A characteristic of fiscal equalization on the local level are specific grants to build up public infrastructure. The allocation of these amounts – in Rhineland-Palatinate they sum up to nearly 40% of the total budget for fiscal equalization – surely can influence the specific living conditions in space. But they cannot be spread all over the country – this would be too costly at least. The allocation should follow the path of development policy or program. One of the most important general principles of spatial policy is the concept of central places: In space there are some bigger municipalities surrounded by a number of smaller ones. The central place shall cover all the needs which cannot be met in every municipality. This can be health care, public administration, cultural institutions, financial services or shops. The concept of central places is not only related to public infrastructure but to private infrastructure as well.

#### IV.

Of course there are central places of higher, medium and lower level according to the catchment area or commuter belt for the specific service. It is indeed wider for an Opera House than for a baker shop. But what sounds good in theory is not easy to translate in practical action. Historical development has led to quite different placement of municipalities of all size in space. As for instance in the Rhine-Neckar Region there are a lot of central places within a quite small radius; in contrast the city of Kaiserslautern as well as Trier is a classical central city surrounded by smaller communities as satellites. But – as always in such processes – the valuation of the position of a specific municipality within the system of central places differs not only between the local politicians and others. In North-Rhine Westphalia a city like Bergisch-Gladbach (with about the same population size as Trier) will not rank among the high level Central Places – this position is held by the nearby Cologne.

The fundamental idea of the system of central places asks for a limited number of such places. This is one major challenge for the so called regional development plan which has been renewed every 10 to 15 years. The last program dating from the year 2008 dealt for the first time with the problem of demographic change. With a shrinking and – more important – ageing population the system of central places must be redefined. On the one hand the population basis will be – at most in the peripheral regions – smaller making it more costly to offer all the services. On the other hand an older population might be of limited mobility so distances to central places may become a problem. This will become even more important because of the creeping demographic change. Rhineland-Palatinate is not faced with a shrinking population size yet; but the ageing of the population is a very actual problem. Aged people with less mobility and specific needs in e.g. health care need a Central Place in shorter distance or even should live just in this place.

Germany but especially Rhineland-Palatinate is good example for the importance of central places. There exists no dominating capital city as Paris in France or even Vienna in Austria. The value of central places especially in the rural regions of our Bundesland is shown by a small study undertaken by the association of cities 3 years ago. The highest density of doctors outside hospitals is not in the bigger cities but in the rural central cities. Similar results were found for employment opportunities. Central cities often held 50% of all jobs within their district. Or put it in another way:

The relation of jobs to the resident population rose up to  $\frac{1}{2}$  and more which means that statistically at least every second inhabitant could have a job in this municipality. Normally these places are the locations for schools and other public institutions. This might spotlight the importance of central places especially in rural areas.

There exists another concept in regional politics. It is the definition of growth poles. This concept was established when manufacturing was big or dominant sector of the economy. This is no longer the case in Germany or in Rhineland-Palatinate. While agriculture – even in a region full of wine – does not have a higher proportion than 1,5% of the GNP (2009) manufacturing (including construction) contributes only 28,4% to the GNP. The main part falls upon Services. As service offices are more mobile the definition of specific growth poles seems to be no longer adequate at least for Germany.

V.

Equivalent living conditions cannot only be measured by economic opportunities or good access to services. Other elements are the quality of the environment or social cohesion within the municipality. They cannot be measured like economic development or the travel time to reach e.g. health services. So the concept of central places is only one – but important – aspect when living conditions have to be evaluated.

What are the perspectives? Germany is still quite densely populated; so the concept of central places still can be used. There are some regions in the East with high population losses within 20 years where perhaps new answers have to be given. One main theme is the location of primary schools. Until yet children (if a specific distance between home and school is exceeded) are brought by bus to their school. In some parts of Brandenburg (with very low population density) this can lead to travel times of one hour and more per direction! So a kind of deconcentration, e-learning and other concepts might take place. In case of the supply of goods and services mobile solutions can be appropriate.

# The Principle of Equivalent Living Conditions

The German Perspective  
Gunnar Schwarting  
Mainz/Speyer

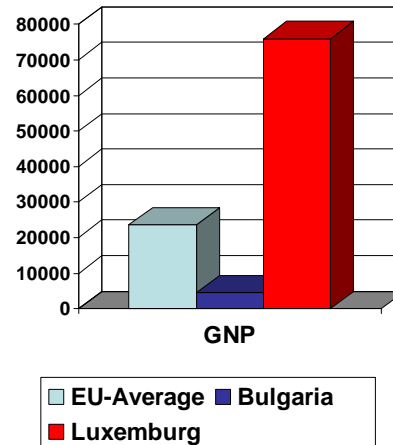
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### Agenda

- A European Viewpoint
- A National Viewpoint
- A Regional Viewpoint
- Central Places as a goal in regional policy
- Outlook

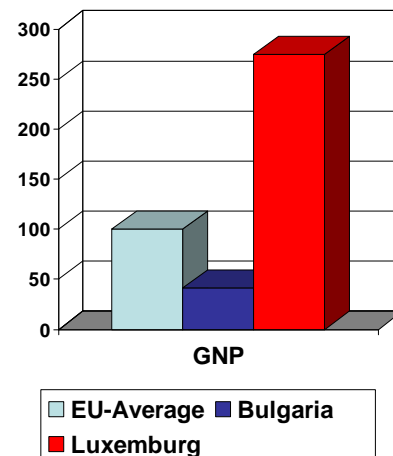
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European Differences  
in GNP  
- in nominal terms -



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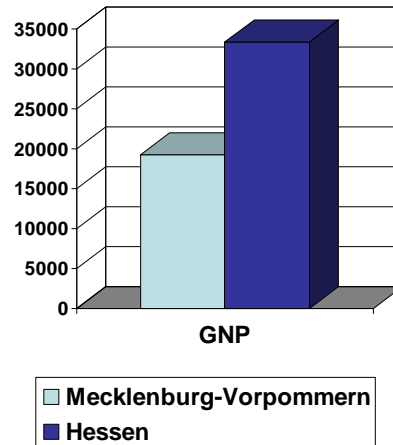
European Differences  
in GNP  
- adjusted by CPI -  
(EU-27 = 100)





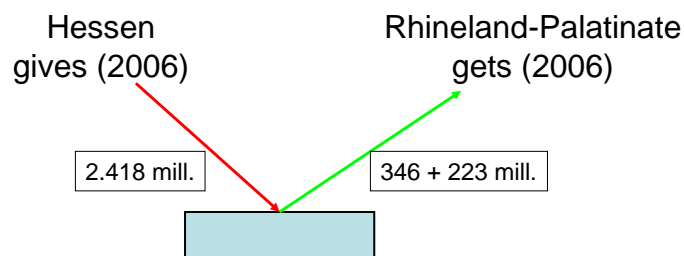
### ECER October 2010

National Differences  
in GNP  
- in nominal terms -



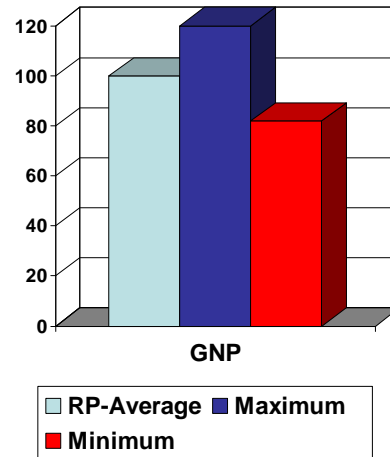
### ECER October 2010

Fiscal Equalization Scheme  
- Länder -

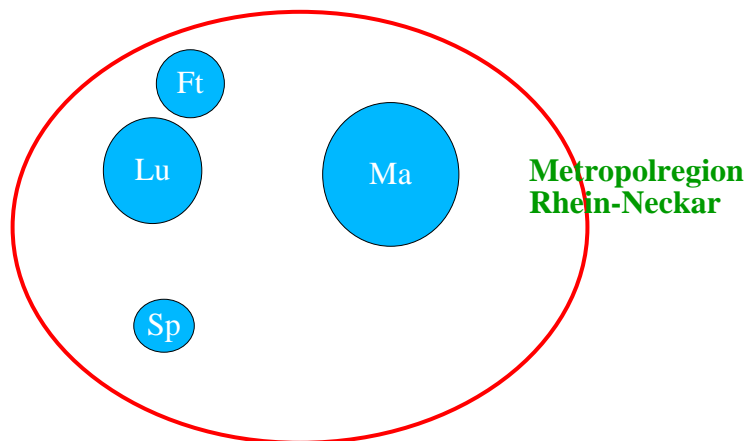


## ECER October 2010

Differences in Regional  
GNP  
- Rhineland-Palatinate -

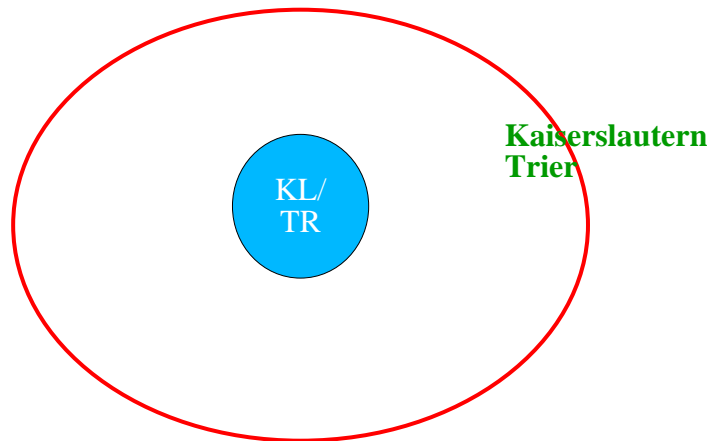


## Die Stadt und „ihr“ Umland



8

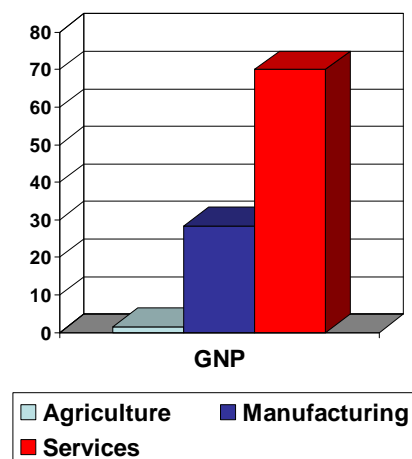
## Die Stadt und „ihr“ Umland



9

## ECER October 2010

Distribution of GNP  
in Rhineland-Palatinate  
by sectors



ECER October 2010

Thank you very much for your attention

**Forum “Sustainable Urban and Regional Development“  
on the occasion of EXPO Shanghai  
October 18th, 2010**



a Cooperation Project  
between the City of Trier and  
the Beijing Normal University

**Lecture:**

**Substantive Starting Points of ECER - Academic Education, Professional Training and Research as Bases of Sustainable Urban and Regional Development in China**

Prof. h. c. Dr. Johannes Weinand  
Director of the Office of Urban Development and Statistics, City of Trier



Prof. Dr. Johannes Weinand

Director of the Office of Urban, Development and Statistics, City of Trier

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Speech Manuscript\*

**„Substantive Starting Points of ECER – Education, Professional Training and Research as  
Bases of Sustainable Urban and Regional Development in China”**

**within the Framework of the ECER-Forum  
“Sustainable Urban and Regional Development”**

**on October 18, 2010  
on the Occasion of the World Exhibition in Shanghai**

I am pleased to be allowed to present our joint project „European-Chinese Center for Education and Research in Spatial and Development Planning“ with my colleges, especially with Prof. Shi. We started this project in 2006 and we carried out the so called project identification phase / feasibility study, which was co-financed by the Ministry of Education in China and the Federal Ministry of Education and Research (in Germany). I'd like to take the result of my following speech in advance: the studies, which we, Beijing Normal University and the City of Trier have jointly conducted, show, that such a European-Chinese Center is feasible.

I am glad that today I can present these outcomes summararily to you. Within the time given to me, in my presentation, I'd like to introduce you the substantial modules and the focuses of our European-Chinese Center, the center's foreseeable organization structure and the starting points of its further implementation. Before I begin my presentation, however, I'd like to take this opportunity to thank Beijing Normal University, and especially thank Professor Shi for the very good, trustful and always competent and reliable cooperation. My sincere thanks also go to our partners in Germany / Europe. I am convinced that we have laid the foundations together so that our network ECER can actually come into realization in the coming years. I also believe that this forum on the occasion of the EXPO Shanghai is a welcome opportunity to express my thanks with the knowledge that we will jointly further develop the ECER, and that in China we will build up and cultivate the center at the Beijing Normal University and in the City of Trier in Germany / Europe. In any case, I look forward to the future of our cooperation.

Ladies and gentlemen, I'd like to come to my presentation.

The People's Republic of China has developed over the last 15 to 20 years to one of the world's largest economies and one of the largest export nations. With the world's second largest foreign exchange reserve, China has become a serious important figure of the global economy and world politics. An important indicator of this is that foreign investors invest heavily in the People's Republic of China. The growth of the gross domestic product recent years has been double-digit as a rule during the recent years



These outstanding developments affect the entire People's Republic of China. However, from inter-regional- and especially from the urban-rural area comparison, it is ascertained that there is still serious gaps in income and considerable development differences. There are still spatial development disparities such as in the distribution of population, the distribution of infrastructure, income and employment etc.. In contrast to the coastal stripe of conurbation where the most modern cities as economic centers of the country are, the rural and structurally underdeveloped regions in the western hinterland are sparsely populated. Therefore, it is important for China as a national economy in its entirety, with the economic growth and success it has achieved, to reduce its spatial disparities and to define a regional planning policy to ensure comparable living conditions in all regions in the coming years.

Among other things, a very unequal distribution of population is also typical for the People's Republic of China. In the eastern centers which amount less than 6% of the country's area lives about 40-45% of the total population. The population density in metropolitan areas is 700 persons on average, in the downtown areas of Beijing up to 12,000 persons per km<sup>2</sup> while the average number of the country is 135 persons/km<sup>2</sup>. In the mono-functional and very densely populated urban residential areas of Shanghai and Beijing, it reaches the peak value by from 60,000 to 90,000 inhabitants per km<sup>2</sup>. After a rapid growth period, China has four mega-cities which are Chongqing, Shanghai, Beijing and Tianjin, 17 cities with 4-9 million inhabitants and over 141 cities of 1-4 million inhabitants.

In particular, the coastal conurbation have gained new meaning and have experienced tremendous growth in the course of economic modernization and the opening of the country – just to think of the success of the special economic zones. The various problems aroused by the growth of urban population have certainly made the Chinese administration feel obliged to formulate a sustainable model for the urban development. This was particularly necessary because it is reported that until 2020 the majority of the Chinese population will live in city. It is considered by the Chinese government that the (population) centralization in urban areas is an effective way to solve the problems of unemployment and to reduce significant income disparities between city and rural area. As a process of settlement of larger part of the population in cities and establishment of matched infrastructure, urbanization is placed at the top of the agenda of Chinese government as a strategic development objective. The enormous economic development in the People's

Republic of China has radically changed the face of many large Chinese cities. Undoubtedly, cities like Shanghai, Beijing and Guangzhou must have been experiencing most rapid changes. In their respective contributions focusing on the corresponding main thematic emphases, Prof. Shi and the Chinese colleagues will further deal with spatial development differences and corresponding strategic attempts at solution. The following slides will give you an impression of this spatial concentration and development disparities (see Slide 1, 2, 3 and 4).

These and other regional disparities were the reason and the cause of the initial cooperation between the City of Trier on the German / European side and the Beijing Normal University (BNU) on the Chinese side started in 2006.

In Europe, a varied successful tradition of regional planning and regional structural policy can be referred to Germany in particular. With important instruments, infrastructure was distributed relatively evenly over the surface of the entire country, so that today, people in both rural and urban areas could generally reach infrastructure within a reasonable distance and thus live under comparable living conditions. It raises then the question, in what form the diverse experiences of spatial and structural policies of Europe and the ones of Germany in particular can be transferred to China.

At this point, we'd like to emphasize: we find it important that not only the consultants' (scientific) investigations but also invest in brain, that is, invest in "human-capital" in a long term, should be carried out. What we'd like to do is that the best Chinese students from selected faculties and senior leading officials from public ministries of the central government and the provincial governments are to receive academic university education and training, so that with the acquired knowledge they can function actively in their respective responsibility field in the special development of China in a short to a long term. For this purpose, a so-called project identification phase / feasibility study "European-Chinese Center for Education and Research in Spatial and Development Planning (ECER)" was defined. This feasibility study set up the following objectives (see Slide 5).

1. Reduction of Spatial Disparities in China and
2. Ultimate Creation of Equivalent Living Conditions in the Regions of China

This is to be achieved by:

3. Qualification of Chinese Regional Development- and Transport Planners
4. Dialogue and Experience Exchange between Chinese and European Regional Development- and Transport Planners
5. Further Development of Chinese Planning- and Planning Law System
6. Establishment of a Core Network (Think-tank) “Regional- and Transport Development Planning” between China and Germany / Europe

Slide 6 shows that the center of the German / European network for this project identification phase / feasibility study is based in Trier, which coordinates the German / European partner universities, governments, public administrations, enterprises and non-government organizations. This center in Trier is in direct contact and exchange with the center of the Chinese network in Beijing, which was established by the BNU. The BNU is in turn the center of the Chinese network of Chinese universities and institutes, governments, public administrations, enterprises and non-government organizations at all levels. The both centers in Trier and Beijing have signed a corresponding contract for the project identification phase / feasibility study. The main substantive modules are “Academic Education”, “Professional Training” and “Research”.

### **Academic Education**

With regard to the academic education, the both project bearers, the City of Trier and Beijing, have drawn up a so-called target and ideal curriculum for the faculties of Urban-, Regional- and Transport Development Planning, Regional Development Planning, Economics and Jurisprudence with Spatial Reference. The following Slide 7 shows the main areas of regional development planning, which are interdependent on each other. The objectives of development planning have a multidimensional and differentiated regional orientation. They refer to the

institutional infrastructure, the basic financial conditions, the general living conditions of local societies, the demographical situation and its future development, the technological development, the economic opportunities and risks, the physical infrastructure and the natural environmental conditions and the basic political conditions (see Slide 8).

At this point it is clear that an appropriate curriculum must be interdisciplinary and multifunctional. Slide 8 shows also that this curriculum should be conducted for more than 6 semesters. While doing this, there is difference among optional-, compulsory courses and case studies etc. This curriculum shows that the desired substantial implementation on the one hand, and necessity to define a joint degree between Chinese and German / European universities, will only be reached in a long term. Therefore we have agreed that the target curriculum is a long-term goal and we must carry out concrete measures soon.

While doing this, the target curriculum serves as a basis: The courses, which are already provided at the BNU, the Beijing Jiaotong University (BJU) or other Chinese partner universities in China, should not be provided again in Germany / Europe. Rather, courses that are complementary and supplementary to those ones which already exist in China should be provided in Germany / Europe. We have set up such courses and have correspondingly integrated them into the complementary teaching programs at German / European partner universities. We aim to arrange the best students with a very good Bachelor's degree from China to have selected Master's program in Germany and Europe.

Already, in the project identification phase / feasibility study, 20 selected students of the BNU have been successfully arranged into the international English language master's program "Infrastructure Planning" at the University of Stuttgart (Prof. Friedrich). These students will gain their master's degree in 6 semesters there.

Other partners in the network are the University of Trier, Luxembourg, Kaiserslautern, Berlin, Bremen, Bremerhaven and the ETH Zurich (see Slide 9). These universities can and will accept the selected best students from China. The following Slide 10 shows that how many students from China can gain their master's degree at the integrated German / European universities in the coming years. In addition, further universities were defined in the project identification phase /

feasibility study. They can only, however, be integrated in the future regular operation. Notable examples are Antwerpen, Utrecht, Wangeningen, but also Venice, Graz and Vienna.

In contrast, as the Chinese project bearer, the BNU, together with the Beijing Jiaotong University has addressed and integrated the following universities in China into the network (see Slide 11):

- Sun Yat-sen University,
- University Guangzhou,
- Xiamen University,
- East China Normal University,
- and Wuhan University.

These universities in Germany / Europe and China are leading universities in the academic field of regional development and thus in the further implementation they form a competence network, which should do joint projects both in the field of academic education and research.

Today, in our forum, we are going to hear the speakers and partners of the network of ECER to introduce some aspects of this cooperation:

Prof. Shi has already described the spatial differences in development in China and has shown us the approaches to overcome them from his view of point. The speech by Prof. Schwarting has summarily described the approaches and instruments implemented for Germany, whose portability to China would be to be checked. What is important is that the planners of a sustainable urban- and regional development planning are to be well educated and well trained and the outcomes of the application-oriented research studies are to be included in the field of education and professional training. For this purpose, ECER can and should make a significant contribution. I'll try to describe it summarily in this presentation. After my presentation, Mrs. Prof. Jiang and Mr. Prof. Shi will identify the requirements for the academic education and the qualification of the best Chinese students in master's programs and PhD program from the Chinese perspective. Mr. Gándara, ECER Advsiior of the City of Trier, will formulate the requirements in the field of professional training of ECER and present approaches to implement the outcomes. A particular focus will be demonstrated by the application-oriented research, in

which various colleagues from China and Germany will deal with key aspects of a sustainable urban- and regional development planning. These are the following subjects:

- Decentralization, Concentration or Decentralized Concentration—Particularly in Terms of
- Land Use and Water Management
- Transport Development Planning: a Central Basis for a Sustainable Urban- and Regional
- Development
- Transeurasian Transport Corridors
- Environment- and Resource Management
- Disaster Control and Prevention

The colleagues, who will present these key topics, will demonstrate a specific focus, which is particularly of relation with China with regard to the cooperation in 25 minutes at maximum in a very concentrated way.

Finally, Prof. Shi and I will demonstrate our joint perspectives for the durable implementation of ECER for discussion.

In summary, Slide 12 and 13 will demonstrate the strategic objectives of ECER in the field of academic education.

### **Professional Training**

In professional training, which was as the second main module investigated in the project identification phase / feasibility study, two so-called “pilot seminars” were carried out in Germany / Europe. These pilot seminars have been organized by the pattern of 40% theory, 40% best-practice example and 20% culture for 14 days. The best-practice examples are selected specifically against the background of the relevance and applicability to China. The cultural program is very important for us, through which the Chinese partners are to learn the German / European thinking ways and the German / European partners the Chinese thinking way and thus leads to a greater acceptance of the knowledge to be transferred.

The both pilot seminars have also shown that the acquisition of senior and leading officials must be differently strategically completed. Mr. Gándara is going to demonstrate this in his presentation. I'd like to focus my presentation on Slide 14 to say that we plan to conduct each pre-seminars in the future in China as a fundamental introductory seminar in the five selected key fields, that is, "Disaster Control and Prevention", "Transport Development Planning", "Land Use Planning", "Sustainable Urban- and Regional Development Planning" and "Environment". This seminar will be conducted by 2-3 German / European lecturers. About 50-70 Chinese senior and leading officials from ministries of the central and provincial governments will be invited. From these more general and introductory pre-seminars main seminars will be realized in Germany / Europe, which shall last 14 days with appropriate selected participants.

It is expected that the contacts in this pre-seminar and each main seminar can be so intensified that individual ministries of the central government or individual provincial governments may express their specific need for professional training. We now believe that on this basis of the joint thematic introduction, a so-called "post seminars" on each subject can also be conducted in China. These post seminars are to be realized for 2-3 days with 2-3 German / European lecturers in China.

Mr. Gándara will represent you with the experience of the both pilot seminars with regard to the implementation of this further education. We have in the meantime submitted a bid in a Call for Tenders of the European Commission in the field of regional policy on Sept. 1, 2010 for two 14-day pilot seminars on the topic "innovation-oriented regional policy" and "urban-rural area regional policy"—at this point, I would very much like to thank the German / European cooperation partners, my thanks go especially to our staff member Mr. Gándara. We hope that our bid can be accepted so that in 2010 and 2011, at least two of the training courses for Chinese specialists co-funded by the EC can be provided at short notice.

I would like to stress on this spot that a worldwide recognized training organization from Germany has been won for the Project ECER through these seminars. This is the company InWEnt, which is supported by the federal states in Germany and is merged by the "German Society for Technical Cooperation (GTZ)" in 2010. In this respect, with InWEnt in ECER, a strong competence will be represented. In my opinion, it would be good if we could get the NDRC involved in these training projects and through the cooperation with the NDRC get

appropriate experts and leading officials integrated in the training—and Mr. Gándara will demonstrate this in his presentation.

## **Research**

In January / February 2010 we have formed the first German / European- Chinese Think-tank for a sustainable urban- and regional development.

You can see the focuses of this think-tank from the following Slide 15. The target field is the sustainable urban- and regional development. We have accepted the five key fields of the academic education and professional training in the research field. It is important that the research should not for it itself, but should be application-oriented and it should be seen as complementary and interdependent of professional training and academic education.

The following Slide 16 shows the perspective of further work on the basis of the German / European think-tank for sustainable urban and regional development. We are here today in the theme forum on the occasion of EXPO Shanghai. In this respect, one of the planned steps has already realized. On the basis of the common agreement between the City of Trier and the BNU, in the coming 4 years, we are going to carry out a think-tank every year, to which selected scientists will be invited to a key theme. This think-tank is expected to work 5-7 days in camera and ultimately present its outcomes in a public expert conference for discussion.

On the basis of this annual work, the research program whose key points were drafted in January / February 2010 should be clearly defined and the application-oriented and practical research projects should be particularly initiated and be implemented. Again, I'd like to emphasize here that these projects play a central role for the opportunity of implementation of a PhD program specifically defined for best post graduates from China upon the need from China via ECER. We consider that with these research themes, which I will comment soon, three to five students, who are in the master's programs of the academic education and who have gained best performance, shall obtain an appropriate theme for his PhD study and this shall be worked up with the agreement of individual provincial government.



This would lead to a result that best post graduates obtain their PhD-thesis' topics based on the recognized spatial key problems in the provincial governments, which shall be worked on for over 6 semesters and then corresponding results shall be presented. Based on these research projects, summer schools should also be conducted in China. The outcomes of these research projects should be worked into the curricula of academic education and vocational further education. An important goal for me is, on the basis of the think-tank, to implement a German-Chinese advisory council "sustainable urban- and regional development" under rotating chairmanship of respective ministry in Germany and China.

The application- oriented research projects, which are to be defined with the central government and the provincial governments, should be used for the working up of the PhD-theses (see Slide 17). At this point the best master's students of the participating Chinese universities in the ECER Project, maybe the best master's students from the participating universities, should be integrated. The students should do the basic theoretical and methodological research in the first semester in Germany and prepare for the second semester, which takes place in China, in which their empirical work should be done and an underlying network is to be established. During the second semester, the third semester in Germany will be prepared, in which the field outcomes are to be worked up, the schedule is to be updated and the fourth semester is to be prepared, which will again take place in China so that the empirical work can be completed and the outcomes can be coordinated with the public authorities, and the fifth semester will be in Germany for the summary of the PhD theses and the sixth semester sees the completion of the doctoral study with the attendance of the exam. The PhD theses should be presented and discussed in the ECER think-tank and should be integrated in the module of the vocational further education.

Ladies and gentlemen, I hope that I have made it clear at this point that the modules "academic education", "vocational further education" and "research" are regarded as interdependent and intersectional and this interdependence makes an essential, or even the central element of ECER (see Slide 18). The outcomes of the think-tank / the research produce an output in the form of concrete project outcomes, which can be applied as input for updating the vocational further education program and the curricula of academic training. The pre-, main and post seminars of "vocational further education" can be used so that the courses themselves can be further developed, and also, that the present practitioners there, the senior and leading officials from state

ministries can define their requirements for the research and thus the application-oriented research can be further developed on this basis. Slide 19 shows this interdependence, which should be the central element of ECER in the implementation in my opinion. The following first concrete potential research themes and project can be defined in January / February 2010 in the think-tank. They are:

- Integrative Development Planning to Reduce Urban-Rural Disparities
- Land Use and Decentral Integrative Water Management (at Example of River Basin Dongjinag in the Province of Guangdong)
- Sustainable Transport Development Planning and Professional Mobility Management
- Sustainable Environment Development Planning and Environment Management
- Forward-looking Disaster Control and Prevention (at Example of the City of Lijiang in the Province of Yunnan)

From this theme selection three further concretized application-oriented research projects have been defined:

- Model Project “Sustainable Land Use and Water Management – at Example of the Province of Guangdong (for the River Basin Dongjiang)
- Model Project: Disaster Control and Prevention –Forward-looking Risk Management at Example of the City of Lijiang in the Province of Yunnan
- Establishment of Transeusian Transport Corridors

Against the background of the requirements regarding content in the modules „Academic Education”, “Vocational Further Education” and “Research” and the interdependence among these fields, it must be assured at least that the center in Germany / Europe which functions as a strategic unit shall be organized, which is able to coordinate and further develop these modules. I assume that this is similar to the Chinese side. We have thus decided to establish a new organizational unit in Germany / Europe (see Slide 20), which is formed under German law and which can be defined as a strategic holding organization. This holding organization shall particularly take over the following key tasks:

In the field of academic education, this organization is responsible for the establishment and development of the network of German / European and Chinese universities. It shall take over the agency's functions to arrange Chinese students in master's programs at German and European universities and especially to take over the functions to develop and implement the PhD programs, which are to be oriented to China's specific interests.

In the field of vocational further education, the existing over five-year programmed training program is to be carried out in the financing and implementation so that senior and leading officials from China can obtain a qualified training. With this program, at least 1,500 senior and leading officials can be trained both in Germany / Europe and China.

In the field of research, the Institution ECER shall particularly take over the function to prepare, implement and follow up the annual think-tank to select a theme of sustainable urban and regional development.

It should be emphasized here that with the cooperation partners, especially via each project-related contract in the modules „academic education“, „ professional training” and “research”, projects should be implemented. One of these projects is, for instance, the submitted application for implementation of two further training seminars, which can be co-funded by the EU and coordinated and implemented by ECER with the company InWEnt. A further project is the started arrangement of Chinese students in the English language master's program “Infrastructure Planning” at the University of Stuttgart and the other universities in Germany and Europe.

Projects in the field of research I have mentioned are to be further clearly defined and implemented. The outcomes from each cooperation contract and the associated projects will be worked up in the holding organization so that they can serve on the continuation and development of ECER and thus ECER can always keep being reconstructed. The organization's structure is defined for the German-European level. We'd like to get it fairly implemented by end of the year of 2010. The City of Trier will proceed to it. With Mr. Kaster, who represents the interests of the region of Trier as Member of Parliament, the governing Mayor of Trier, together with me, has had a talk with Minister Prof. Dr. Annette Schavan. This talk proved to be very

positive. I assume that ECER can begin its regular operation from January 1, 2011 on the German/European side.

In addition, we have made the calculation for the economic efficiency for ECER. However, I'd like not to mention these figures in this place.

We have developed a marketing plan for the Project ECER. I would like to present some opportunities to you at the end: the Internet presence is realized and many others. With regard to the coming steps, we have developed a marketing-action program, which demonstrates the modules "education" "training" and "research" in a short-, medium- and long-term perspective. Besides the Internet presence, multilingual brochures, folders are available to represent the courses of the further education and a variety of other marketing measures have already been carried out.

Prof. Dr. Johannes Weinand



European-Chinese Centre for Education and Research  
in Regional Development Planning (ECER)

a Cooperation Project between the City of Trier  
and the Beijing Normal University (ECER)

**Substantive Starting Points of ECER - Academic Education,  
Professional Training and Research as Bases of Sustainable  
Urban and Regional Development in China**


Prof. h.c. Dr. Johannes Weinand,  
Director Office for Urban Development and Statistics, City of Trier



European-Chinese Centre for Education and Research  
in Regional Development Planning (ECER)

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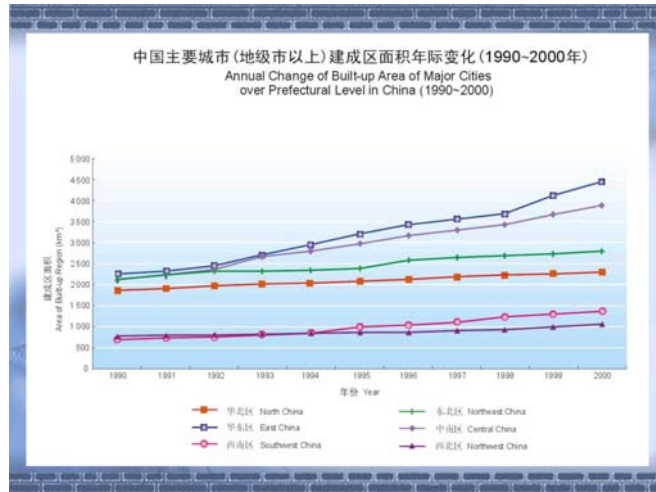
Built-up  
Region of  
Cities in China  
(2000)



Prof. h.c. Dr. Johannes Weinand, Director Office for Urban Development and Statistics, City of Trier 1



Annual Change of Built-up Area of Major Cities over Prefectural Level in China (1990-2000)

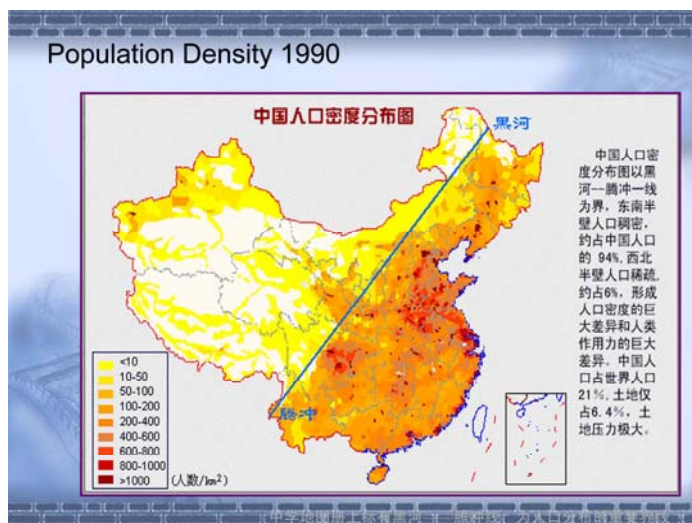


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2




Population Density 1990



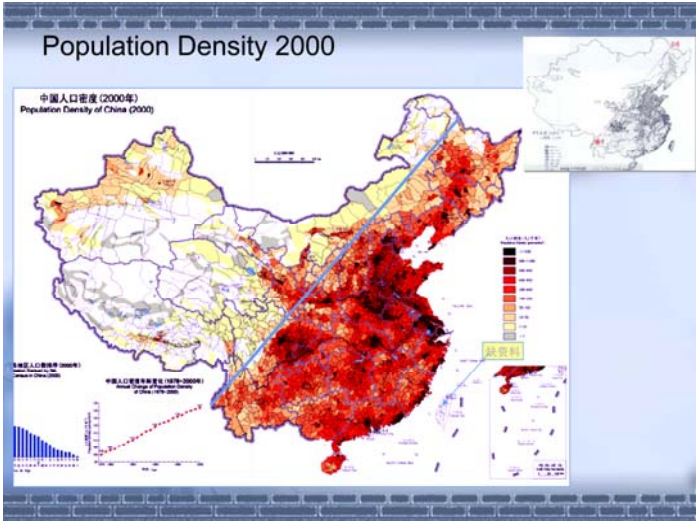
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3

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Population  
Density 2000



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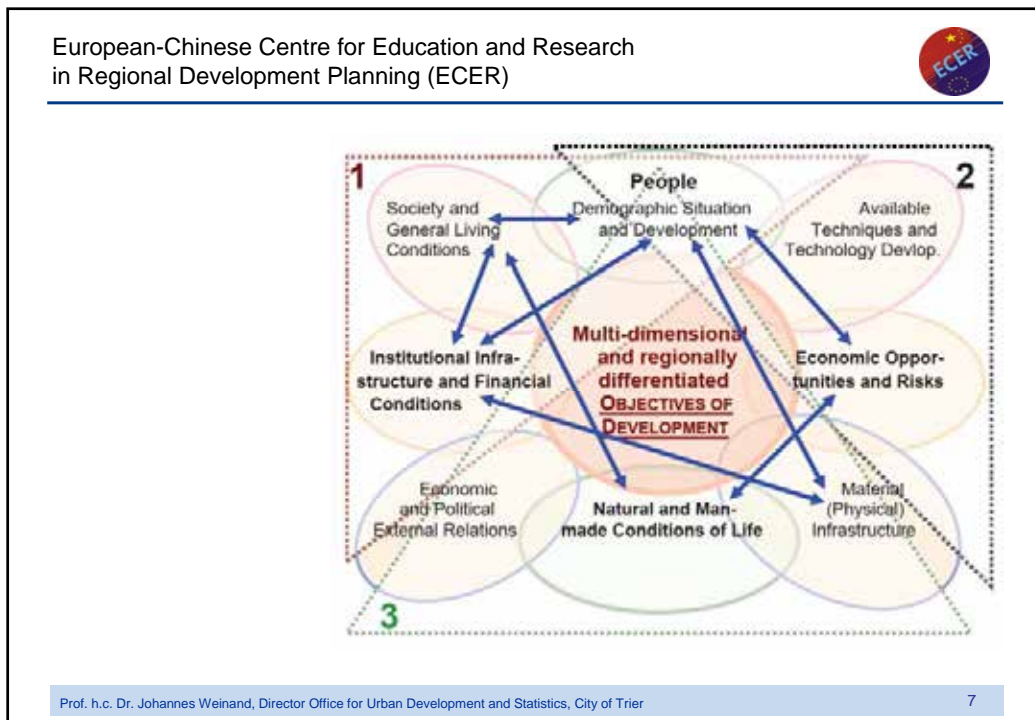
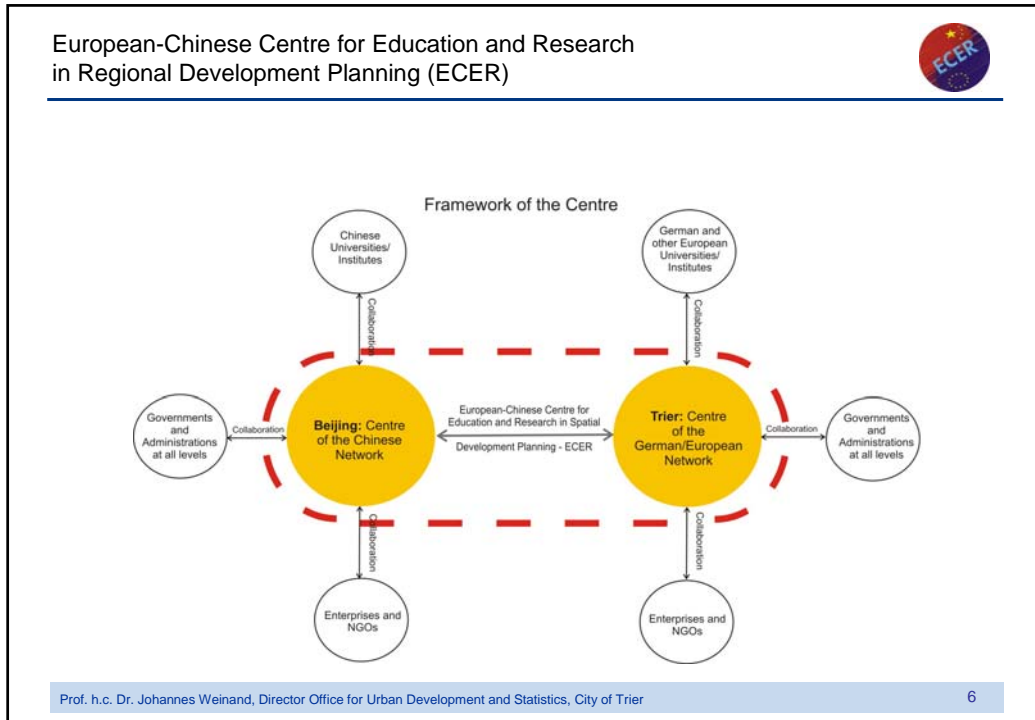
1. Reduction of Spatial Disparities in China and
2. Ultimate Creation of Equivalent Living Conditions in the Regions of China

This is to be achieved by:

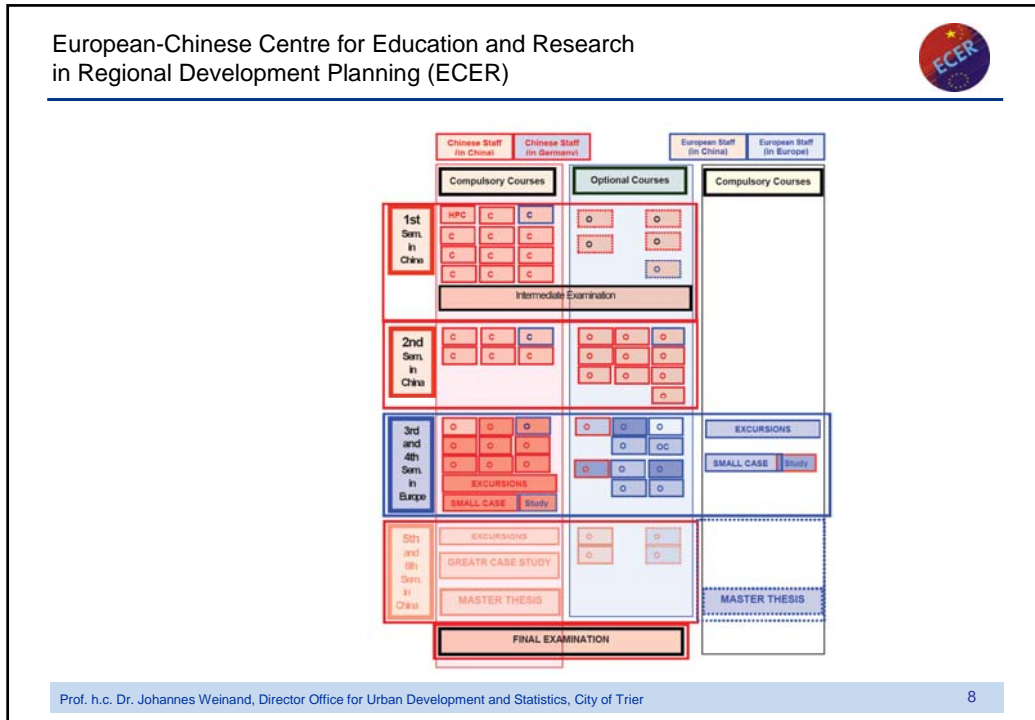
3. Qualification of Chinese Regional Development- and Transport Planners
4. Dialogue and Experience Exchange between Chinese and European Regional Development- and Transport Planners
5. Further Development of Chinese Planning- and Planning Law System
6. Establishment of a Core Network (Think-tank) "Regional- and Transport Development Planning" between China and Germany / Europe


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5







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Admission Capacity for Master's Students from China at Universities in Germany /  
Europe in the Network of ECER

	2011	2012	2013	2014	2015	Sum
RWTH Aachen	20	25	30	40	50	165
FU Berlin	20	20	30	30	35	135
University of Kaiserslautern	5	5	5	10	10	35
University of Luxemburg	5	5	5	10	10	35
University of Stuttgart	10	10	10	10	10	50
University of Trier	5	5	5	10	10	35
ETH Zürich	5	5	5	10	10	35
<b>Sum</b>	<b>70</b>	<b>75</b>	<b>90</b>	<b>120</b>	<b>135</b>	<b>490</b>

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Network of Chinese Universities involved in "Academic Education" and " Research" in ECER

- Project bearer and project partner of ECER in China
- Project partner (of BNU integrated universities)

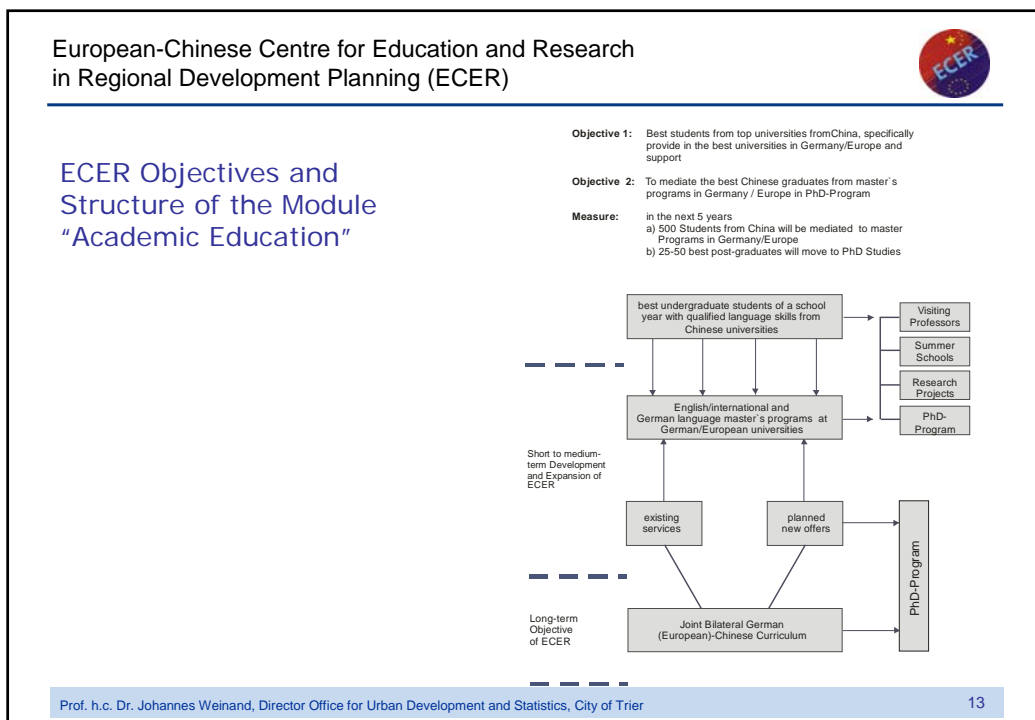
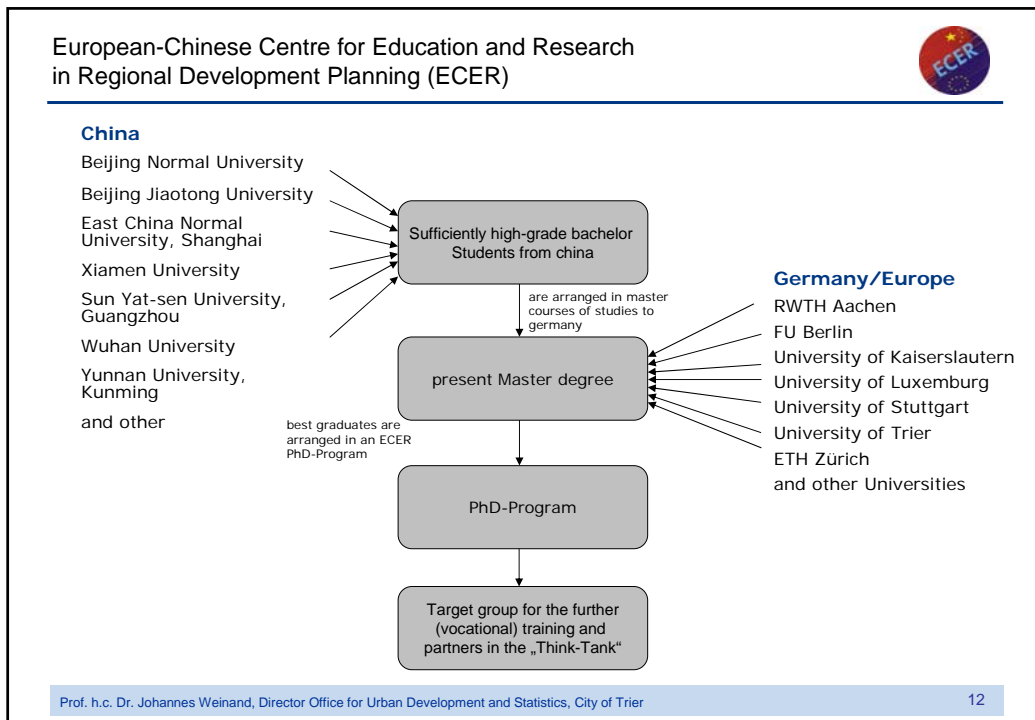
Ranking\*

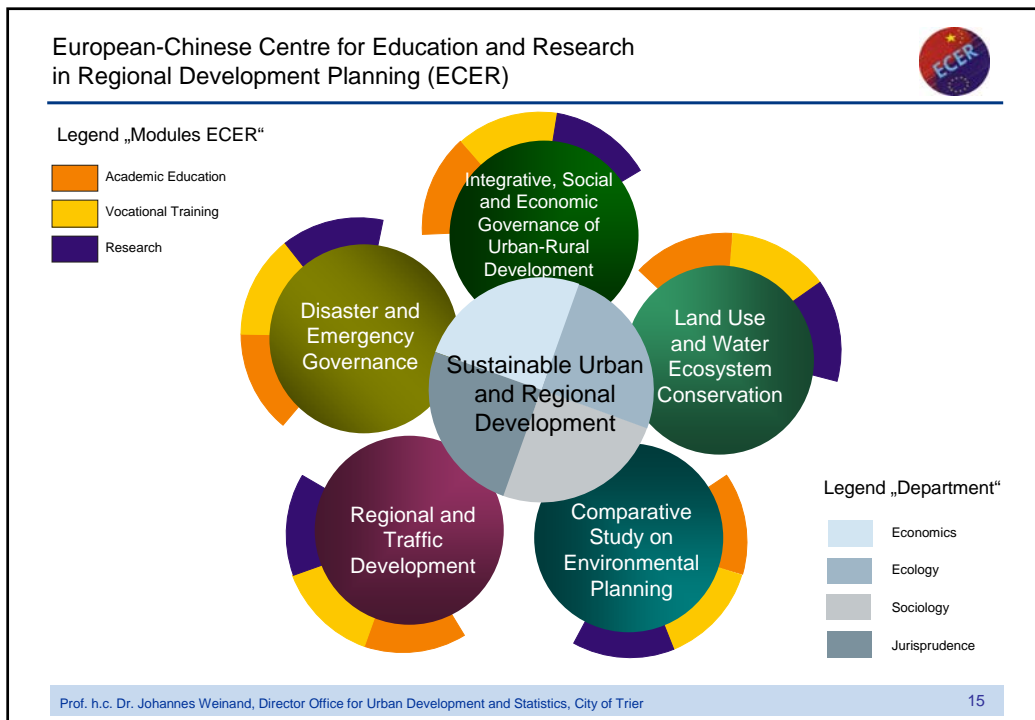
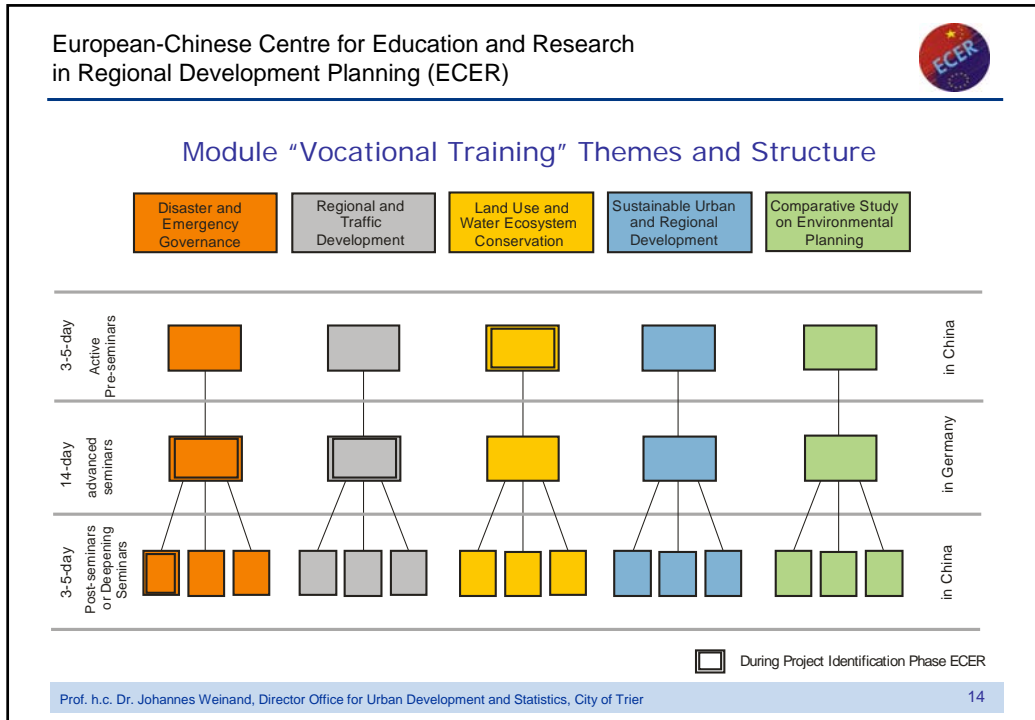
- 7 Wuhan University
- 10 Sun Yat-sen University, Guangzhou
- 15 Beijing Normal University
- 20 Xiamen University
- 24 East China Normal University, Shanghai

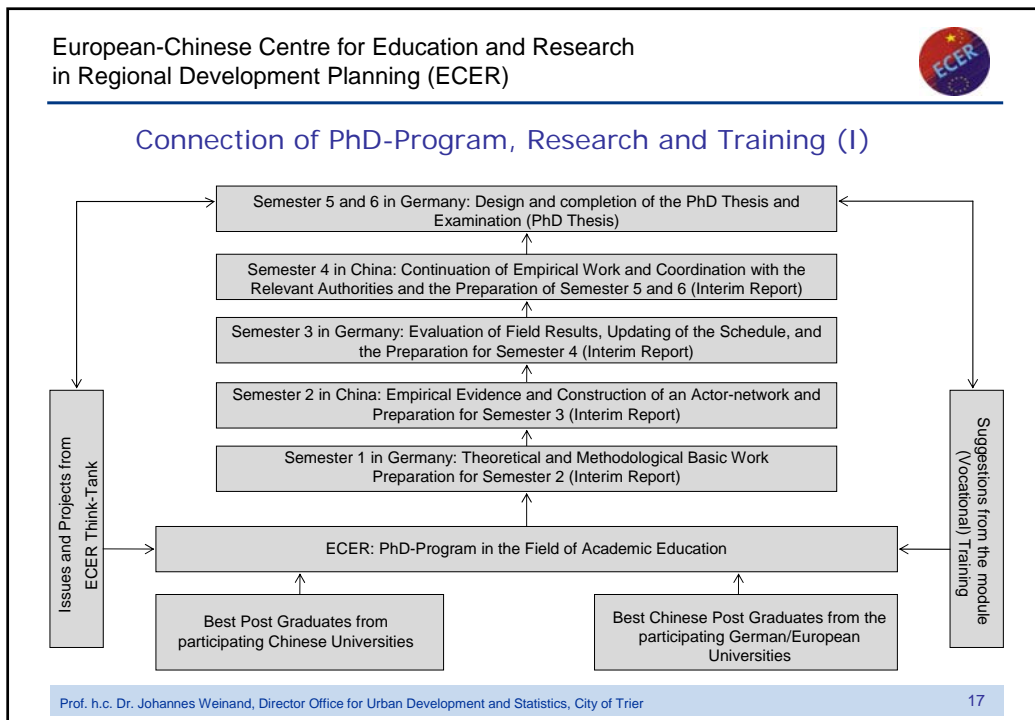
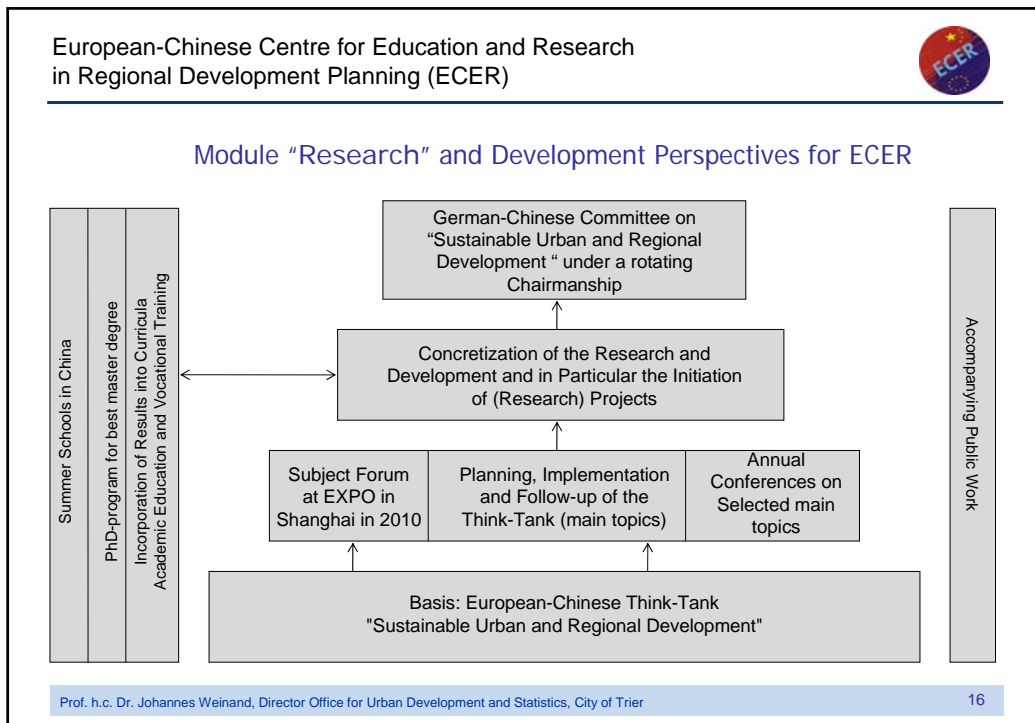
\* all the „985-Program“

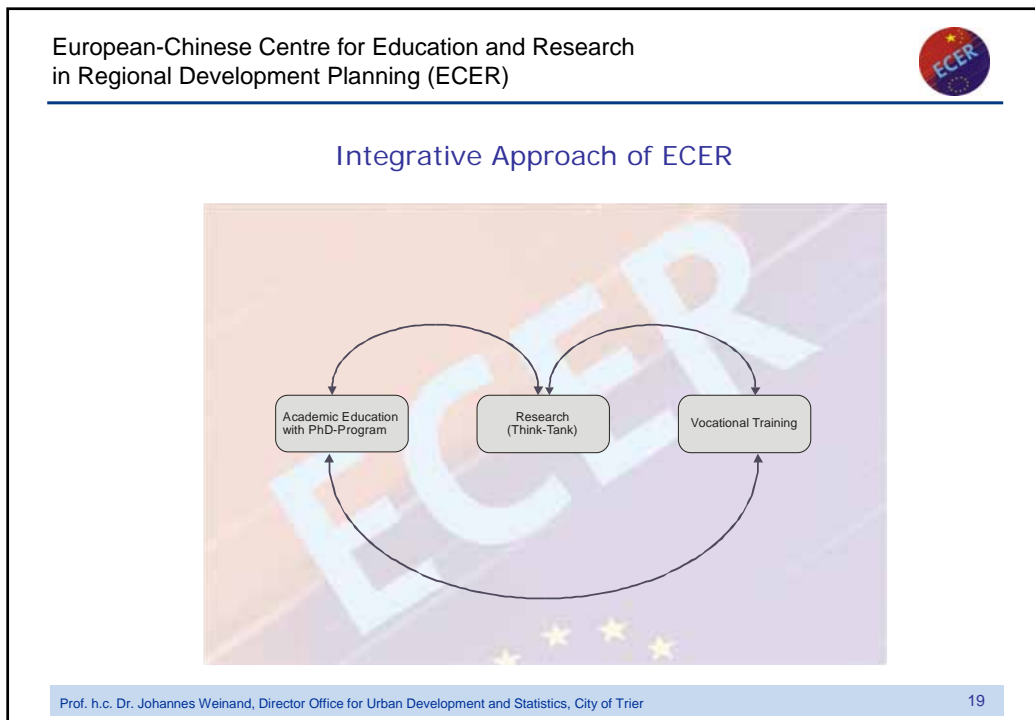
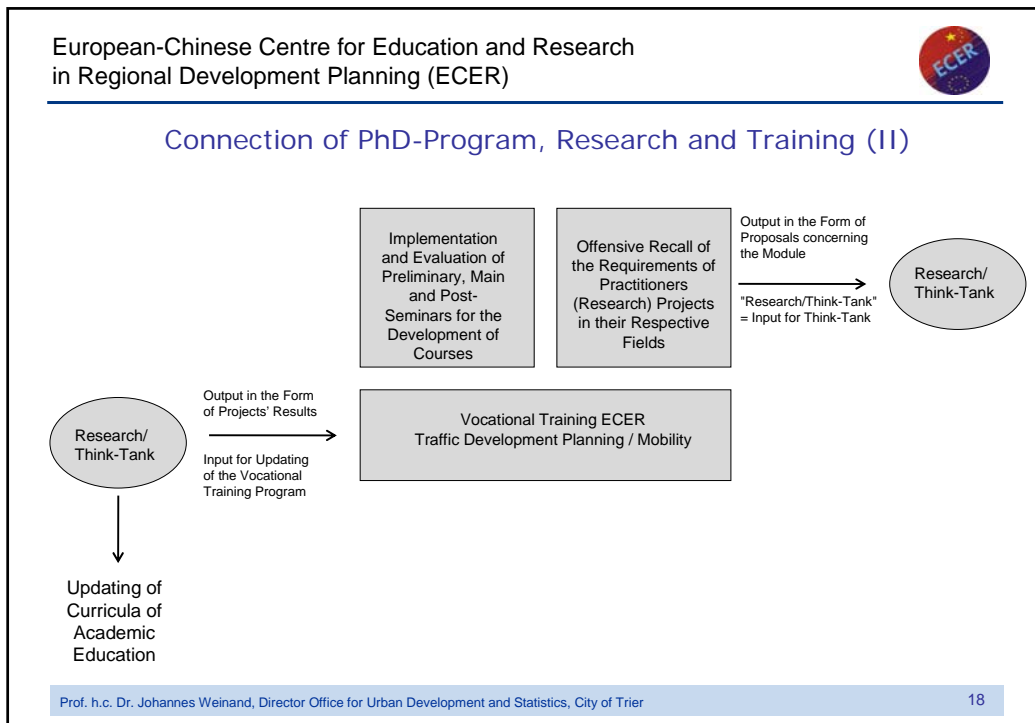


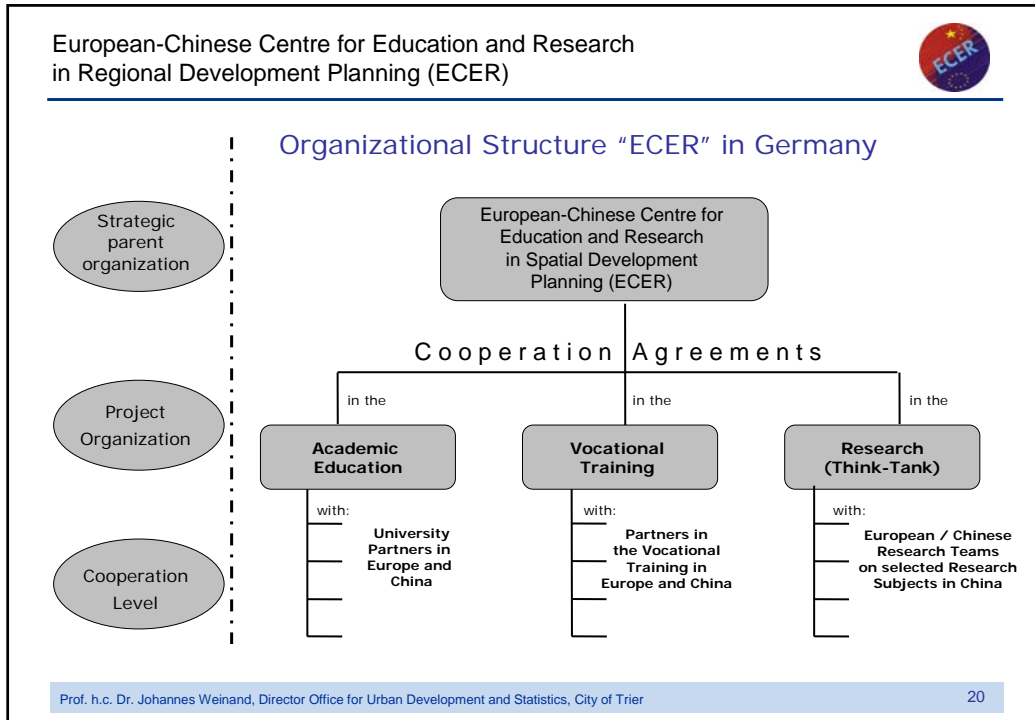
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**Forum “Sustainable Urban and Regional Development”  
on the occasion of EXPO Shanghai  
October 18th, 2010**



a Cooperation Project  
between the City of Trier and  
the Beijing Normal University

**Lecture:**

**Qualification of the best students in the best Chinese university**

Prof. Dr. Yuan JIANG, School of Resources Science & Technology,  
Beijing Normal University





European-Chinese Centre for Education and Research  
in Regional Development Planning (ECER)

Qualification of the best students in the best  
Chinese university

Prof. Dr. Yuan JIANG  
Email: [jiangy@bnu.edu.cn](mailto:jiangy@bnu.edu.cn)



European-Chinese Centre for Education and Research  
in Regional Development Planning (ECER)

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**Ranking of Chinese Universities**


In China there are:

- 38 State-Project-985 universities
- 72 universities directly supervised by MOE
- 105 State-Project-211 universities
- 701 Chinese universities (with a 4-year or more education system)



Beijing Normal University categorized in those 985-universities, ranking at the top 10-20 place in the best Chinese university list, according to the criteria for Chinese university ranking

Prof. Dr. Yuan JIANG

European-Chinese Centre for Education and Research  
in Regional Development Planning (ECER) 

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### BNU's Features

- Research-intensive
- Comprehensive
- One of the oldest Chinese universities
- Education Science and Teacher Education

### BNU's Students

- Full-time: 19543, in which
- Undergraduate: 8529, Graduate: 8999, and Int'l: 2015 (long-term)
- Part-time: 31649, with Int'l: 1351 (short-term)

Prof. Dr. Yuan JIANG

European-Chinese Centre for Education and Research  
in Regional Development Planning (ECER) 

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### Academic Education Programs in the University

- **Regular academic Education Programs:** Bachelor Degree (4 years ), Master Degree (2-3 years) and Doctor Degree (3-4 years)
- **Additional academic Education Programs:**
  - Bachelor Degree in two specialities (5 years, courses + thesis for the Major and courses only for the Minor)
  - Professional Degree (2-3 years):  
There are totally 39 professional categories, 19 among which could be awarded by BNU
  - MBA and MPA (2-3 years)

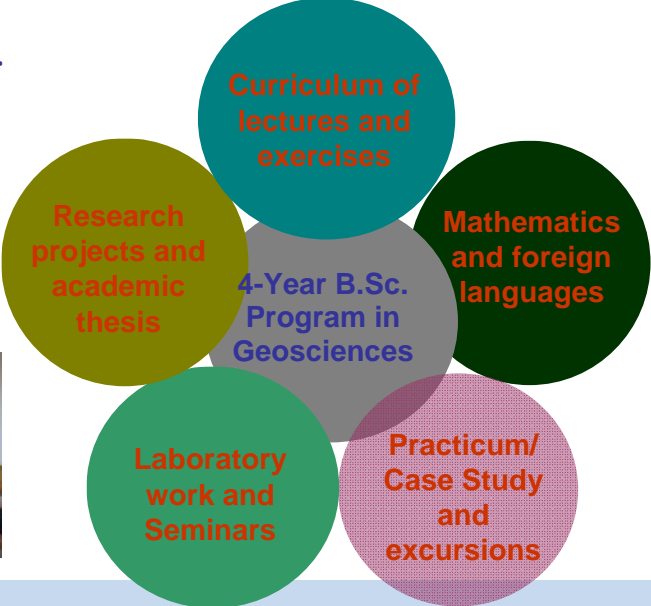


Prof. Dr. Yuan JIANG

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### Four-Year B.Sc. Program in Geosciences



The diagram consists of a central grey circle labeled "4-Year B.Sc. Program in Geosciences" surrounded by five overlapping colored circles, each representing a component of the program:

- Top: Curriculum of lectures and exercises
- Right: Mathematics and foreign languages
- Bottom-right: Practicum/ Case Study and excursions
- Bottom-left: Laboratory work and Seminars
- Left: Research projects and academic thesis



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### 4-Year B.Sc. Program in Resources Science & Technology

- **Compulsory Courses** (that must be taken by all students during their first two to three years.)
  - Common basics:** Mathematics, Physics, Chemistry, Statistics, etc.
  - Computer science:** Principles and Applications, Basic Programming, etc.
  - Economics:** Principle of Economics, Contemporary World Economy and Politics, Resources Economics, etc.
  - Foreign Language:** primarily English, and/or other languages
  - Professional courses :** Plant Resources, Water Resources, Management of Land Resources, Geology and Mineral Resources, Climatic Resources, Geomorphology and Soil Science, Surveying and Cartography, Remote Sensing Principles and Technology, Geographic Information System, General Ecology, Resources and Environmental Law, Urban Planning and Management, etc.

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### 4-Year B.Sc. Program for Resources Science & Technology

- **Optional Courses** (that every student has to choose a certain number of, among the all provided)
  - Professional:** Global Change Ecology, Vegetation Ecology, Urban Ecology, Natural Disasters, Basics of Agricultural Resources, Introduction to Marine Resources, etc.
  - GIS and RS Tech related:** 3S Progress and Spatial Surveying, Digital Image Processing, etc.
  - Risk Management related:** Land Degradation Control, System Modeling and Simulation, Environmental Risk Management in Resources Exploitation & Utilization, etc.

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### 4-Year B.Sc. Program for Resources Science & Technology

#### Thesis Requirement and Research

Students could be involved in **Research Projects** from their third year (starting in the fifth semester) for preparing their required thesis under the guidance of a supervisor.

Students have the opportunity to apply **research grants** for a small research project, conducting the research work in group.

The last two semesters in the students' fourth year are usually set apart mainly for research practises and **thesis**, as well as a few optional courses.

Some of the students' theses are qualified to publish on academic journals.

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### Qualification of the Students from the 4-year B.Sc. Program in BNU

- **Professional Background Knowledge:**
  - Being equivalent to those graduated from the universities in western countries
  - Exceeding the average level in comparison with the students graduated from all over the Chinese universities
- **Ability in Research:**
  - Field observation and investigation, data mining and analysis, 3S-technology, laboratory experiment, etc.
- **Ability in Foreign Language:**
  - Passing the English Test Level 6 (equivalent to TOEFL 80, computer based), TOEFL 80-100, IELTS 6-7, GRE 1100-1300)

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### Graduate Students Accepted in 2009 by the Universities abroad

	USA	UK	DE	JA	AUS	CANA	FR	NE	Others	Σ
BNU	57	12	23	12	5	5	5	4	9	131
RS	3	1	4	2	1	1				12
ES	2		2							4
GR	5	1	2	1	1	2		2	1	15
WS		1	1		2					4
EM	2			1			1			4
GEO & EM	12	3	9	4	4	3	1	2	1	39

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### Students Selection Process of ECER for Study in European Universities

- **Academic Education Module of ECER**

Bachelors: further development of study in China only (contribution from ECER: summer school and short-term practice)

Master's: International Masters Programs in Germany/Europe

Program on going: Integrated Infrastructure Planning

Programs to be developed: Resources and Environment Management  
Public Policies, Economics, Urban Planning,  
Transportation Planning, etc.

Doctors: Selected Chinese students in Germany/Europe/China

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### Students Selection Process of ECER for Further Study in European Universities

- **Students Selection**

1 Colleges and Departments involved in the Program

On Going Program:

- Students are selected from four Colleges: Geography & Remote Sensing, Resources Science & Technology, Disaster Reduction & Emergence Governing, and Environmental Science

Future Programs going to be considered:

- From colleges of: Life Science, Economics, and Social Development & Public Policy

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## Students Selection Process of ECER for Study in European Universities

### 2 Selection Procedure

- **Application qualification:** Those who are going to be the graduates in a 4-year B.Sc. program and interested in ECER project
- **English Test:** Passing the English Test Level 6 (equivalent to TOEFL 80), or score over TOEFL 80, or IELTS 6.0, or APIEL 3.0
- **Assessment:** Each college will make an assessment of the applicants' qualification. The students who are equivalently qualified as a PhD candidate and satisfy the English requirement can directly proceed in the short list.
- **Supervisor:** Each of the selected students must find a supervisor who agrees to guiding his or her study, and then he or she will be qualified as a PhD student under the supervision of the supervisor

Prof. Dr. Yuan JIANG



## Master's Program of Infrastructure Planning

- General Framework of the program
  - The program should be finished in two years, including courses, large case study and master's thesis. The fourth semester is entirely devoted to the master's thesis.
- Mandatory Courses in general:
  - Infrastructure Planning and Economics,  
Statistics and GIS,  
Ecology and Environmental Science,  
Regional and Urban Planning,  
Transportation, and  
Water and Power Supply
- Elective Courses:
  - More than 10 Electives are available at present, including
    - Planning, Management, Transportation, Materials and Energy, as well as other aspects

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### Suggestions for future Education Programs of ECER

- Links between more European universities and Chinese universities for enriching the Master's Program
- Further Development of ECER-Academic Education Module by establishing PhD's Program connected to European universities
- Students exchange network in multi-modules for multi-purposes

Prof. Dr. Yuan JIANG

**Forum “Sustainable Urban and Regional Development”  
on the occasion of EXPO Shanghai  
October 18th, 2010**




a Cooperation Project  
between the City of Trier and  
the Beijing Normal University

**Lecture:  
Implementation of PhD Programs in the Network “ECER”**

Prof. Dr. SHI Peijun, Executive Vice President,  
Beijing Normal University






European-Chinese Centre for Education and Research  
in Regional Development Planning (ECER)

## Implementation of PhD Programs in the Network “ECER”

Prof. SHI Peijun, Executive Vice President, Beijing Normal University

October 18th, 2010, Shanghai

European-Chinese Centre for Education and Research  
in Regional Development Planning (ECER)



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- ◆ ..... 1. Significance of Project Implementation
- ◆ ..... 2. Executive Summary of BNU Project
  - 2.1 Basic Information
  - 2.2 Particular Implementation Measures
  - 2.3 Achievements
- ◆ ..... 3. To Do in the Future

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## 1 Significance of Project Implementation

Over the last decade, China has observed great and historical development in higher education that is now in a development stage of popularization as internationally acknowledged. Especially, since the early and late 1990s when “Project 211 ” and “Project 985” were respectively actuated for implementation, concentrating advantageous strength to energetically promote the construction the world-class universities and high-level university, the level of Chinese higher education has been massively increased and the style of school running has been fundamentally changed. However, while affirming adequately the achievements, we should be always aware of the fierce challenge for construction of high-level university, the construction of high-standard of faculties, as is the major gap between the Chinese universities and the world-class universities. In addition, another major gap is the cultivation level of doctoral candidates. With the concerns from the leaders of the State Council, Ministry of Education and Ministry of Finance actuated in November 2006 “CSC Scholarship Program for Graduate Students”, which is a major action taken to implement the talent strategy, promote internationalization of faculties, increase their innovation capacity and overall qualification, improve the cultivation of doctoral candidates and construction high-level universities.

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### Implementing Universities

Key construction of high-level universities  
(“985” universities and some special  
universities)

### Number of Candidates

Annually, 5,000 persons as per plan, faculty  
and objective purpose.

### Principle for Selection & Assignment

“Three First-class” Principle:


- First-class candidates,
- First-class hosting universities and majors,
- First-class supervisors.

### Major Fields

- Energy, resources, environment, agriculture, manufacturing, information and other key fields
- Life, space, ocean, nano, new materials and other strategic fields
- Human culture and applied social sciences.

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## 2 BNU Project Execution Status (2007~2010)

### 2.1 Basic Information


#### Number of Persons Studying Abroad

During 2007~2010, BNU has in total enrolled **505 persons**, including 228 persons for doctoral program and 227 for joint cultivation.

Year	Doctoral Degree	Joint Cultivation of Doctor Students	Total
2007	22	88	110
2008	63	59	122
2009	76	74	150
2010	67	56	123
<b>Total</b>	<b>228</b>	<b>277</b>	<b>505</b>

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## 2 BNU Project Execution Status (2007~2010)

### 2.1 Basic Information


#### Hosting Foreign Countries

Government-sponsored graduate students of BNU have been assigned respectively to 23 countries, including 232 students to USA, sharing **47.6% of the total**.

Country	2007	2008	2009	2010	Total	%
<b>USA</b>	<b>53</b>	<b>51</b>	<b>75</b>	<b>53</b>	<b>232</b>	<b>47.6</b>
<b>Germany</b>	<b>14</b>	<b>18</b>	<b>29</b>	<b>10</b>	<b>71</b>	<b>14.6</b>
<b>Japan</b>	<b>3</b>	<b>9</b>	<b>10</b>	<b>9</b>	<b>31</b>	<b>6.4</b>
<b>UK</b>	<b>6</b>	<b>6</b>	<b>9</b>	<b>7</b>	<b>28</b>	<b>5.7</b>
<b>France</b>	<b>11</b>	<b>6</b>	<b>4</b>	<b>4</b>	<b>25</b>	<b>5.1</b>
<b>Canada</b>	<b>5</b>	<b>11</b>	<b>5</b>	<b>5</b>	<b>26</b>	<b>5.3</b>
<b>Australia</b>	<b>3</b>	<b>5</b>	<b>2</b>	<b>5</b>	<b>15</b>	<b>3.1</b>

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## 2 BNU Project Execution Status (2007~2010)

### 2.1 Basic Information

<div style="background-color: #ffffcc; padding: 5px; margin-bottom: 10px; text-align: center; color: purple;"> <b>Hosting Overseas Universities</b> </div> <p>Government-sponsored graduate students assigned by BNU to World Top 150 shares about <b>80%</b>, including such world top universities as Harvard University, Yale University, Oxford University and Cambridge University.</p>	<div style="background-color: #ffffcc; padding: 5px; margin-bottom: 10px; text-align: center; color: purple;"> <b>Majors</b> </div> <p><b>Enrollment for national key disciplines shares 75%</b>, focusing on the characteristic and advantageous disciplines of BNU, such as education, psychology, geology, mathematics, biology, environmental science and engineering.</p>
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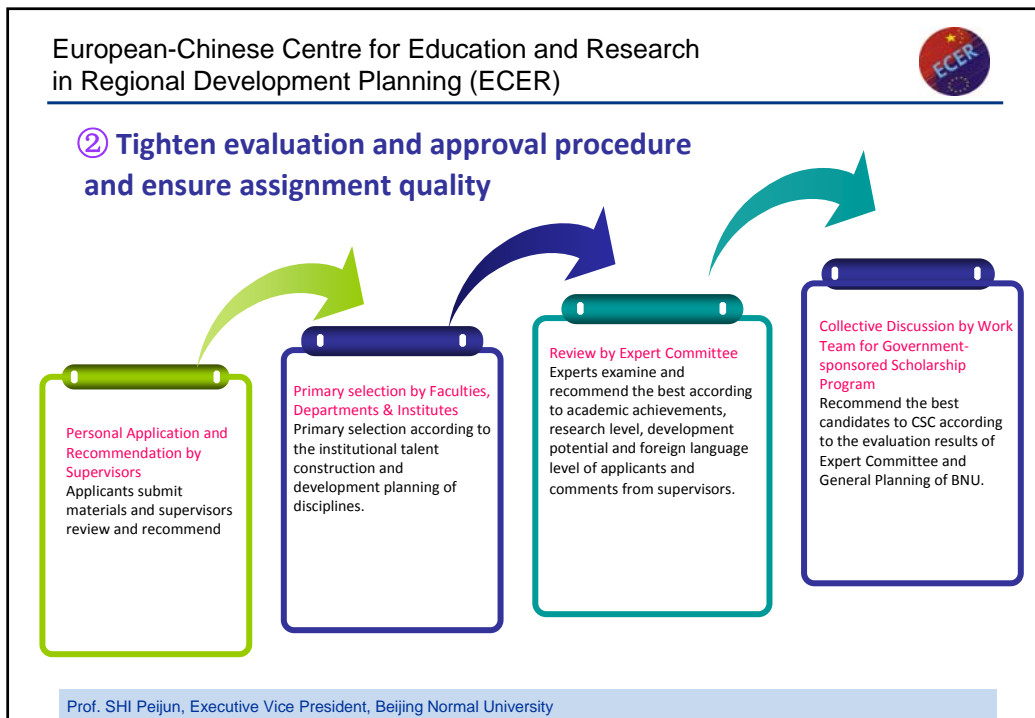
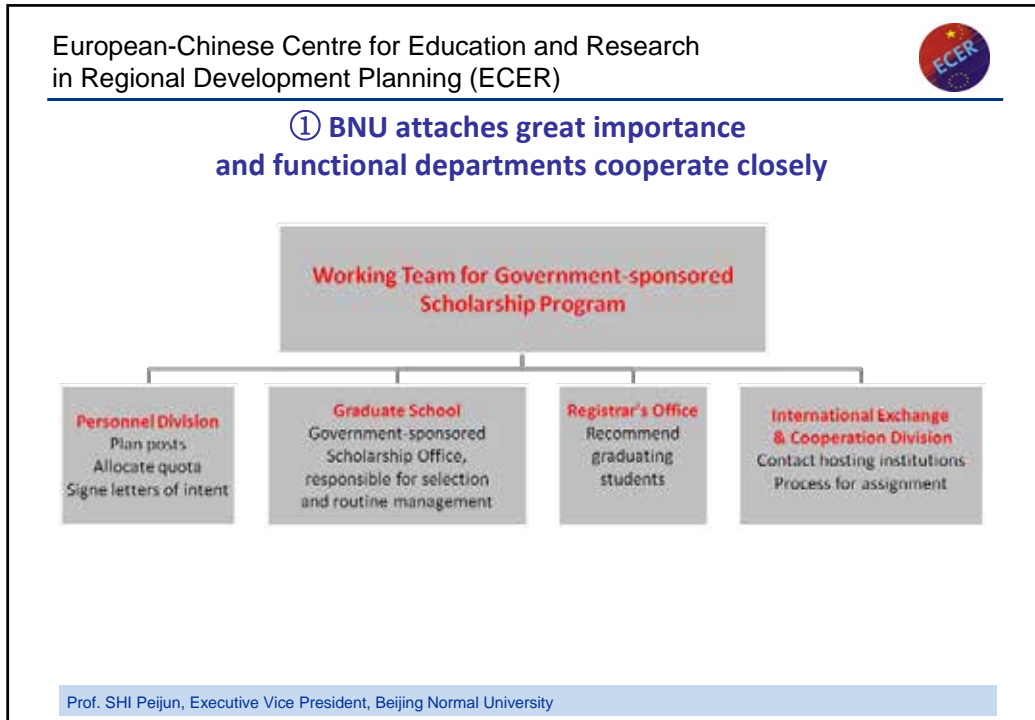
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## 2.2 Particular Implementation Measures

<div style="background-color: #add8e6; padding: 10px; text-align: center; color: black;">                 Close cooperation Quality assurance Active services Practicability             </div>	<ol style="list-style-type: none"> <li style="background-color: #000080; color: white; padding: 5px; margin-bottom: 5px;">1. BNU attaches great importance and functional departments cooperate closely</li> <li style="background-color: #cccccc; padding: 5px; margin-bottom: 5px;">2. Tighten evaluation and approval procedure and ensure assignment quality</li> <li style="background-color: #000080; color: white; padding: 5px; margin-bottom: 5px;">3. Actively organize propaganda and provide proper information service</li> <li style="background-color: #cccccc; padding: 5px; margin-bottom: 5px;">4. Stress on pre-departure education and enhance assignment guidance</li> <li style="background-color: #000080; color: white; padding: 5px; margin-bottom: 5px;">5. Implement the cooperation agreement and develop assignment channel</li> <li style="background-color: #cccccc; padding: 5px;">6. Care for process of overseas study and monitor education quality</li> </ol>
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**③ Actively organize propaganda and provide proper information service**

Program Presentation	Special Website	Pre-application System	Achievement Show
<p>BNU annually holds the presentation for Government-sponsored Scholarship Program and invited in 2010 the executive leaders of CSC for special reporting to students.</p>	<p>BNU sets up a special website for Government-sponsored Scholarship Program to timely release information of different scholarship schemes and information of enrollment by universities in cooperation with BNU.</p>	<p>BNU has developed the pre-application system for Government-sponsored Scholarship Program to understand in real time the progress and problems of students in applying for hosting institutions and timely provide applicants with necessary assistance.</p>	<p>By organizing achievement shows and inviting the returned postgraduates for presentation, BNU has played an excellent role in propaganda and education, demonstration and guidance.</p>

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**④ 4. Stress on pre-departure education and enhance assignment guidance**

<p>1</p> <p>BNU annually holds the special pre-department education meeting to carry out ideological education over students for overseas study and emphasize the great signification of "Government-sponsored Scholarship Program" and historical responsibilities.</p>	<p>2</p> <p>In order to help the government-sponsored students in getting the visa, adapting at the earliest to overseas study and living environment and enhancing psychological adaptation, BNU invited China Services Center for Scholarly Exchange to explain the national policies for government-sponsored scholarship for overseas study, visa policies of major countries, overseas safety, and so on.</p>
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### ⑤ Implement the cooperation agreement and develop assignment channel

In international exchange and cooperation, BNU attaches great importance to the Government-sponsored Scholarship Program. According to the overall planning of discipline development, BNU selects and assigns, as per plan, purpose and institution, excellent students for overseas study at foreign first-class universities. For instance, BNU has signed an agreement with German University of Stuttgart: University of Stuttgart enrolls annually 10 graduating students from BNU for doctoral program of regional planning.

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### ⑥ Care for process of overseas study and monitor education quality


#### Care for Process of Overseas Study

- During their study overseas, schools of BNU keeps in regular contact with the government-sponsored student, cares for their status of study and living and requires them to regularly report their respective domestic supervisors and concerned departments about their study and research (at least once every month).
- On every major public holiday, through e-mail system, BNU sends comfort letters to those studying overseas, encouraging them to treasure the opportunity for study and make contributions to the motherland, while extending the care and wishes to.

#### Monitor Education Quality

- BNU attaches special importance to the quality supervision over the joint education of doctoral candidates, not only requiring them to present the detailed report of overseas study and deliver presentations upon returning, but also demanding the domestic and overseas supervisors for objective evaluation over the effective of joint education.
- Upon completing their thesis defense, the defense information, research achievement and employment status of the doctoral candidates under the joint education scheme shall be filed with the Graduate School in written forms.


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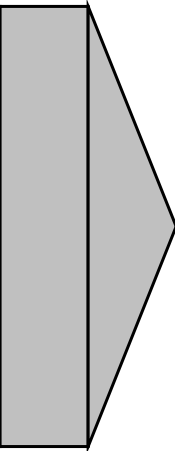
### 2.3 Primary Achievements

- ① Academic level of government-sponsored postgraduates obviously increased
- ② A huge number of first-hand research materials collected
- ③ Rich research achievements made
- ④ Important contributions made for international academic cooperation and exchange
- ⑤ High-level talents with international visions cultivated

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### ① Academic level of government-sponsored postgraduates obviously increased

<ul style="list-style-type: none"><li>•Academic vision widened</li><li>• The front contacted for the academic development of concerned disciplines</li><li>•Research methods updated</li><li>•Research concepts expanded</li><li>•Relatively strong consciousness of comparison and capacity for independent research obtained.</li></ul>		<p><b>Academic anxiety of undergraduates and postgraduates at BNU massive increased, as plays an active role in cultivating excellent style of learning.</b></p>
<ul style="list-style-type: none"><li>•Level of foreign languages massively increased and capacity for international exchange obviously enhanced.</li></ul>		

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### ② A huge number of first-hand research materials collected

- Government-sponsored postgraduates have more chances to acquire the **first-hand references overseas** and collect a huge quantity of treasured academic materials, as is of great significance for their future research work upon returning to China.

Dunhuang Scriptures of Li Sheng-duo

While studying in Japan, Chen Tao from School of History, BNU discovered the original Dunhuang Scriptures collected by Li Sheng-duo in the late Qing Dynasty. The scriptures were lost and taken to overseas in the 1930s and have been known as the “Last Dunhuang Treasures” in the Chinese academic circle, which contain rich contents and show great value and have been always concerned by the international academic circle. Chen Tao has been granted with the first right for publication of these scriptures and will gradually introduce the relevant information to the Chinese academic circle for the benefit of the Chinese scholars to undertake academic research. Chen Tao has introduced about the relevant information on such periodicals as Study on History of Historiography, China Cultural Heritage News, Journal of Beijing Normal University (Social Sciences), Journal of national Museum of Chinese History and Journal of Dunhuang Studies and has also undertaken relevant research work.

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### ③ Rich research achievements made


- As per incomplete statistics, postgraduates BNU under Government-sponsored Scholarship Program have in total published over **700** academic theses, of which over **200** have been cited by such three major index systems as SCI.
- Some of the students published academic theses with important influence on the **top journals** of the respective disciplines, with a number of new academic stars rising, such as Zhao Rongkuo and Cui Xiaohua from Physics Department, who have published academic theses on PHYSICAL REVIEW LETTERS.




姓名：张宗周  
 性别：男  
 出生年月：1980年10月  
 籍贯：山东烟台  
 学历：博士  
 现任职：北京理工大学  
 研究方向：物理




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**④ Important contributions made for international academic cooperation and exchange**

Promote Exchange and disseminate culture	Enhance mutual visit and strengthen cooperation	Share resources and take active participation
<ul style="list-style-type: none"><li>■ Adequately acquainted with some foreign research institutions and relevant scholars of respective disciplines and establish excellent academic relationships as has laid a certain foundation for internationalization of disciplines</li><li>■ By attending the academic conferences, propagate the relevant disciplines of BNU so that the foreign scholars can have a better understanding about the connotation and research status of China in the disciplines</li></ul>	<ul style="list-style-type: none"><li>■ Through the liaison by the government-sponsored postgraduates, several foreign experts were invited for visits to BNU, of which have explicitly indicated not only to accept students of BNU for overseas study but also send their students for joint-education at BNU.</li><li>■ The government-sponsored postgraduates have also helped in undertaking creative cooperation in some disciplines</li></ul>	<ul style="list-style-type: none"><li>■ While making use of and introducing foreign quality academic resources, the government-sponsored postgraduates have also made their respective contributions for Chinese academic resources to go into the world.</li></ul>



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**⑤ High-level talents with international visions cultivated**

As by July of 2010, BNU has assigned **116** government-sponsored postgraduate students (all for doctoral programs of joint-education ), of which over **80** undertake the posts of teaching and research at universities and research institutions, sharing about **70%** and of which 18 remain for teaching at BNU.

A number of high-level talents with international visions have been cultivated universities and scientific research institutions.

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## To Do in the Future

- We will extensively cooperate with other top universities in the ECER network.

Beijing Jiaotong University  
East China Normal University  
Xiamen University  
Sun Yat-sen University  
Wuhan University  
Yunnan University and so on.

RWTH Aachen  
FU Berlin  
University of Kaiserslautern  
University of Luxemburg  
University of Stuttgart  
University of Trier  
ETH Zürich and other

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# Thanks !

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**Forum “Sustainable Urban and Regional Development”  
on the occasion of EXPO Shanghai  
October 18th, 2010**



a Cooperation Project  
between the City of Trier and  
the Beijing Normal University

**Lecture:  
Module II – Professional Training**

Pablo Gándara,  
Senior Advisor to the City of Trier






European-Chinese Centre for Education and Research  
in Regional Development Planning (ECER)

## Module II – Professional Training

Shanghai, 18. October 2010

Pablo Gándara,  
Senior Advisor to the City of Trier



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### Today's roadmap

1. Some basics about Europe
2. The ECER training approach
  - Structure
  - Examples of seminars
3. The ECER training topics
  - 5 topics
  - 5 seminars for each topic
4. Marketing the target groups
5. Outlook


2

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**The European Union: 501 million people – 27 countries**




Member states of the European Union  
Candidate countries

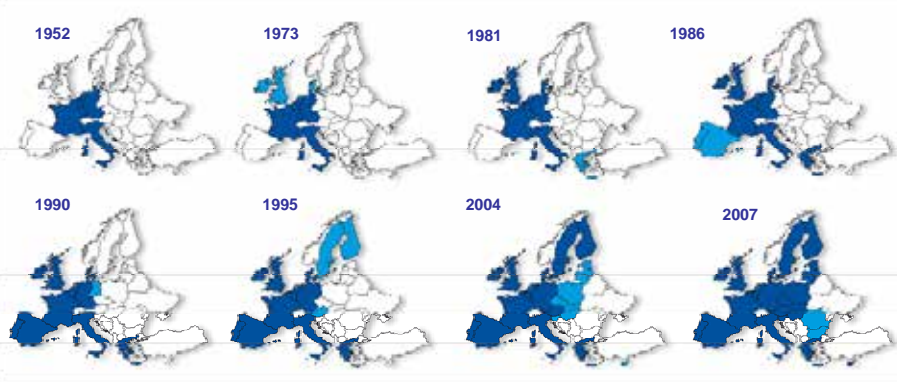
Pablo Gándara, Senior Advisor to the City of Trier

3

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**The EU is the result of eight enlargements including economically heterogeneous countries**

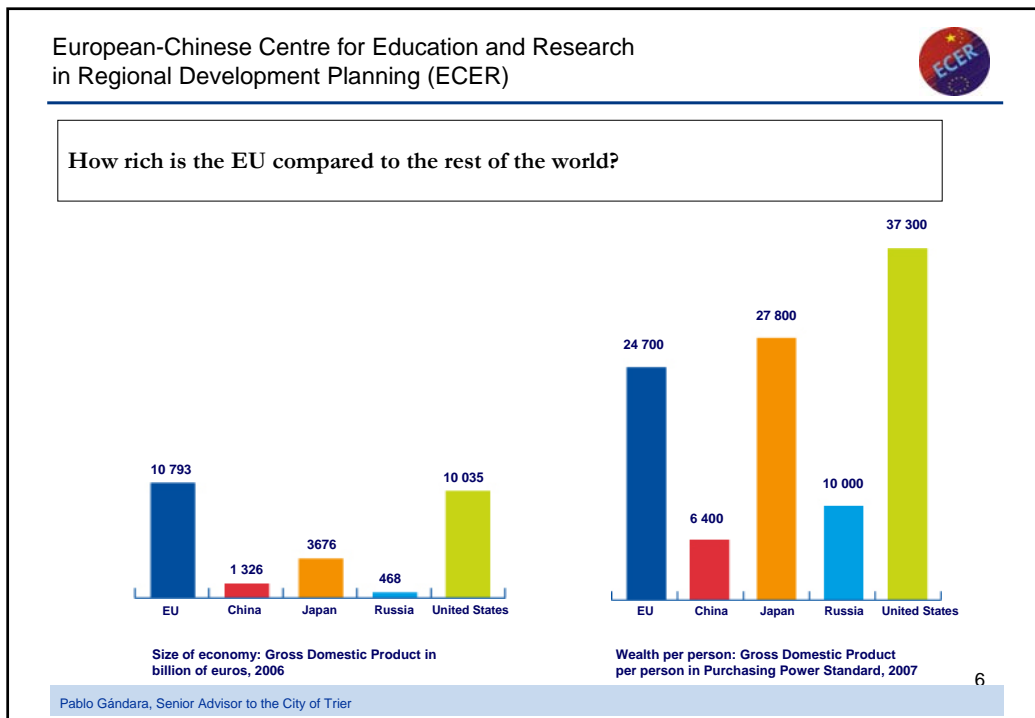
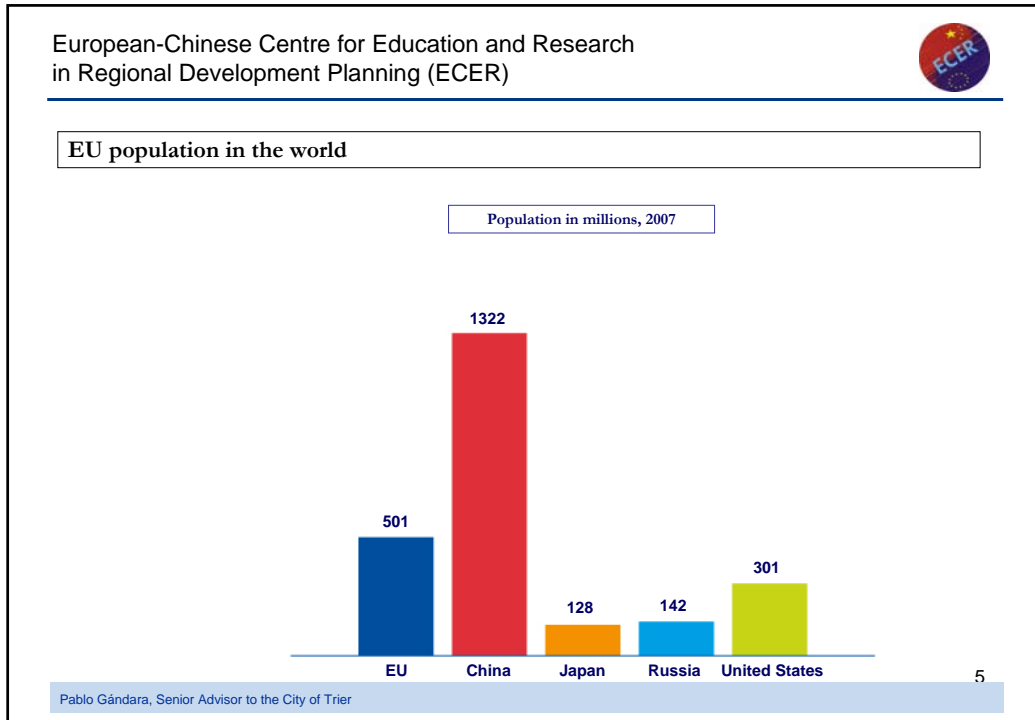


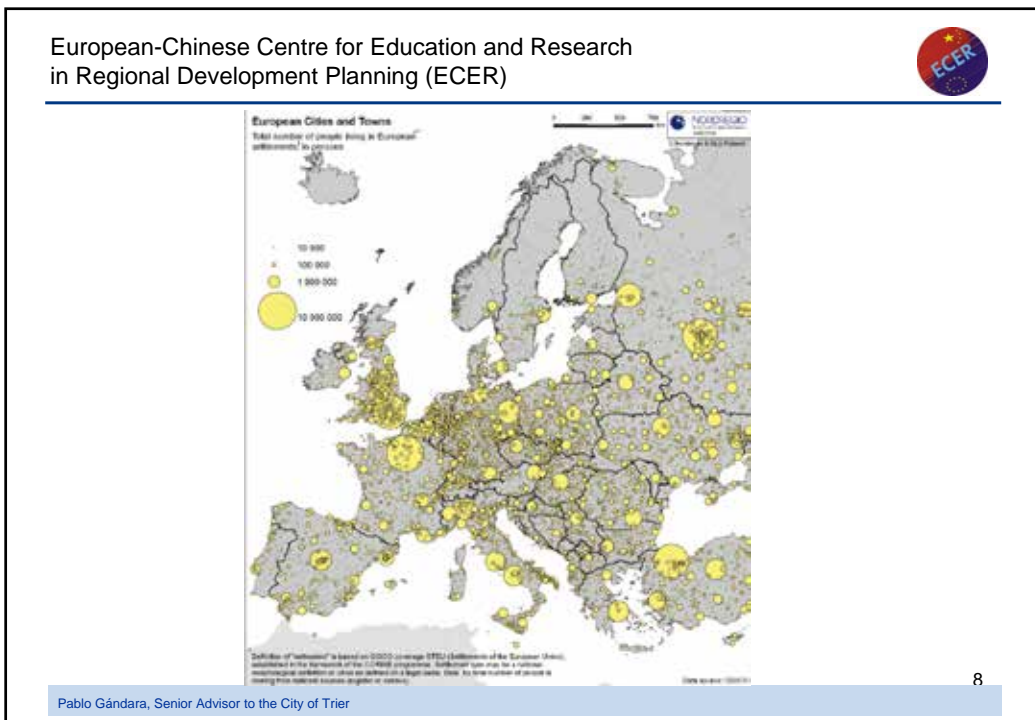
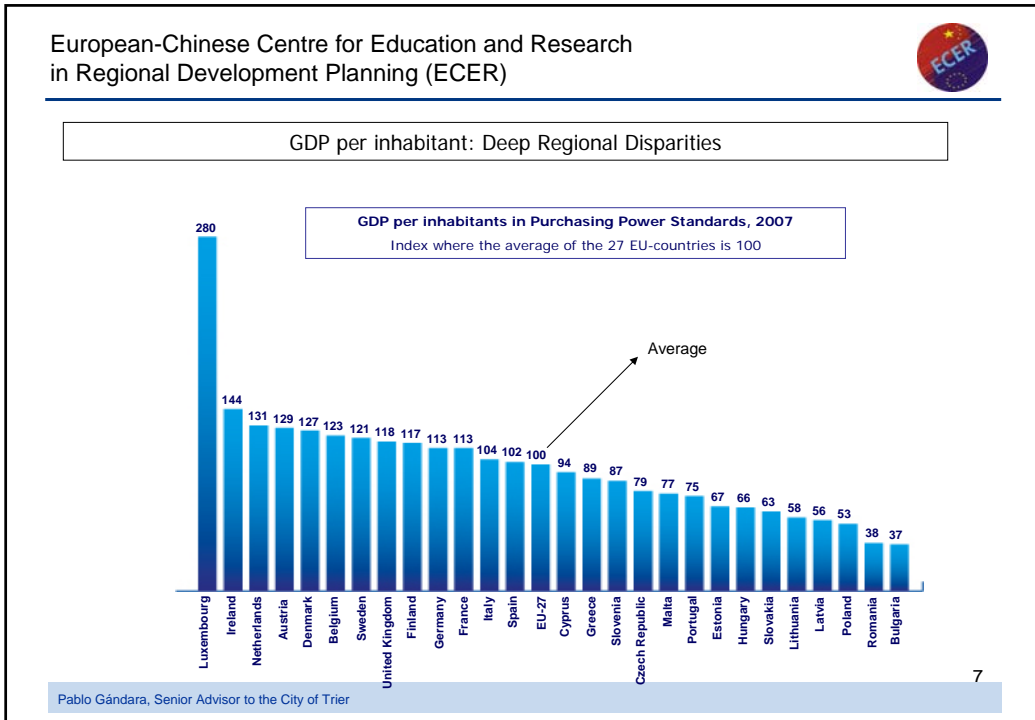
1952 1973 1981 1986

1990 1995 2004 2007


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**Solidarity in practice: the EU cohesion policy**

2007-2013: 347 billion euro invested for infrastructure, business, environment and training of workers for less well-off regions or citizens

- Regional fund
- Social fund
- Cohesion fund




■ Convergence objective: regions with GDP per capita under 75% of the EU average. 81.5% of the funds are spent on this objective.  
■ Regional competitiveness and employment objective.


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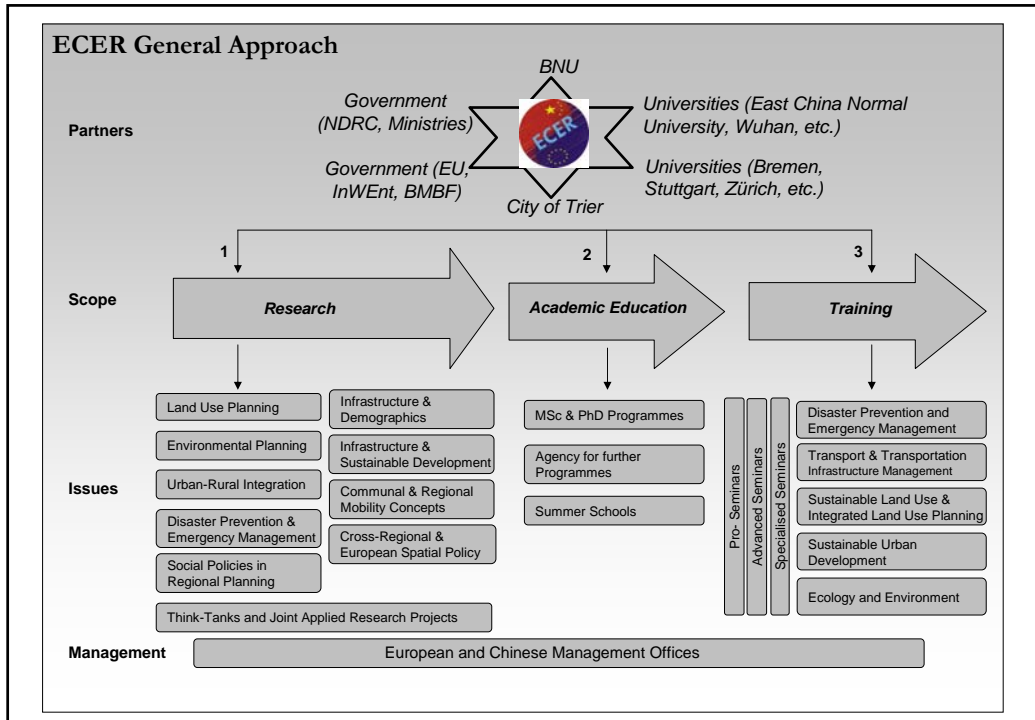
**The EU institutions and their role on regional policy**



European Council (summit)  
 European Parliament    Council of Ministers (Council of the EU)    European Commission  
 Court of Justice    Court of Auditors    Economic and Social Committee    Committee of the Regions  
 European Investment Bank    Agencies    European Central Bank

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**The ECER training approach**

- The ECER project aims at training Chinese civil servants, academics and private sector experts in a wide range of regional development issues both in China and Europe.
- In order to attract qualified candidates, the programme is based on a multi-stage approach, including introductory, advanced and specialised seminars.







### 1. Introductory seminars (pre-seminars „PS“)

- To be held in China within 3-5 days. 30-50 participants
- Primarily, these courses are aimed at attracting a large number of candidates for the larger advanced seminars to be run in Europe.
- Nevertheless, the pro-seminars are also ideal for wider communication about ECER activities.
- On the contents side, the pro-seminars will include the basic issues of the training module and will allow graduates to understand the complexity of regional and transportation planning in China and Europe.
- The contents will be thought by a team of European lecturers who have an international reputation in training the corresponding topics.
- In order to ensure a wide public awareness of ECER activities in China, the pro-seminars will be advertised across related ministries, research institutes and companies.

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### 2. Advanced seminars

- To be held in Europe within 7-14 days. 15-20 participants
- The courses are aimed at providing Chinese regional and transportation planners with best practices, insights into European experiences to similar challenges in China.
- Interactive teaching modes will allow participants to bring their own expertise into the training course.
- At the start of the training programme, a one-day introductory session will take place in China.
- The advanced seminars will encompass cooperation with key related institutions in Europe, including ministries, research centers and companies.
- Once back in China, graduates from ECER advanced seminars are supposed to act as multipliers of ECER training contents, allowing a wider impact into Chinese research and policy-making community (train-the-trainer methodology).

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## 2. Advanced seminars – an example


- Six European countries involved
- One introductory day in China
- Introductory sessions in Germany
- Field visits in France, Luxembourg, Belgium and Poland
- Cultural programme




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### Example: Programme Outline “Advanced Seminar Transportation”

Day	General Issues	Location
Saturday	Arrival - Welcoming	Frankfurt - Trier
Sunday	Cultural programme in Trier	Trier
Monday	Opening, Introduction, Lectures (2)	Trier
Tuesday	Lectures on Key Issues of Transportation	Trier
Wednesday	Trip to Brussels – Sightseeing	Brussels (by train)
Thursday	Lecture: Transportation in Europe 1 – EU Institutions	Brussels
Friday	Lecture: Transportation in Europe 2 – Lobbies	Brussels - Trier (by train)
Saturday	Sightseeing in Trier	Trier
Sunday	Trip to Paris – Sightseeing	Trier - Paris (by train)
Monday	Field Visit: Airport Transportation Hub GDG	Paris
Tuesday	Field Visit: Public Transportation (STIF, IDF)	Paris - Stuttgart (by train)
Wednesday	Field Visit: Supply Chains and Logistics (Dornier)	Stuttgart
Thursday	Field Visit: Traffic Control Centre & Mercedes Benz	Stuttgart -Trier (by bus)
Friday	Field Visit: Luxembourg. Closing session	Trier - Luxembourg
Saturday	Departure to Frankfurt	Trier - Frankfurt

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### ECER Training Participants 2009

- 2 Advanced seminars 2009:
  - PS 1: Catastrophe Prevention and Disaster Management (Trier, 3-17 May 2009)
    - 15 Chinese experts from 11 provinces
    - 50 % with an academic background, 50 % practitioners (Bureau of Civil Affairs)
    - Visited 3 countries (Germany, Luxembourg, France) and 6 cities (Hamburg, Trier)
  - PS 2: Transportation Planning (Trier, 9-20 November 2009)
    - 9 participants from 4 provinces
    - 50 % with an academic background, 50 % practitioners (Railway Bureau)
    - Visited 4 countries and 8 cities (including Paris and Brussels)
- 2 delegations from NDRC supported by GTZ visited ECER in Trier
- 1 specialized seminar in September 2010
  - 30 participants
  - 4 European experts from top level (EFA, FU-Berlin, THW)

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### Some impressions



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### 3. Specialised seminars (post-seminars)

- To be held in China within 3-5 days. 15-20 participants
- The specialised seminars will be devoted to both, graduates from the advanced seminars and to experts from relevant topics who did not pursue the advanced seminar in Europe.
- By doing so, these courses follow two goals: first, they provide deeper contents of specific issues that they selected as particularly interesting for further training. Second, these courses allow a wider specialised audience in China to access to training contents which are relevant for its day-to-day work.
- This dissemination function of ECER post-seminars is a unique feature in its training concept and will allow particularly decision-makers to benefit from ECER expertise.
- In order to set the topics for specialised training, ECER will provide a list of topics to participants during the introductory and advanced courses in China and Europe. By this means, ECER will ensure that the specialised seminars will match the market demand.

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### Total number of training events

- The training programme is conceived for five years and will contain five phases.
- According to this plan, each phase will deal with five training topics, containing a total of 25 seminars to be carried out partly in China and in Europe:
  - 5 introductory seminars in China for an audience of 30/50 participants per event
  - 5 advanced seminars in Europe for an audience of 15 participants per event
  - 15 seminars in China for an audience of 30/50 participants per event
- Based on these estimations, each ECER training phase will then have a total of 675/1.075 participants, delivering training for 3.375/5.375 experts within five years.

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### The training topics

- As of today, the training programme covers five areas:
  1. Disaster Control and Prevention
  2. Decentralization, Concentration or Decentralized Concentration — Particularly in Terms of Land Use and Water Management
  3. Transport Development Planning: a Central Basis for a Sustainable Urban- and Regional Development
  4. Trans-Eurasian Transport Corridors
  5. Environment- and Resource Management
- ECER has developed a detailed training curriculum for each area, containing:
  - 1 introductory seminar (pro-seminar)
  - 1 advanced seminar, and
  - 3 specialized seminars (post-seminars)

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### Topic 3 in detail: Transport Development Planning - a Central Basis for a Sustainable Urban- and Regional Development

#### Objective

- To improve transportation planning system through showing best practices and shortcomings in Europe.
- To involve different civil society groups (researchers, policy makers, private sector)
- To train high-ranking officials from all institutional levels in China

#### Description of work (deliverable seminars)

1. One pro-seminar on *Transportation Planning and Transportation Infrastructure Development* to be held in China
2. One advanced seminar on *Transportation Planning* to be held in Europe.
3. One specialised seminar on *Intermodality* to be held in China.
4. One specialised seminar on *Intelligent Transportation Systems* to be held in China.
5. One specialised seminar on *Sustainable Transportation* to be held in China.

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## Marketing the target groups

1. Who?
  - Experts of the National Development and Reform Commission (NDRC) at national, provincial and local level
  - Researchers from institutes and universities
  - Private regional and transportation planning offices
  - Also European experts should participate in these training programmes
2. How?
  - Persuading ECER target groups of the need for continuous professional training and to make them aware of the training programmes offered by ECER.
  - Active dissemination of training activities to a broader, non-specialist audience in Europe and China through newsletters, website, press releases, media appearances.
  - Here for it would be necessary to intensify the name knowledge (branding) of ECER across selected Chinese provinces and cities. Strong commitment of Chinese partners (universities, government & private sector).
  - Issue-Linkages with other ECER modules (academic education & research).
  - Importance of ECER Think-Tank
  - Last but not least, a list of renowned supporters and promotion partners should be developed in order to ensure a wide support across key decision-makers in China and Europe.

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XieXie

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ECER Senior Advisor to the City of Trier  
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**Forum “Sustainable Urban and Regional Development“  
on the occasion of EXPO Shanghai  
October 18th, 2010**



a Cooperation Project  
between the City of Trier and  
the Beijing Normal University

**Lecture:  
Research on Regional Planning and Industry Integration  
in Yangtze River Delta**





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## 长三角区域规划及其产业整合问题研究

Research on Regional Planning and Industry Integration in Yangtze River Delta

谷人旭 教授  
Prof. Dr. GU Renxu

华东师范大学资源与环境科学学院, 上海, 200062  
Vice Dean of School of Resource and Environment, East China Normal University

European-Chinese Centre for Education and Research  
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### 长江三角洲区域范围

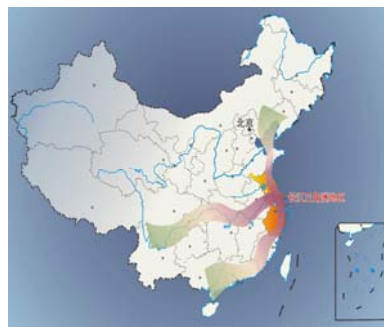


Name of referent



## 国家赋予长三角地区的期待

- 1、我国实践科学发展观的**示范区**、  
    **改革创新的引领区**、  
    **现代化建设的先行区**、  
    **国际化发展的先导区**。
- 2、在壮大我国**东部地区**经济实力、推动  
    **长江流域**快速崛起、进而带动**中西部地区**  
    加快发展、促进**全国区域协调发展**、  
    引领我国全面参加**全球竞争**的进程中，  
    发挥核心作用。



Name of referent



## 长三角空间规划部署：一核、五副、九带

- 发展核心
- 沪宁和沪杭甬沿线发展带
- 沿江发展带
- 沿湾发展带
- 沿海发展带
- 宁湖杭沿线发展带
- 沿湖发展带
- 沿东陇海线发展带
- 沿运河发展带
- 沿温丽金衢线发展带



Name of referent



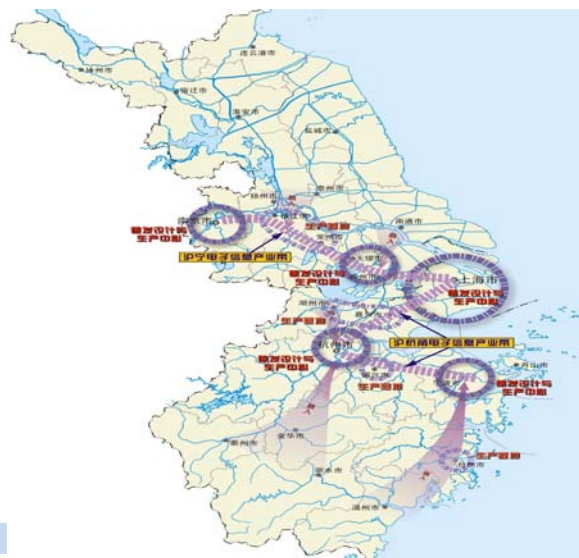
## 长三角区域产业功能定位

- 1、依托各区域/城镇产业功能定位，实现区域产业一体化发展，**带动并辐射**周边地区、以及沿海·沿江乃至全国新一轮的**产业转型升级**。
- 2、**一核(上海)**：重点发展金融、航运等服务业，成为服务全国、面向国际的现代服务业中心。
- 3、**五副**：**南京** 重点发展现代物流、科技、文化旅游等服务业，成为长三角地区**北翼**的现代服务业中心；  
**杭州** 重点发展文化创意、旅游休闲、电子商务等服务业，成为长三角地区**南翼**的现代服务业中心；  
**苏州** 重点发展现代物流、科技服务、商务会展、旅游休闲等服务业；  
**无锡** 重点发展创意设计、服务外包等服务业；  
**宁波** 重点发展现代物流、商务会展等服务业。

Name of referent



## 长三角区域电子信息产业布局



Name of referent







## 促进区域产业整合的理论思考

### 1、区域整合的顺序性：

适应阶段→

分配阶段→

社会整合→

政治整合

### 2、区域整合的驱动力：

政府力量

企业力量

Name of referent



## 长三角地区区域产业整合的实践

### 1、整合推动力：

初期：自上而下/中央政府（外部力量）

迄今：自下而上/地方政府 + 市场（内部力量）

今后：自上而下 + 自下而上

### 2、整合的领域：

初期：基础设施


目前：能源、环保、大交通、科技、养老、社保

### 3、今后的期待：

政府力量 + 市场力量(NGO) (大政府、小市场)

Name of referent

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时间	驱动力	标志性事件
1982	中央政府	提出“以上海为中心建立长三角经济圈”
1885	中央政府	国家经贸委牵头成立“上海经济区”，自行车行业的跨区域横向联合
1992	地方政府	由上海等14个市经协委发起成立“长三角十四城市经协委主任联席会”
1993	地方政府	上海提出“长三角大都市圈发展构想”
1998	地方政府	长三角经济协调会第1次会议在扬州举行，“建设成为具有高度竞争力的经济共同体”，
1999	地方政府	长三角经济协调会第2次会议在杭州举行，主题为“生态、文化、经济”
2001	地方政府	长三角经济协调会第3次会议在绍兴市举行，主题为“共建成大旅游圈” 江、浙、沪省市长座谈会
2002	市场	春兰集团把决策和投资中心移师上海，建设“第二总部”
	地方政府	上海举行“长三角区域经济互动发展”研讨会，主题是“长三角一体化”
2003	地方政府	经济协调会第4次会议在南京市举行，主题为“世博”经济与长江三角洲经济联动发展；江、浙电子政务信息和信用信息共享。
	市场+政府	签订“在投资准入、市场秩序、信用信息方面的一体化框架”；人才开发、道路运输、大学生学分互认、联合办学，相互开放毕业生就业市场
2004	市场	杉杉、雅戈尔、均瑶、埃力生、正泰等企业入驻设立第二总部
	中央政府	国家发改委启动“长三角都市圈区域规划”；交通部牵头制订《长三角地区现代化公路、水路交通规划纲要》
	地方政府	经济协调会第5次会议在上海举行，主题：完善充实常设机构；设立专项资金；修改长三角协调会章程等，签署相关协议
2005	市场+政府	成立旅游市场促进会，苏浙沪旅游促进会宣言、长三角旅游城市合作宣言、江浙沪中小企业合作和发展协议书
	地方政府	经济协调会第6次会议于2005年在南通召开，主题为“促进区域物流一体化，提升长三角综合竞争力”，
2006	地方政府	上海轮胎橡胶集团在江苏如皋建立分厂
	市场+政府	城市经济协调会第7次会议在泰州举行，主题为“研究区域发展规划提升长三角国际竞争力”，
2007	市场+政府	长三角16市港口会商加快港口一体化进程
	地方政府	城市经济协调会第8次会议在常州举行，主题为“推进长三角地区协调发展”，
2009	地方政府	城市经济协调会第9次会议在湖州举行，主题为“贯彻国务院指导意见精神，共同应对金融危机”，
	市场+政府	扬子江药业集团有限公司、上海百联集团、阿里巴巴集团、江苏综艺集团负责人应邀出席城市经济协调会第9次会议
2010	地方政府	城市经济协调会第10次会议在嘉兴举行，成员由16扩容为22，主题“用好世博机遇、放大世博效应，推进长三角城市群科学发展”。

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<h2>长三角区域产业发展中的问题</h2>		
<ol style="list-style-type: none"> <li>1、定位雷同</li> <li>2、产业趋同</li> <li>3、利益博弈</li> <li>4、行政壁垒</li> </ol>		
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## 长三角地区产业分工的空间递进

- 1、(核心)上海与江、浙之间的产业分工
- 2、省区内部的区域产业分工
- 3、城市之间的产业分工

Name of referent



## “条条”“块块”及其相互间的协调与整合

### 1、块块协调：

—核六带 → —核九带

### 2、条条协调：

- 多头对上
- 多条对下

例如：长三角地区物联网产业的“异地同质竞争”

上海市推进物联网产业发展行动方案（2010-2012年）  
江苏省2009-2012年物联网产业发展规划纲要

Name of referent





## 促进长三角产业链与价值链的网络化构建

- 区域产业链与产业集群协调整合
- 企业空间组织与价值链的协调整合
- 区域产业发展的基础设施协调整合

Name of referent



## 讨论与思考

- 1、区域产业整合中的规划及其作用
- 2、区域产业整合中的政府与企业及其定位
- 3、产业转型升级中的传统产业与新兴产业
- 4、区域产业（经济）发展与社会、生态环境
- 5、长三角产业整合中的国内企业与跨国公司

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谢谢！

THANK YOU

Name of referent

**Forum “Sustainable Urban and Regional Development“  
on the occasion of EXPO Shanghai  
October 18th, 2010**



a Cooperation Project  
between the City of Trier and  
the Beijing Normal University

**Lecture:**

**Traffic Development Planning:**

**Central Basis for Sustainable Urban and Regional Development**

Dr. Christoph Zimmer  
Manager, BPV Consult GmbH, Koblenz






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## Traffic development planning

A central basis for a sustainable city and regional development

**Dr. Christoph Zimmer**  
Partner and Managing Director of BPV Consult GmbH (Koblenz/Hamburg/Erfurt)

European-Chinese Centre for Education and Research  
in Regional Development Planning (ECER)



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### Overview

1. Personal introduction
2. Sustainable traffic development
3. Overall background (Germany)
4. Planning of infrastructure and transportation supply
5. Long term modal shift in metropolitan areas (Munich)
6. SUN – Active modal shift in the Hamburg area
7. Conclusions for spatial development
8. Recommendations for education and research

Dr. Christoph Zimmer



## 1. Personal introduction (1/2)

- Born in 1961, married, 1 child
- 1988: Dipl.-Ing. Civil engineering, traffic development planning
- 1991: Dipl.-Wirt.Ing. Industrial engineering and economics
- 1995: Dr.-Ing. Forecasting of air cargo in the European market
- Since 1988: Consultant on economic assessment and optimization of transport projects (air, road, sea, rail) world wide
- Professional level: According to international standards (e.g. World Bank, EBRD, EC, ADB)

Dr. Christoph Zimmer



## 1. Personal introduction (2/2)

- **BPV Consult GmbH: Partner and Managing Director**
  - » Optimization of public transport networks
  - » Integrated traffic management
  - » Institutional building
  - » Project management
- **Other activities:** **German Institute of Navigation (DGON),**  
Commission Land Transport (Transport economist)  
Council to the Federal government on the  
Civil use of satellite navigation technology

Dr. Christoph Zimmer



## 2. Sustainable traffic development (1/2)

- **Economy vs. Ecology:** **A principle conflict?**
- **Sustainability:** Definition: Capacity to endure



In practice: minimization the consumption of  
» surfaces (infrastructure, urban development)  
» energy (for transportation, heating etc.)  
» financial resources (investment, operation)

- **Oikos (Greek)** community
  - Logos (Greek) logical background (How to understand it.)
  - Nomos (Greek) natural law (How to measure it.)




## 2. Sustainable traffic development (2/2)

- **Economy and ecology:** **The two sides of the same medal!**  
*"To save energy (for example by lowering the fuel consumption of a bus fleet) is good, both for the economy and for the ecology."*
- **Exceptions:** Within a balance of national accounting there are negative economical impacts which are not monetized on the actual markets (such as external effects).



**However:**  
**There is no alternative to sustainable traffic development.**

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### 3. Overall background in Germany

- **Strong shifts of economic weight**  
generating
- **Strong shifts of mobility**

Mobility:  
here: Daily change of places  
e.g. home – work – home;  
home – university – sports – home


**Growth of personal trips 1997-2005**  
(all traffic purposes and all modes):

- very low
- Low
- Neutral
- High
- Very high



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### 4. Planning of infrastructure and transportation supply

	Road (individual motorized transport)	Bus / Rail (public "collective" transport)
Master planning	Integrated planning of demand and supply	
Infrastructure realisation	<ul style="list-style-type: none"> <li>• Individual technical design (standards)</li> <li>• Independent realisation</li> </ul>	<ul style="list-style-type: none"> <li>• Individual technical design (standards)</li> <li>• Independent realisation</li> </ul>
Operation (over the years)	"fully" individual by the road users	<ul style="list-style-type: none"> <li>• Individual and independent operation schemes (bus: no standards rail: low standards)</li> <li>• Low/no economic control</li> </ul>

**Only in the beginning (planning) there is a fully integrated approach.**

Dr. Christoph Zimmer





## 5. Long term modal shift in metropolitan areas (1/5)

here: **Munich**

- Although Munich is one of the strongest metropolitan areas in Germany it is going to grow further.
- Even though any opportunities are limited, a strong growth is going to be expected even in the centre of Munich.
- However, many utilizations, especially housing, are displaced to the outer areas of the metropolitan area.



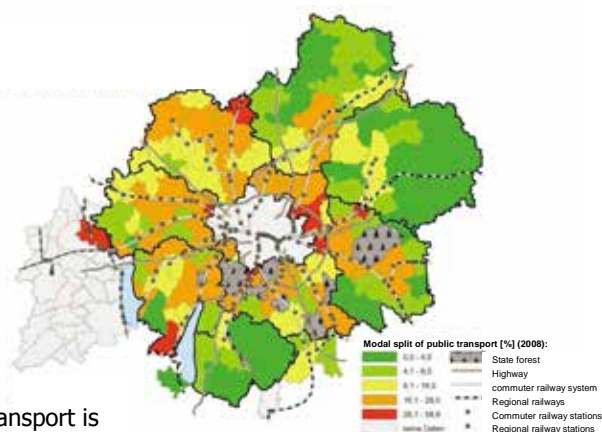
### Consequence:

completely new mix of OD-relations  
of everyday mobility in the total area

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## 5. Long term modal shift in metropolitan areas (2/5)




### Observation 1:

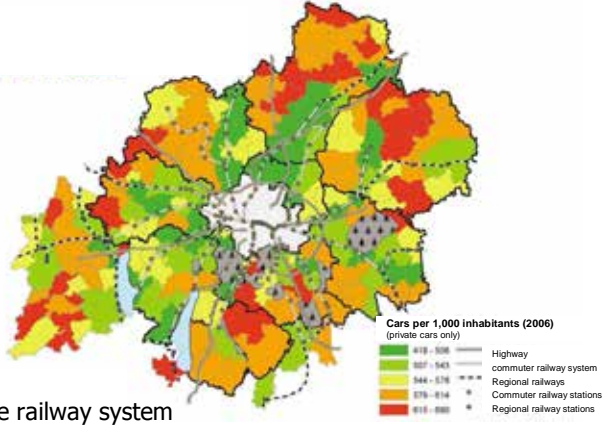
The modal split of public transport is  
significantly higher along the railway lines.

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### 5. Long term modal shift in metropolitan areas (3/5)



**Observation 2:**  
The better the access to the railway system  
the lower the private car ownership.

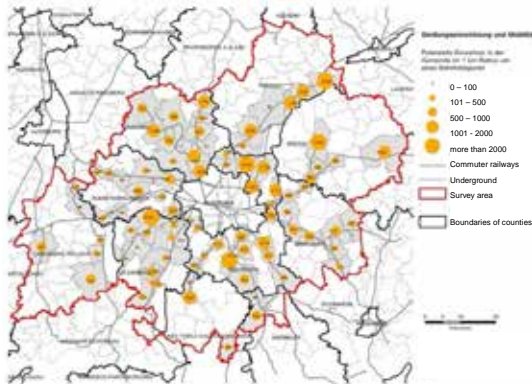
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### 5. Long term modal shift in metropolitan areas (4/5)

Housing development areas  
within a 1-km-diameter  
around stations (2009)



**Conclusion:**  
The development of new housing areas  
is concentrated on areas with a good access to railways.

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## 5. Long term modal shift in metropolitan areas (5/5)

### Note:

- Although Munich is one of the most important motor cities in Germany (BMW) there is a common sense on the necessity to enlarge the public transport capacities with a high priority.

### Necessities for the redesign of the public infrastructure system:

- The focus is the enlargement of the railway supply.
- However, the rail track capacities are strongly limited.
- Apart from a few rail track extension projects the key focus is the enlargement of the railway supply.
- In practice there are several local public transport operators to be integrated in the capacity enlargement concept (underground, tram, bus).



**This affords a fully integrated planning and operation concept.**

Dr. Christoph Zimmer



## 6. SUN – Active modal shift in the Hamburg area (1/6)

**Coming infrastructure projects exceed the present capacity problems.**



Reconstruction of the  
old Elbe tunnel tubes (A 7)



Noise protection  
project (A 7)




Extensive highway extension  
projects (A 7 and A 23)



**Construction → traffic congestions → increasing environmental pollution**

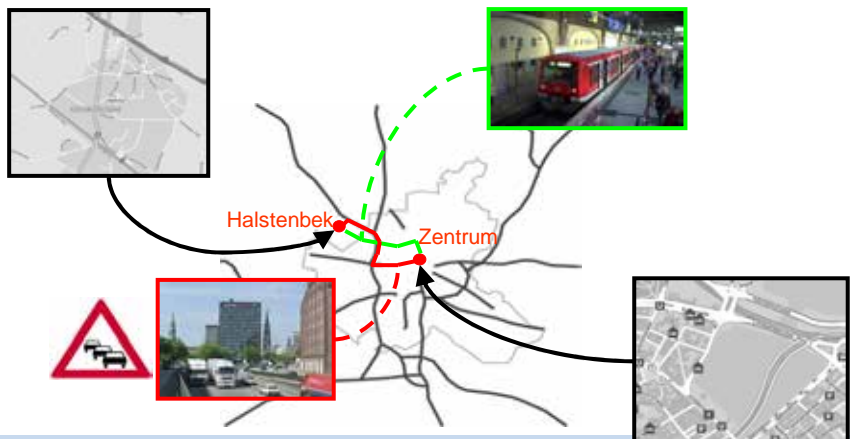
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### 6. SUN – Active modal shift in the Hamburg area (2/6)

**Feature 1:**  
Tracking from origin to destination including all modes of transport.



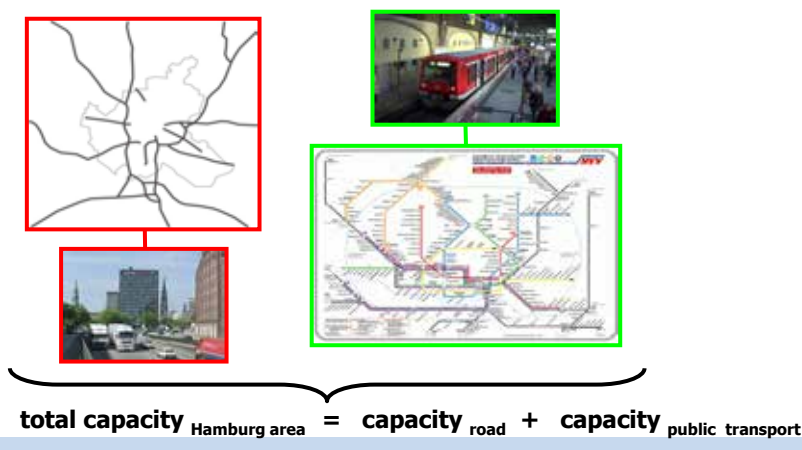
Dr. Christoph Zimmer

European-Chinese Centre for Education and Research  
in Regional Development Planning (ECER)



### 6. SUN – Active modal shift in the Hamburg area (3/6)


**Feature 2:**  
Understanding and optimizing transportation capacity as a grand total.



**total capacity** Hamburg area = **capacity** road + **capacity** public transport

Dr. Christoph Zimmer

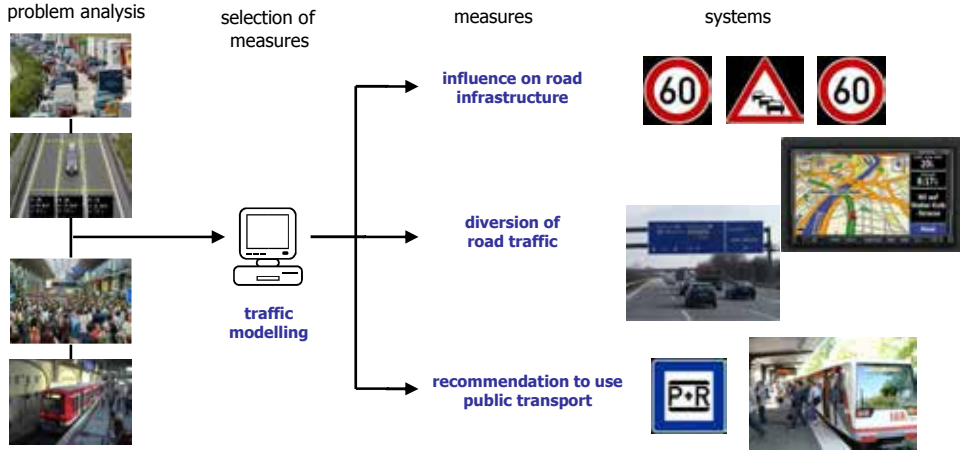
European-Chinese Centre for Education and Research  
in Regional Development Planning (ECER)



### 6. SUN – Active modal shift in the Hamburg area (4/6)

**Feature 3:**  
**Integrated problem analysis and conclusion of measures.**

problem analysis      selection of measures      measures      systems



influence on road infrastructure


diversion of road traffic

recommendation to use public transport

traffic modelling

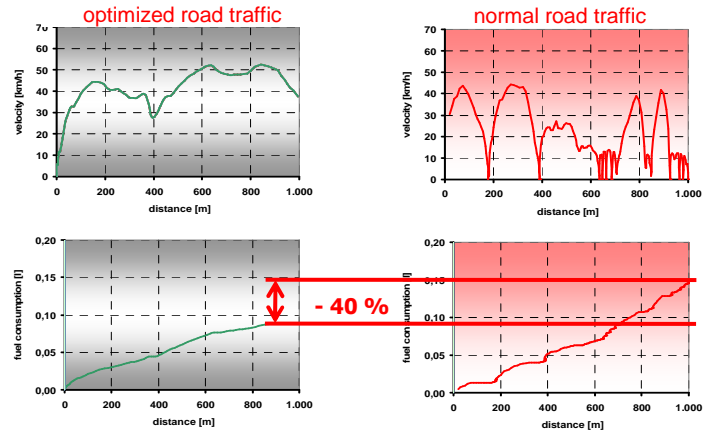
Dr. Christoph Zimmer

European-Chinese Centre for Education and Research  
in Regional Development Planning (ECER)



### 6. SUN – Active modal shift in the Hamburg area (5/6)

**Feature 4:**  
**Effective and provable reduction of road traffic air pollution (online)**



optimized road traffic

normal road traffic

velocity [km/h]

distance [m]

fuel consumption [l]

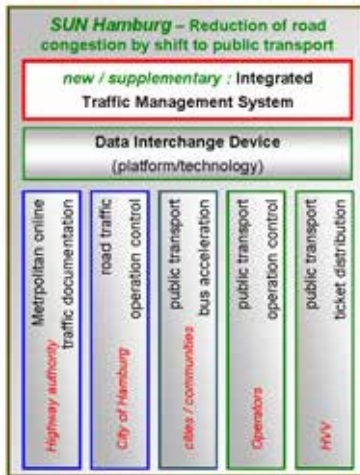
distance [m]

- 40 %

Dr. Christoph Zimmer



## 6. SUN – Active modal shift in the Hamburg area (6/6)



### Systems approach:

- Integrated traffic management
- Built on existing base projects
- Necessary: data interchange device
- Established at Hamburg Verkehrsverbund (PTA)
- New:

**Sound technical system  
with an integrated overall conception.**



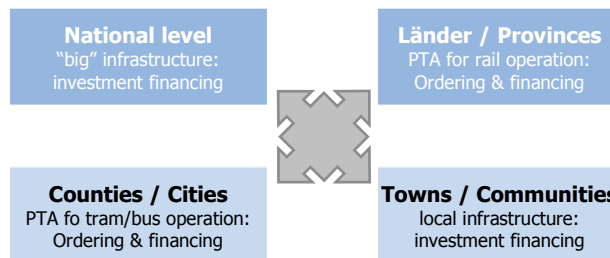
**SUN shall be realised on the basis of  
practically proven components!**

Dr. Christoph Zimmer



## 7. Conclusions for spatial development (1/3)

### Differing responsibilities for public transport in Germany incl. PTA = Public transport authorities (by law)



**A sound development of public transport needs both,**

- **integrated planning and integrated operation and**
- **a formal cooperation of the responsible organisations.**

Dr. Christoph Zimmer



## 7. Conclusions for spatial development (2/3)

### Successful traffic development is

- Intersectoral
- Inter modal
- Inter municipal
- Inter disciplinary
- Inter active
- .....



**Successful traffic development depends on an open cooperation of various disciplines, institutions and responsibilities.**



## 7. Conclusions for spatial development (3/3)

- In the past, capacity management was realised by infrastructure enlargement and successive construction projects.
- Within the (big) cities and in case of a strong growth of demand infrastructure enlargement alone will no longer solve the problems.
- Furthermore infrastructure enlargement might cause new problems within the urban development.
- Therefore modern traffic management will be based on



**Intelligent transportation systems (ITS)**



## 8. Recommendations for education and research

Spatial development planning has to focus a wide range of problems and topics. It is a "royal discipline" for complex planning. Typical problems and methods are:

- Decision making under uncertainty
- Impact analysis
- Systems engineering
- .....

Integrated traffic management is highly sophisticated:

- It should be based on broad basic knowledge within a "classic" subject (such as civil engineering, mechanical engineering, city planning etc.).
- Practical experiences are essential for a good understanding of the complex dependencies and solutions.



**Thus, spatial development planning and traffic management are typical subjects for post graduate education at universities.**

Dr. Christoph Zimmer



**Thank you very much for your kind attention!**

Dr. Christoph Zimmer



**Forum “Sustainable Urban and Regional Development”  
on the occasion of EXPO Shanghai  
October 18th, 2010**



a Cooperation Project  
between the City of Trier and  
the Beijing Normal University

**Lecture:  
Transeurasian Transport Corridors**

Prof. Dr. Xiaoning Zhu, Vice-dean,  
School of Traffic and Transportation, Beijing Jiaotong University





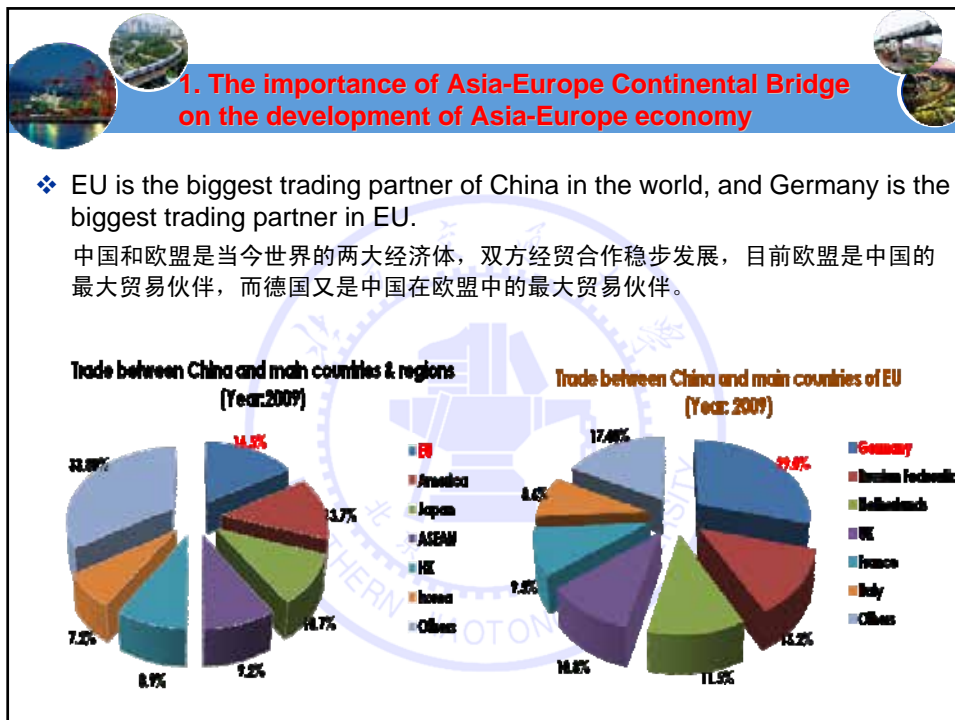
**Promote the Cooperation on the Transport  
Corridors between Europe and China**  
推进中欧在亚欧大陆桥的合作

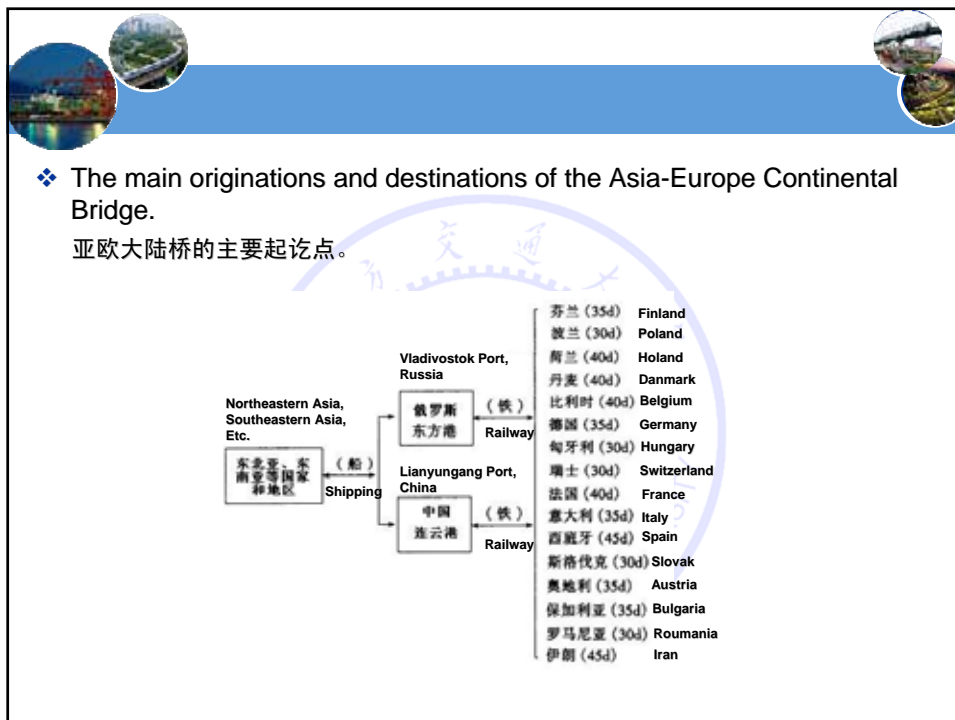
Dr. Xiaoning Zhu  
Prof., Vice-dean  
School of Traffic and Transportation  
Beijing Jiaotong University



## Agenda 主要内容

- ❖ **The importance of Asia-Europe Continental Bridge on the development of Asia-Europe economy**  
亚欧大陆桥对中欧经济发展的重要性
- ❖ **The development and planning of rail transportation and logistics in China**  
中国铁路运输与物流发展及规划状况
- ❖ **The research and education base of School of Traffic & Transportation, BJTU**  
北京交通大学交通运输学院科研教育
- ❖ **Suggestion on the cooperation of the Transport Corridors between Germany and China**  
中德在中欧运输走廊（亚欧大陆桥）上的合作建议



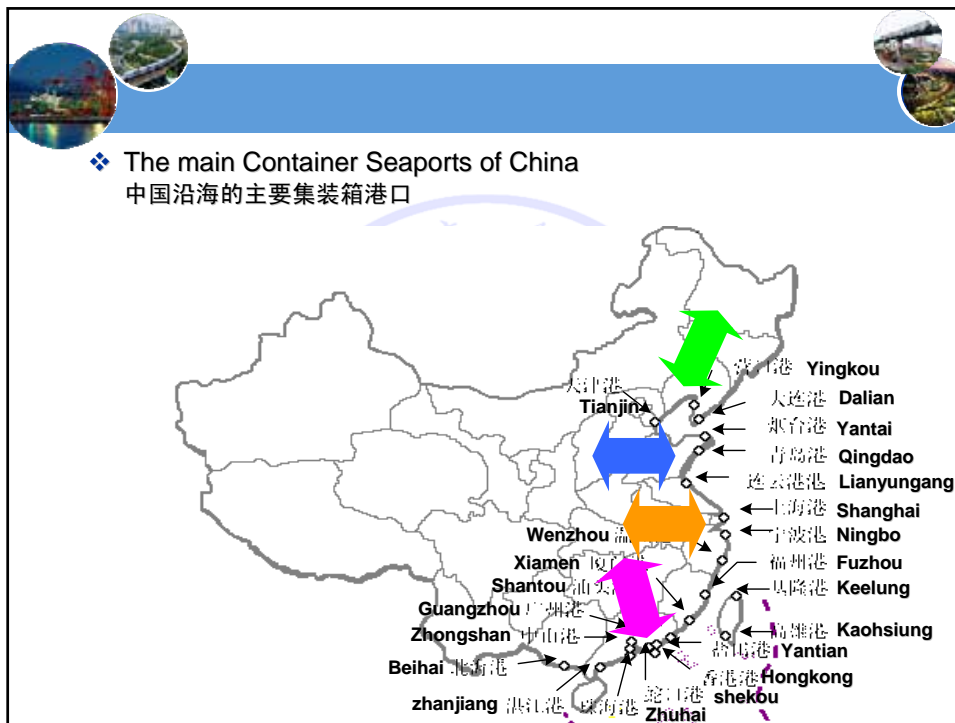


The Throughput of the main container seaports in 2007, 2008, 2009 (Unit: million TEU)  
Containerization International No. 3,2010, www.chnshipping.com


排名	港口	Seaport	所属国家 Country	2009 Year	2008 Year	2007 Year	09/08 (%)	08/07 (%)
1	新加坡	Singapore	新加坡	25.87	29.92	27.9	-13.5	7.2
2	上海	Shanghai	中国	25	27.98	26.15	-10.7	7
3	香港	Hongkong	中国	20.98	24.49	24	-14.3	2
4	深圳	Shenzhen	中国	18.25	21.41	21.1	-14.8	1.5
5	釜山	Busan	韩国	11.95	13.43	13.26	-11	1.3
6	广州	Guangzhou	中国	11.19	11	9.26	1.7	18.8
7	迪拜	Dubai	阿联酋	11.12	11.83	10.65	-6	11.1
8	宁波—舟山	Ningbo	中国	10.5	11.23	9.43	-6.5	19.1
9	青岛	Qingdao	中国	10.26	10.32	9.46	-0.6	9.1
10	鹿特丹	Rotterdam	荷兰	9.74	10.8	10.79	-9.8	0.1
11	天津	Tianjin	中国	8.7	8.5	7.1	2.4	19.7
12	高雄	Kaosiung	中国台湾	8.58	9.68	10.26	-11.4	-5.7
13	安特卫普	Antwerp	荷兰	7.31	8.66	8.18	-15.6	5.9
14	巴生港	Port Klang	马来西亚	7.3	7.97	7.12	-8.4	11.9
15	汉堡	Hamburg	德国	7.01	9.74	9.89	-28	-1.5
16	洛杉矶	Los Angeles	美国	6.75	7.85	8.36	-14	-6.1
17	丹戎帕拉帕斯港	Port Tanjung Pelepas	马来西亚	6	5.6	5.47	7.1	2.4
18	长滩	Long Beach	美国	5.07	6.49	7.31	-21.9	-11.2
19	厦门	Xiamen	中国	4.68	5.04	4.63	-7.1	8.9
20	兰查邦	Laem Chabang	泰国	4.64	5.13	4.85	-9.6	5.8

The Throughput of the main container seaports in 2007, 2008, 2009 (Unit: million TEU)  
Containerization International No. 3,2010, www.chnshipping.com

排名	港口(中文)	Seaport	所属国家 Country	2009 Year	2008 Year	2007 Year	09/08 (%)	08/07 (%)
21	大连	Dalian	中国	4.55	4.5	3.81	1.1	18.1
22	不来梅	Bremerhaven	德国	4.54	5.5	4.89	-17.5	12.5
23	纽约/新泽西	New York/New Jersey	美国	4.51	5.27	5.3	-14.4	-0.6
24	贾瓦哈拉尔尼赫鲁	Jawaharlal Nehru	印度	3.86	4.18	3.89	-7.7	7.5
25	丹戎不碌	Tanjung Priok	印度尼西亚	3.8	3.98	3.69	-4.5	7.9
26	东京	Tokyo	日本	3.74	4.16	4.12	-10.1	1
27	瓦伦西亚	Valencia	西班牙	3.65	3.6	3.04	1.4	18.4
28	胡志明市	Ho Chi Minh City	越南	3.56	3.43	3.2	3.8	7.2
29	塞拉莱	Salalah	阿曼	3.49	3.07	2.64	13.7	16.3
30	塞德港	Port Said	埃及	3.47	3.2	2.84	8.4	12.7
31	科伦坡	Colombo	斯里兰卡	3.46	3.69	3.38	-6.2	9.2
32	马尼拉	Manila	菲律宾	3.44	2.99	2.87	15.1	4.2
33	费利克斯托	Felixstowe	英国	3.1	3.2	3.3	-3.1	-3
34	吉达	Jeddah	沙特	3.09	3.33	3.07	-7.2	8.5
35	阿尔赫西拉斯	Algeciras	西班牙	3.04	3.32	3.41	-8.4	-2.6
36	连云港	Lianyungang	中国	3.02	2.97	2	1.7	48.5
37	横浜	Yokohama	日本	2.8	3.48	3.43	-19.5	1.5
38	焦亚陶罗	Gioia Tauro	意大利	2.8	3.47	3.45	-19.3	0.6
39	科尔·纳坎港	Khor Fakkan/Sharjah	沙迦酋长国	2.75	2.5	2.17	10	15.2
40	营口港	Yingkou	中国	2.54	2.03		25.1	



## 2. The development and planning of rail transportation and logistics in China



- ❖ The development and planning of rail transport in China  
中国铁路运输发展规划状况
- ❖ The development and planning of logistics in China  
中国物流发展规划状况







**The points of railway development and planning**  
铁路发展规划要点

- ❖ The kilometers of national railway will reach above 120,000 km in 2010, of which 16,000 km passenger lines; the rate of double line and electrification will both reach above 60%.  
2020年, 全国铁路营业里程规划目标为12万km以上, 其中客运专线为1.6万km, 电化率为60%。
  - Building Fast passenger transport network  
建设快速客运网络
  - Continue to expand the western railway network  
继续扩展西部路网建设
  - Optimize and improve the central east rail network  
优化和完善东中部路网
  - Enhance the channel construction behind sea port and customhouse  
加强港口和口岸后方通道建设
  - Build container transport system  
建设集装箱运输系统
  - Enhance the construction of the main hinge  
加强主要运输枢纽建设



**The points of railway development and planning**  
铁路发展规划要点

- ❖ Improve modernization of technique and equipment  
大力推进技术装备现代化
  - Speed up the updating of locomotive  
加快机车车辆升级换代
  - Upgrade the level of technology of infrastructure of lines  
提升线路基础设施技术水平
  - Speed up the modernization of communications signal technology  
加快通信信号技术现代化
  - Actively promote the informationization of railway  
积极推进铁路信息化
  - Enhance resource conservation and environmental protection  
加强资源节约和环境保护



### The points of railway development and planning 铁路发展规划要点

- ❖ Improve the quality of services of railway  
提高铁路服务质量
  - Further exert potential transport capacity of existing lines, make balance of capacity between node and line.  
进一步挖掘既有线的运输潜力，强化点线能力配套
  - Consolidate and improve the share of railway in the long-distance passenger transport and bulk freight transport market.  
巩固和提高铁路在中长途客运和大宗货运市场中份额
  - Raise the share of short-distance passenger transport and high value-added freight transport market.  
提高短途客运和高附加值货运市场份额
  - Enhance connection and cooperation with other modes of transport, play the important role of transport in integrated logistical chain.  
加强与其他运输方式的衔接与合作，发挥铁路在综合物流链中的骨干作用
  - Speed up the development of professional transport, such as container, special goods. Form large-scale, market-oriented, professional operation as soon as possible.  
加快发展集装箱、特种货物等专业运输，尽快形成规模化、市场化、专业化经营



### Adjustment and Revival Planning of Logistic Industry 物流发展规划

- ❖ Ten Main Tasks  
十项主要任务
  - Expand Demand of Logistics Market  
积极扩大物流市场需求
  - Push Specialization of Logistics Services.  
大力推进物流服务的社会化和专业化
  - Quicken Recombination of Logistics Enterprises  
加快物流企业兼并重组
  - Drive Development of Main Logistics Field  
推动重点领域物流发展
  - Accelerate Development of International Logistics and Bonded Logistics  
加快国际物流和保税物流发展
  - Optimize Regional Layout of Logistics Industry  
优化物流业发展的区域布局
  - Strengthen Link and Coordination of Logistics Infrastructure  
加强物流基础设施建设的衔接与协调
  - Enhance Level of Logistics Informationization  
提高物流信息化水平
  - Perfect System of Logistics Standardization  
完善物流标准化体系
  - Encourage Development and Application of New Logistics Technology  
加强物流新技术的开发和应用



**Adjustment and Revival Planning of Logistic Industry**  
**物流发展规划**

- ❖ **Nine Main Engineering**  
**九项重点工程**
  - Multi-model Transport and Transfer Establishment Engineering  
多式联运、转运设施工程
  - Logistics Park Engineering  
物流园区工程
  - Urban Distribution Engineering  
城市配送工程
  - Mass Goods and Rural Logistics Engineering  
大宗商品和农村物流工程
  - Logistics Development Engineering Associate with Manufacturing  
制造业与物流业联动发展工程
  - Logistics Standardization Engineering  
物流标准和技术推广工程
  - Logistics Public Information System Engineering  
物流公共信息平台工程
  - Logistics Science and Technology Engineering  
物流科技攻关工程
  - Emergency Logistics Engineering  
应急物流工程




**Adjustment and Revival Planning of Logistic Industry**  
**物流发展规划**

- ❖ **Nine Policy and Measure**  
**九项政策措施**
  - Strengthen Organization and Coordination  
加强组织和协调
  - Reform Logistics Management System  
改革物流管理体制
  - Perfect Logistics Policy and Statute System  
完善物流政策法规体系
  - Prepare National Special Logistics Planning  
制订落实专项规划
  - Add Investment on Logistics through More Approach  
多渠道增加对物流业的投入
  - Perfect Logistics Statistic Index System  
完善物流统计指标体系
  - Push Opening and International Cooperation in Logistics  
继续推进物流业对外开放和国际合作
  - Quicken to Cultivate Logistics Human Resources  
加快物流人才培养
  - Encourage Logistics Industry Association to Play More Important Role  
发挥行业社团组织的作用

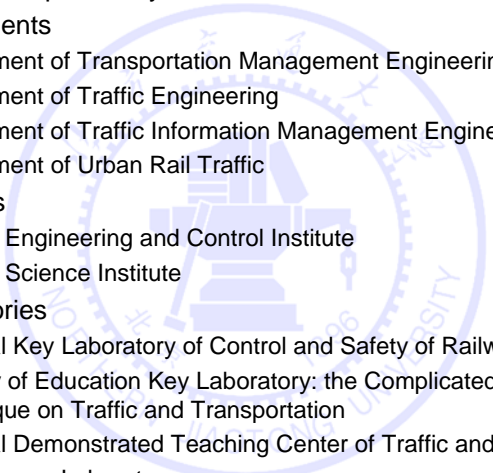


### 3. The research and education basis of School of Traffic & Transportation, BJTU

- ❖ School of Traffic and Transportation (STT) owns one of the most historical disciplines within the Beijing Jiaotong University (BJTU).  
交通运输学院有北京交通大学最早的学科
- ❖ We own the national key subject named as Traffic and Transportation Planning and Management, which is the best in China.  
我们有用中国最好的交通运输规划与管理国家重点学科




- ❖ Now it has developed many branches as:
  - 4 Departments
    - Department of Transportation Management Engineering
    - Department of Traffic Engineering
    - Department of Traffic Information Management Engineering
    - Department of Urban Rail Traffic
  - 2 Institutes
    - System Engineering and Control Institute
    - System Science Institute
  - 4 Laboratories
    - National Key Laboratory of Control and Safety of Railway Traffic
    - Ministry of Education Key Laboratory: the Complicated System and Technique on Traffic and Transportation
    - National Demonstrated Teaching Center of Traffic and Transportation
    - E-commerce Laboratory



Subject					
Post-doctoral research station	First-grade Subject for Ph.D	second-grade Subject for Ph.D.	Second-grade Master programs	Engineering Master programs	Bachelor programs
<ul style="list-style-type: none"> <li>●Traffic and Transportation Engineering</li> <li>●System Science</li> <li>●System Engineering</li> </ul>	<ul style="list-style-type: none"> <li>●Traffic and Transportation Engineering</li> <li>●System science</li> </ul>	<ul style="list-style-type: none"> <li>●Traffic and Transportation Planning and Management</li> <li>●Transportation and Logistics</li> <li>●Urban Traffic Engineering</li> <li>●Intelligent Traffic System</li> <li>●Traffic Safety Engineering</li> <li>●System Engineering</li> <li>●System Analysis and Integration</li> <li>●System Theory</li> <li>●Safety Technology and Engineering</li> </ul>	<ul style="list-style-type: none"> <li>●Traffic and Transportation Planning and Management</li> <li>●Transportation and Logistics</li> <li>●Urban Traffic Engineering</li> <li>●Intelligent Traffic System</li> <li>●Traffic Safety Engineering</li> <li>●System Engineering</li> <li>●System Theory</li> <li>●System Analysis and Integration</li> <li>●Safety Technology and Engineering</li> <li>●Environment Engineering</li> <li>●E-commerce</li> </ul>	<ul style="list-style-type: none"> <li>●Traffic and Transportation Engineering</li> <li>●Logistics Engineering</li> <li>●Control Science and Engineering</li> </ul>	<ul style="list-style-type: none"> <li>●Traffic and Transportation Engineering</li> <li>●Traffic Engineering</li> <li>●E-commerce</li> </ul>

Staffs and Students
<ul style="list-style-type: none"> <li>❖ 144 staff worked in our school including : <ul style="list-style-type: none"> <li>▪ 40 professors</li> <li>▪ 44 associate professors</li> </ul> </li> <li>❖ More than 2364 students <ul style="list-style-type: none"> <li>▪ More than 1300 undergraduates</li> <li>▪ 588 post-graduate students</li> <li>▪ 281 Ph.D. students</li> <li>▪ 195 master students of engineering</li> </ul> </li> </ul>



**Research**

- ❖ STT has got plentiful and substantial achievements in the fields of traffic and transportation engineering, systems engineering, systems science and so on.  
交通运输学院在交通运输工程、系统工程、系统科学领域取得大量的丰富的成果。
- ❖ In recent years (2006-2009)
  - completed 908 scientific research projects including 40 projects of national level and 142 projects of province and ministry level, won 1 Awards of national level and 12 Awards of province and ministry level.  
完成科研项目908项，其中国家级40项，省部级142项；国家奖1项，省部级奖12项。
  - published many papers indexed as following  
出版大量论文和著作
    - SCI 156, EI 264, ISTP 242
    - Monograph 32
  - got 14 Technology Inventive Patent and 154 software copyright  
获得技术专利14项，软件著作权154项。



**Research**

- ❖ STT plays an important role in the national key projects and the national economy development.  
交通运输学院在国家重点项目建设和经济发展中发挥重要的重用
- High-speed railway transportation  
高速铁路运输
- Railway line of heavy load transportation  
重载铁路运输
- Train diagram design by informationization  
列车运行图设计的信息化
- Transport and logistics  
运输物流
- Intelligent Transportation System  
智能运输系统

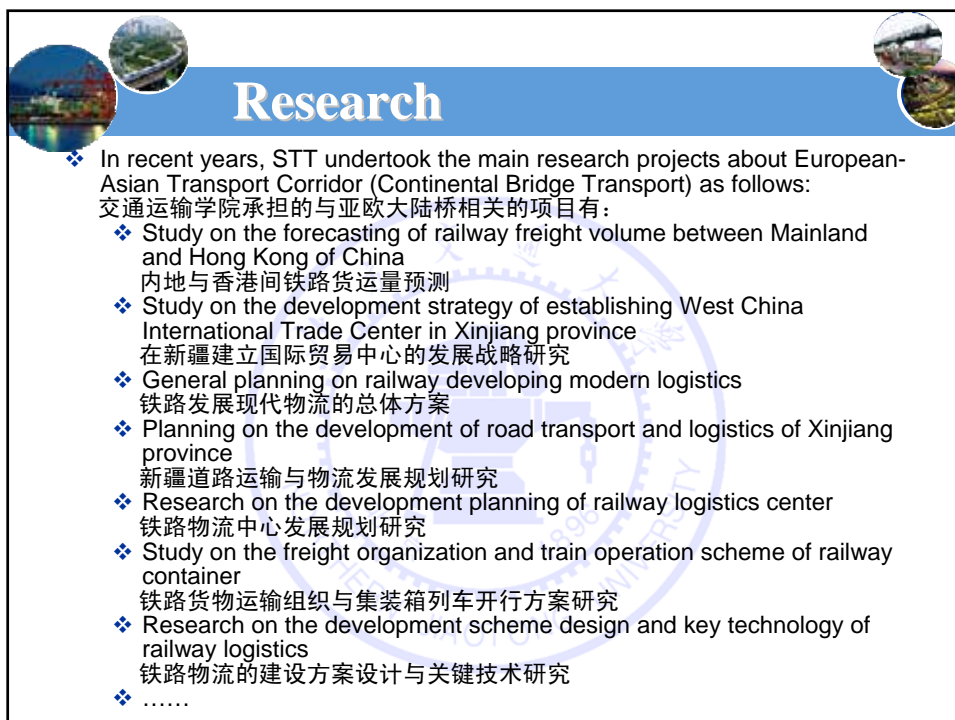




The slide features a blue header with the word "Research" in white. It is decorated with circular images of a city at night, a road, and a landscape. The main content is a list of research projects in English and Chinese, followed by a wide image of a modern railway station with multiple tracks and a train.

## Research

- ❖ STT undertakes the research of the Beijing ITS plan, the automobile exhaust examination, the Beijing public transportation dispatch control, logistics planning for the Olympic Games, and national logistics system engineering which has provided support and service for the regional economy and the Olympic Games.  
交通运输学院承担北京ITS规划、小汽车排放试验、公共交通控制、奥运会物流规划、国家物流系统工程等项目，为区域经济和奥运会提供支持和服务。
- ❖ At the same time, STT has also made contribution to Country Western Development Strategy by taking part in the research such as Tibet railway transportation organization and Tibet railway informationization.  
交通运输学院在国家西部发展战略中做出贡献，例如承担青藏铁路运输组织、青藏铁路信息化项目。



The slide features a blue header with the word "Research" in white. It is decorated with circular images of a city at night, a road, and a landscape. The main content is a list of research projects in English and Chinese.

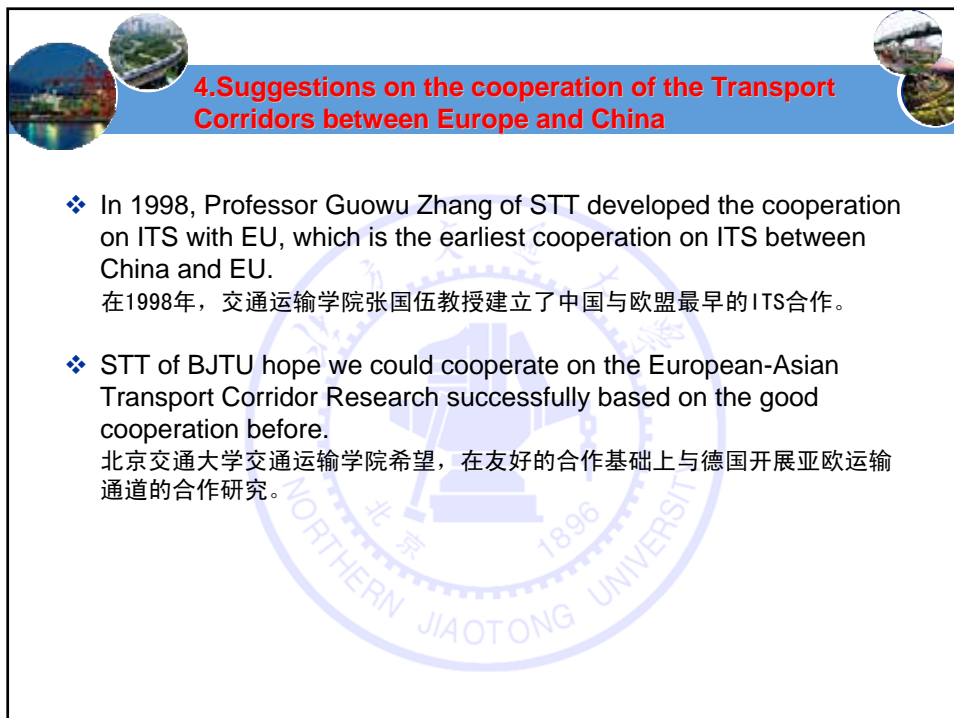
## Research

- ❖ In recent years, STT undertook the main research projects about European-Asian Transport Corridor (Continental Bridge Transport) as follows:  
交通运输学院承担的与亚欧大陆桥相关的项目有：
  - ❖ Study on the forecasting of railway freight volume between Mainland and Hong Kong of China  
内地与香港间铁路货运量预测
  - ❖ Study on the development strategy of establishing West China International Trade Center in Xinjiang province  
在新疆建立国际贸易中心的发展战略研究
  - ❖ General planning on railway developing modern logistics  
铁路发展现代物流的总体方案
  - ❖ Planning on the development of road transport and logistics of Xinjiang province  
新疆道路运输与物流发展规划研究
  - ❖ Research on the development planning of railway logistics center  
铁路物流中心发展规划研究
  - ❖ Study on the freight organization and train operation scheme of railway container  
铁路货物运输组织与集装箱列车开行方案研究
  - ❖ Research on the development scheme design and key technology of railway logistics  
铁路物流的建设方案设计与关键技术研究
  - ❖ .....



## Forum

- ❖ The Advanced Forum on Transportation of China  
中国交通高层论坛
- ❖ Sponsored by
  - Beijing Jiaotong University (BJTU) China
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## 4. Suggestions on the cooperation of the Transport Corridors between Europe and China

- ❖ In 1998, Professor Guowu Zhang of STT developed the cooperation on ITS with EU, which is the earliest cooperation on ITS between China and EU.  
在1998年，交通运输学院张国伍教授建立了中国与欧盟最早的ITS合作。
- ❖ STT of BJTU hope we could cooperate on the European-Asian Transport Corridor Research successfully based on the good cooperation before.  
北京交通大学交通运输学院希望，在友好的合作基础上与德国开展亚欧运输通道的合作研究。





- ❖ Promote the cooperation on the planning research of the transport corridors between Europe and China  
加强在亚欧大陆桥重要物流节点和运输通道方面的规划研究
- ❖ Promote the cooperation on the education and training for talents about the transport corridors between Europe and China  
加强在亚欧大陆桥人才培养方面的合作
- ❖ **Transportation is the bridge between Germany and China**  
**交通运输就是中德合作的桥梁**



**THANK YOU**



**Forum “Sustainable Urban and Regional Development“  
on the occasion of EXPO Shanghai  
October 18th, 2010**



a Cooperation Project  
between the City of Trier and  
the Beijing Normal University

**Lecture:  
Transeurasian Transport Corridors**

Prof. Dr. Hans-Dietrich Haasis,  
Institute of Shipping Economics and Logistics, University of Bremen



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**欧亚交通走廊:  
将物流和运输业作为城市和地区可持续发展的新动力**

**Prof. Dr. Hans-Dietrich Haasis**  
**哈泽斯 教授**  
**Universität Bremen**  
**不莱梅大学**  
**haasis@isl.org**  
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The slide features three aerial photographs. The top-left image shows a busy port with several large container ships docked at a pier, surrounded by numerous colorful shipping containers. The top-right image shows a modern university campus with several large, interconnected buildings and green spaces. The bottom image shows an industrial or logistics park with several large, rectangular warehouse-like buildings and paved areas.

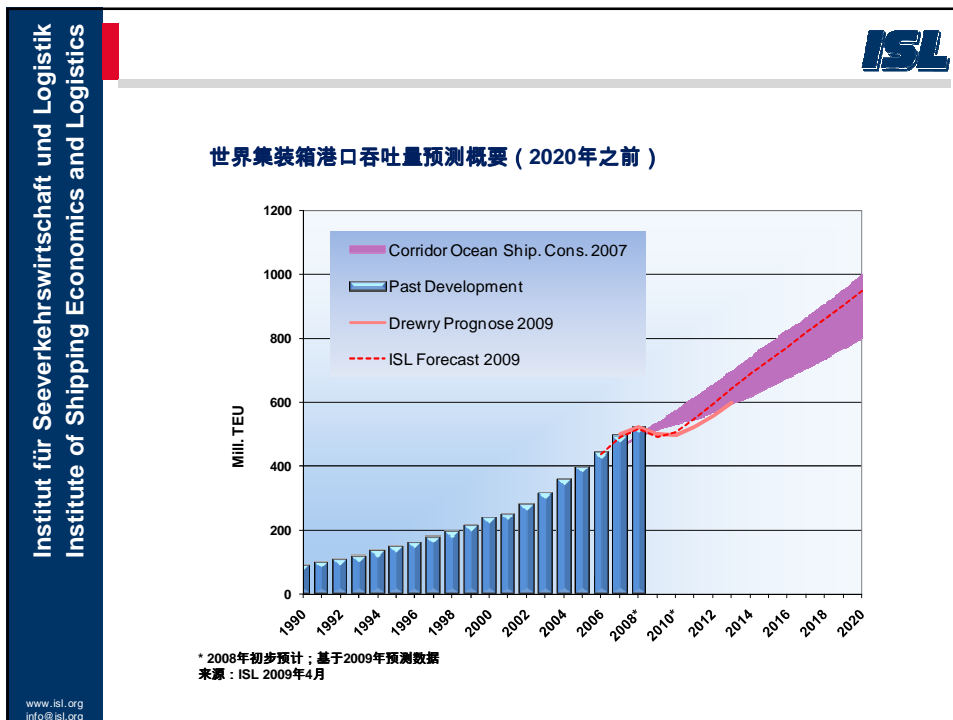
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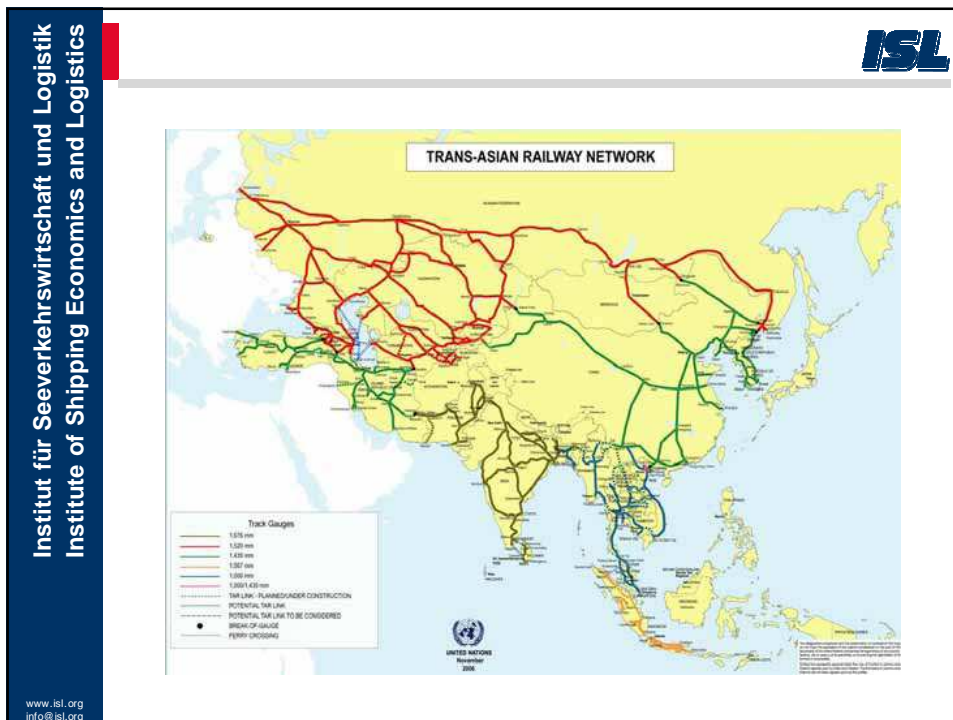


Rank 2008*	Port	2008*	2007	2006	Growth rates		
		1.000 TEU			2007-2008	2006-2007	2005-2006
1	Singapore	29.900	27.935	24.792	7,1%	12,7%	6,9%
2	Shanghai	28.200	26.109	21.710	7,9%	20,3%	20,1%
3	Hong Kong	24.200	23.995	23.308	1,1%	2,9%	3,1%
4	Shenzen	21.400	20.889	18.253	2,2%	14,4%	14,8%
5	Pusan	13.400	13.259	12.039	1,2%	10,1%	3,2%
6	Dubai	11.900	10.623	8.783	12,4%	21,0%	15,3%
7	Rotterdam	11.100	10.791	9.690	2,7%	11,4%	4,3%
8	Ningbo	11.100	9.336	7.037	19,2%	32,7%	35,8%
9	Guangzhou	11.000	8.935	6.477	23,2%	38,0%	40,7%
10	Qingdao	10.000	9.469	7.685	6,0%	23,2%	21,9%
11	Hamburg	9.800	9.890	8.862	-0,7%	11,6%	9,6%
12	Kaohsiung	9.700	10.257	9.775	-5,7%	4,9%	3,2%
13	Antwerpen	8.700	8.177	7.019	6,6%	16,5%	8,6%
14	Tianjin	8.500	7.102	5.949	19,1%	19,4%	23,9%
15	Los Angeles	7.900	8.355	8.470	-5,3%	-1,4%	13,2%
16	Port Klang	7.800	7.119	6.326	10,0%	12,5%	14,1%
17	Long Beach	6.600	7.313	7.290	-10,0%	0,3%	8,7%
18	Tanjung Pelepas	5.600	5.298	4.637	5,0%	14,2%	11,2%
19	Bremen/Bremerhaven	5.600	4.912	4.450	14,0%	10,4%	19,1%
20	Laem Chabang	5.300	4.641	3.964	13,9%	17,1%	2,9%
<b>Summe Top 20</b>		<b>247.700</b>	<b>234.403</b>	<b>206.513</b>	<b>5,7%</b>	<b>13,5%</b>	<b>11,8%</b>

\* vorläufige Hochrechnungen  
Quellen: Angaben der Häfen, ISL Hafendatenbank 2008.

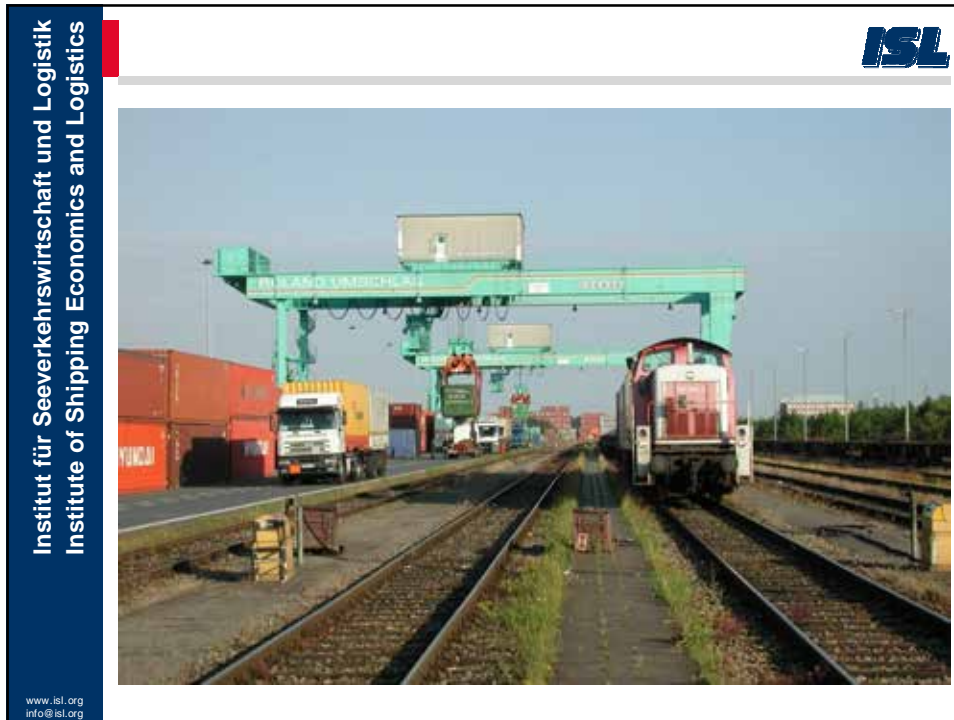
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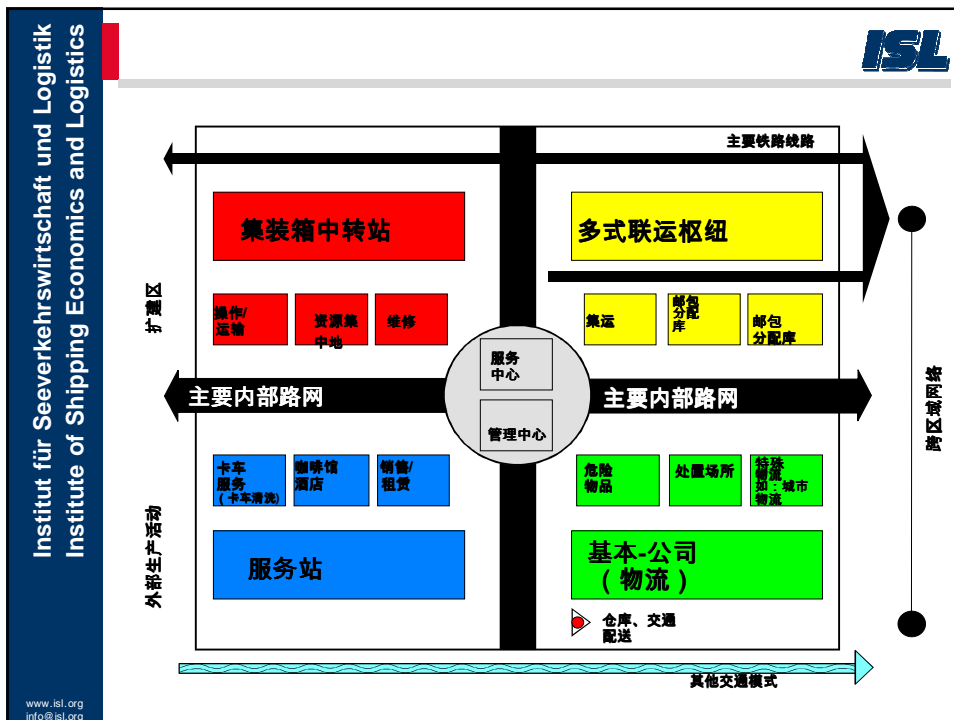
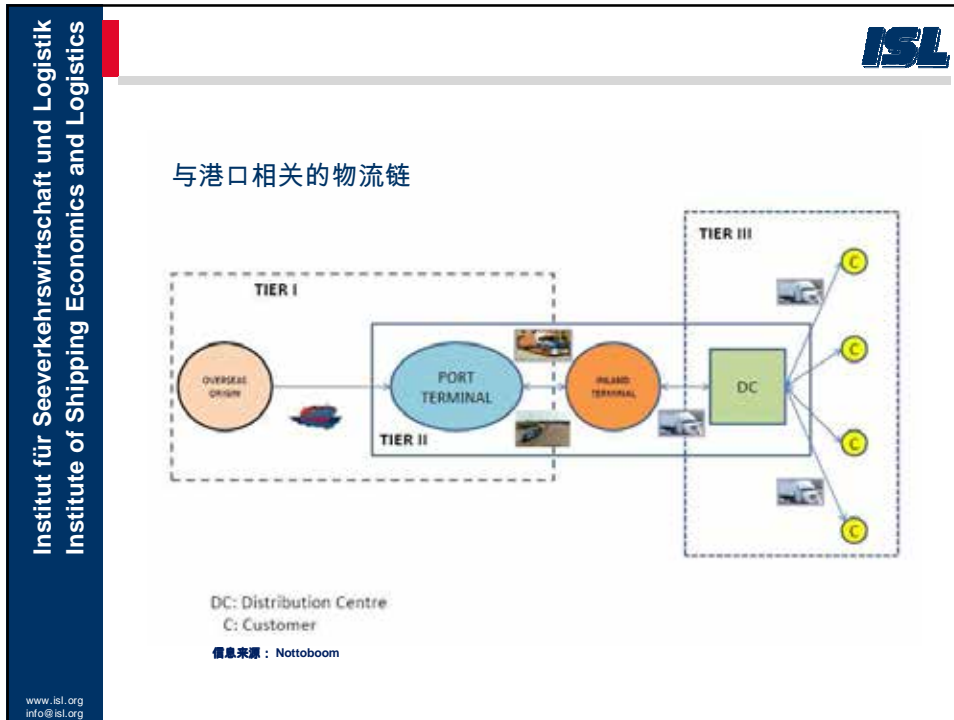


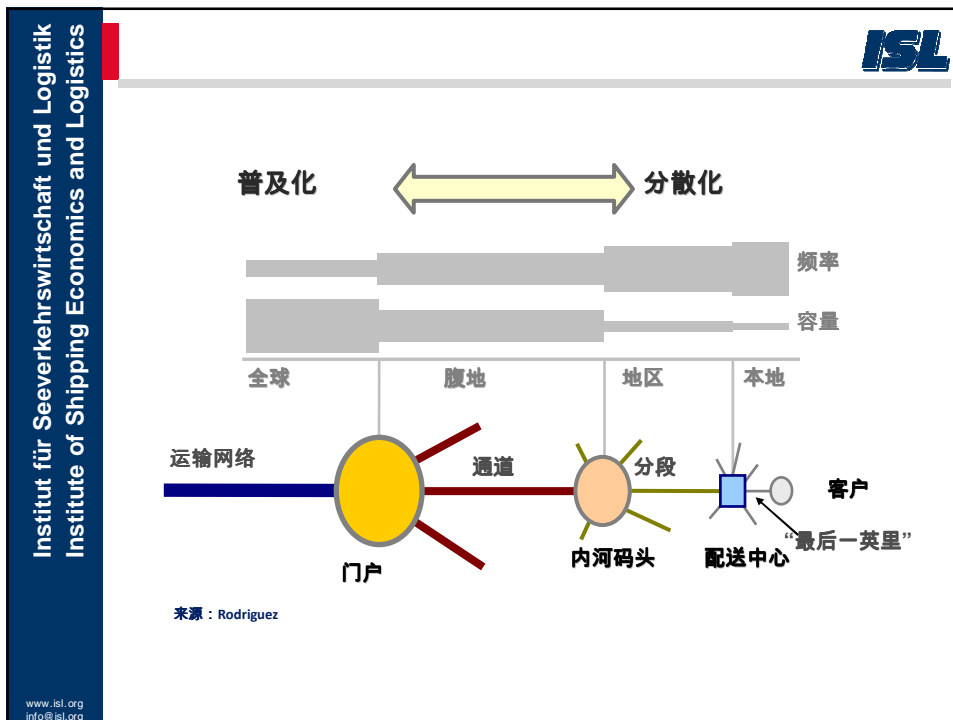
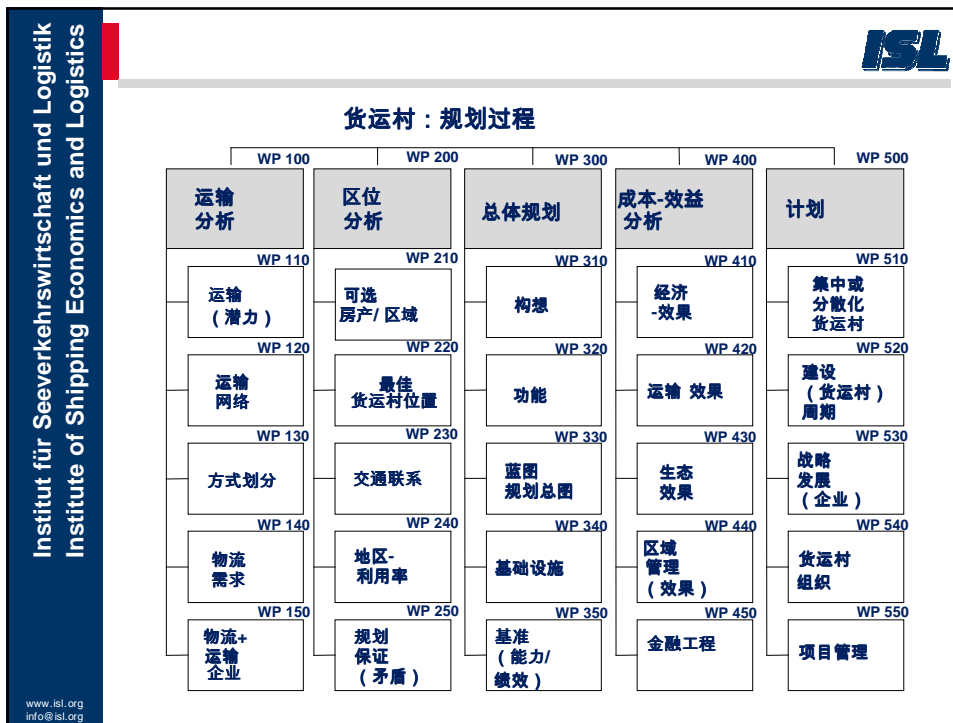


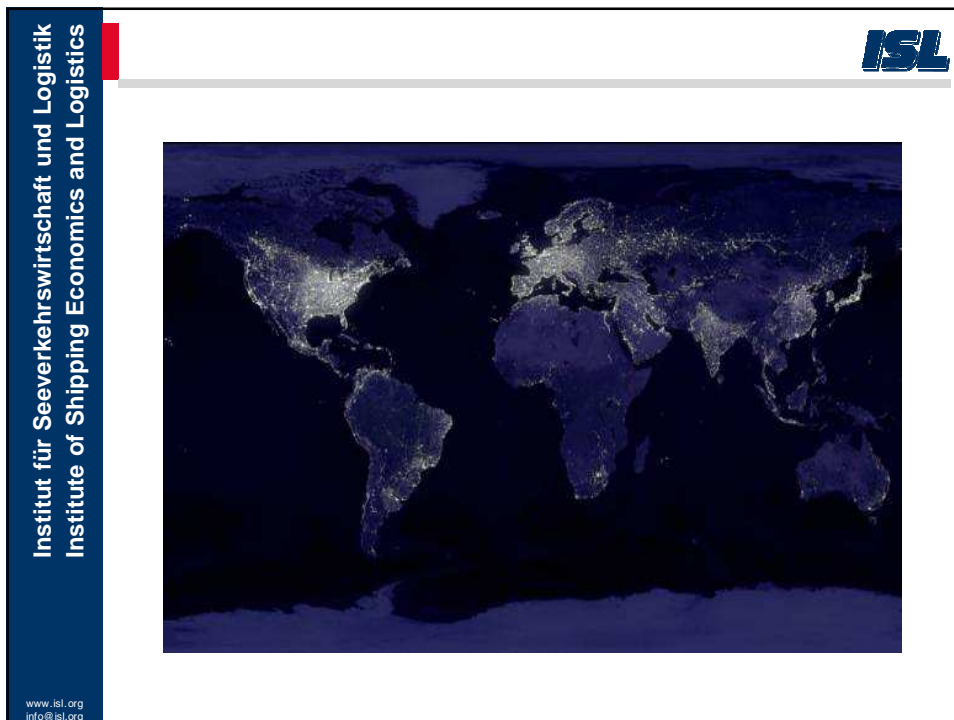
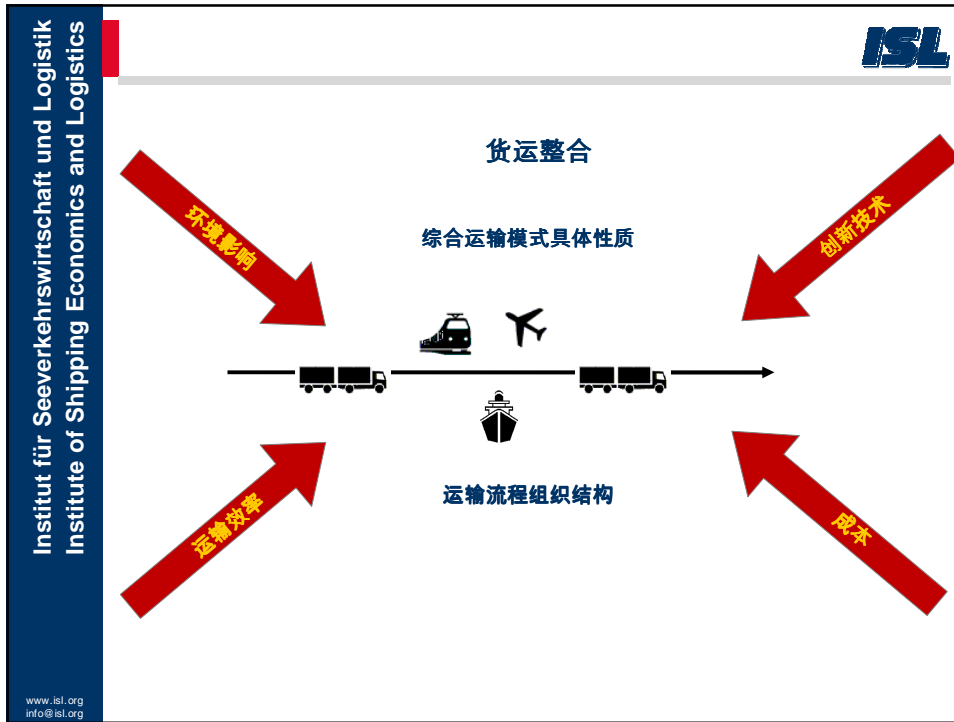


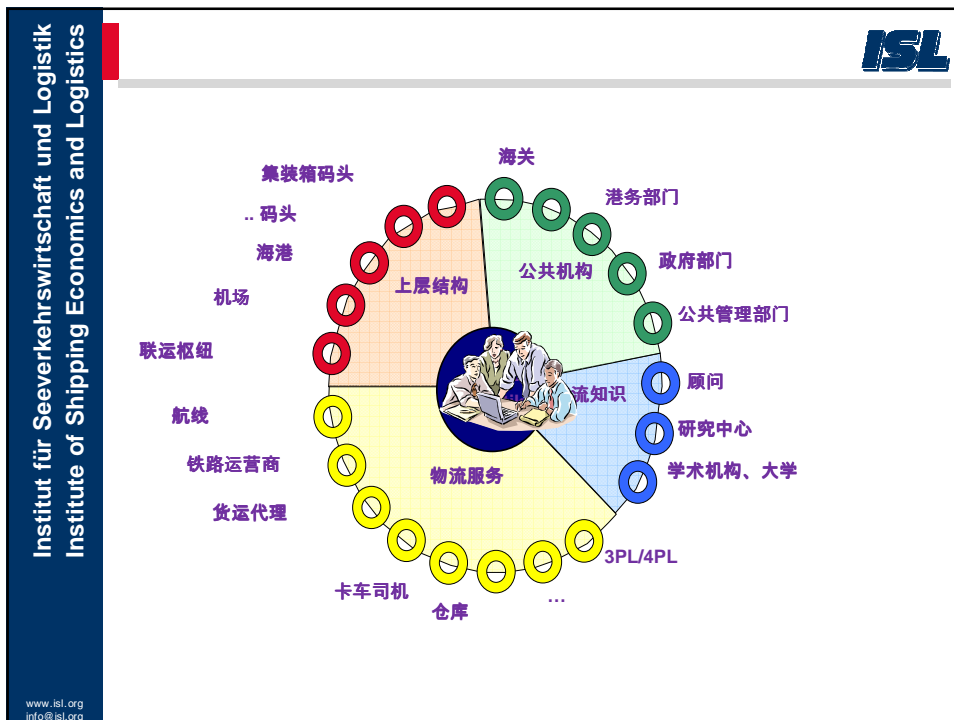
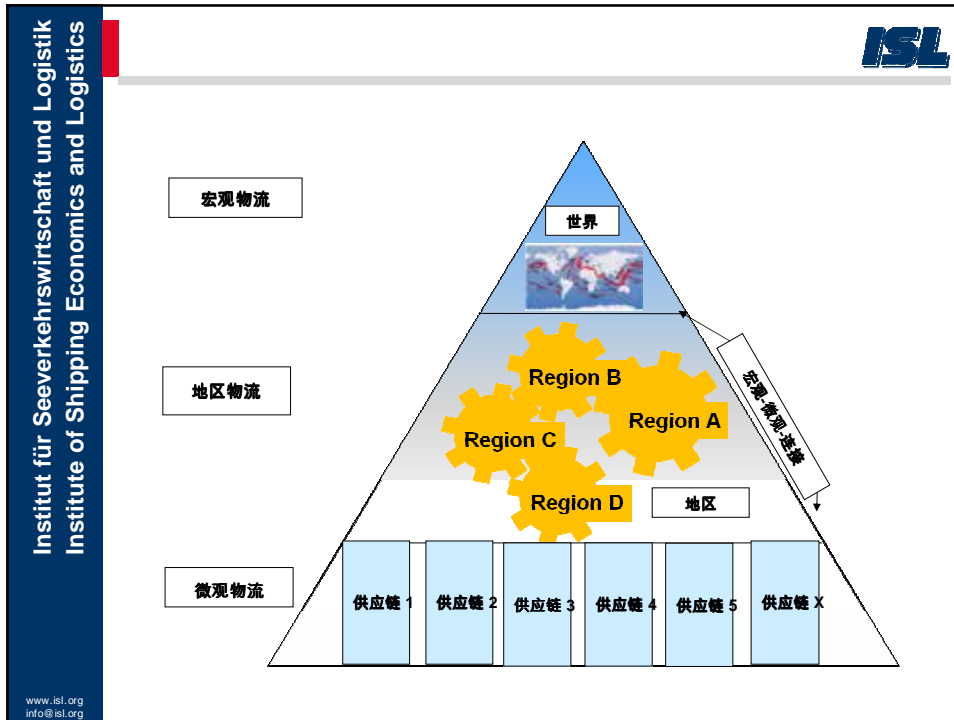












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集群是“由相互密切联系的企业、专业供应商、服务提供商、相关产业公司，以及其他有关机构在既合作又竞争的特定领域组成的在地理上高度集中的有机整体。

“**集群并非独一无二的；**  
**集群颇具典型性——并且是一个矛盾体：全球经济持久的竞争优势在于其他竞争对手无法匹敌的本地资源——知识、关系、动力。**”

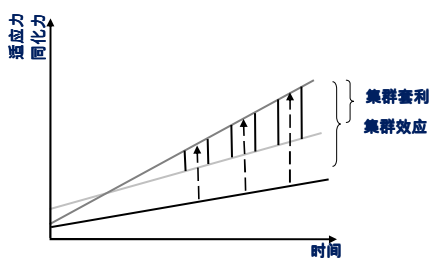
来源：Porter (1998).

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随着时间的推移，集群效应导致集群套利




相对于单个企业，那些集群中能够实现集群利益并产生信息领导力和灵活性优势的企业能够占据更有利的地位。

物流集群保证物流管理可将不产生影响的环境变量转变为组织变量，从而创造额外的行动范围。

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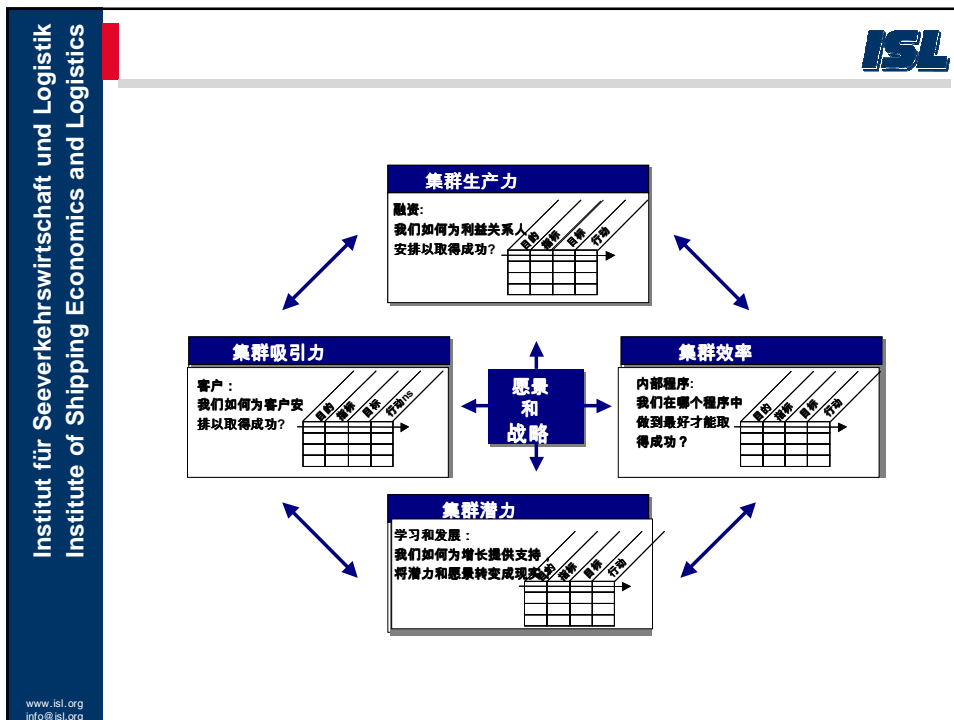
### 商业情况取决于集群管理水平

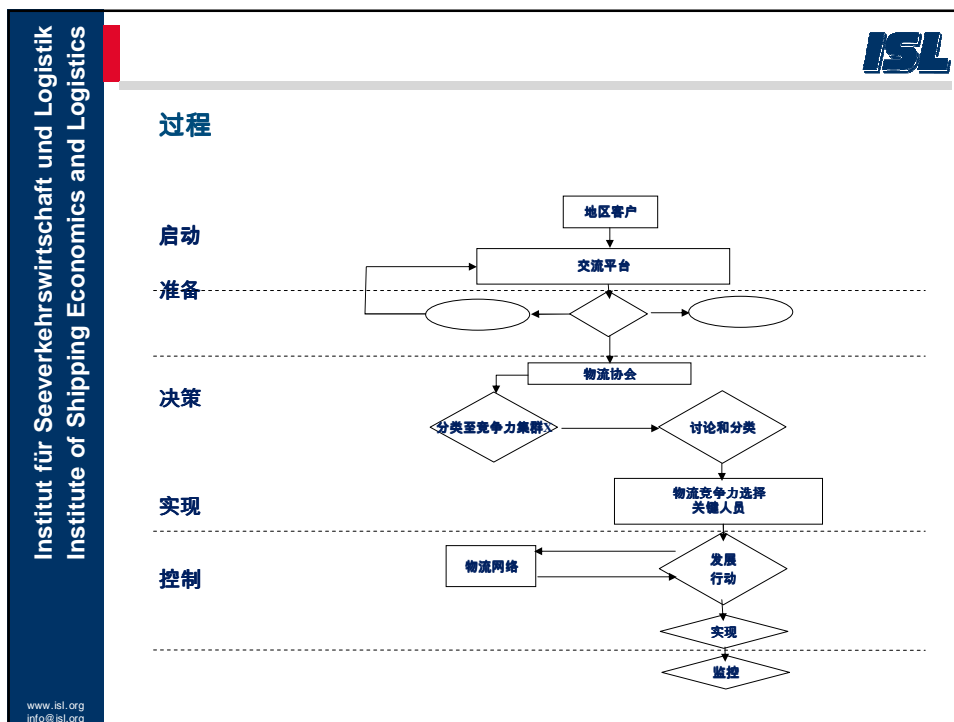
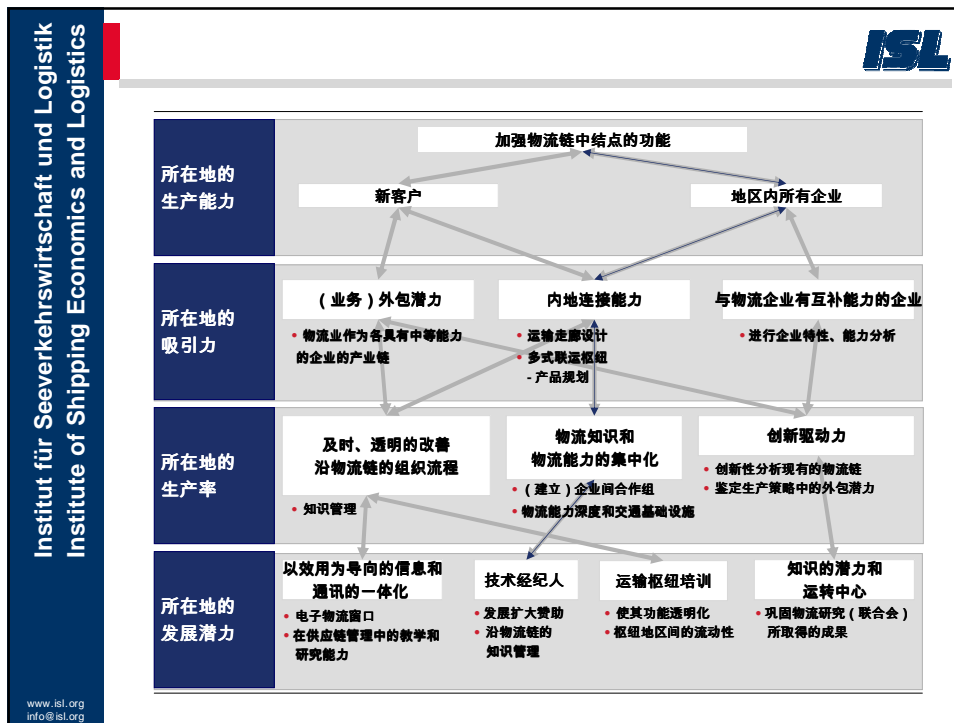
第一级： 动因、可见性  
例如：“不来梅物流日”

第二级： 交流、合作和共同学习的条件

第三级： 一站式购物商业模式，虚拟企业

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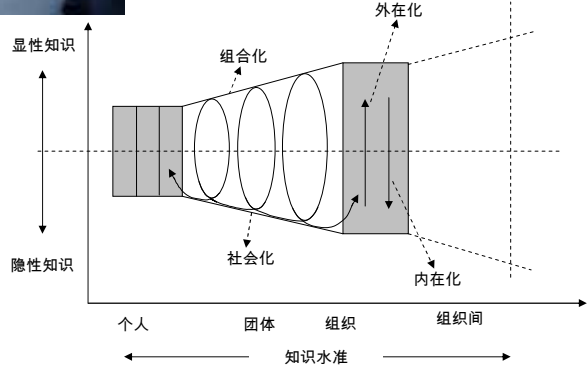






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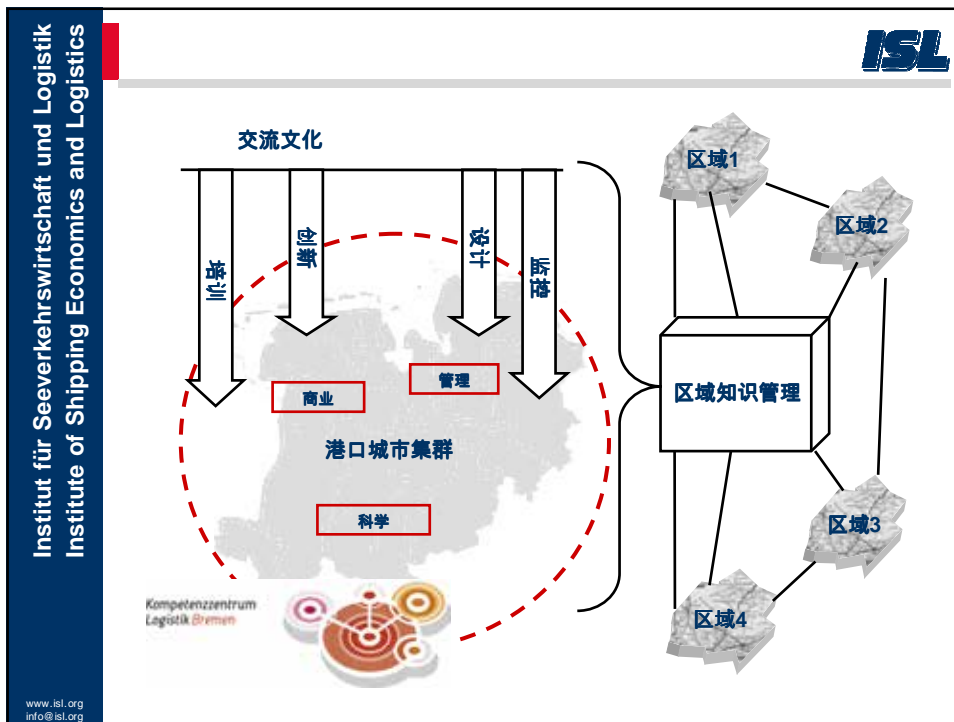
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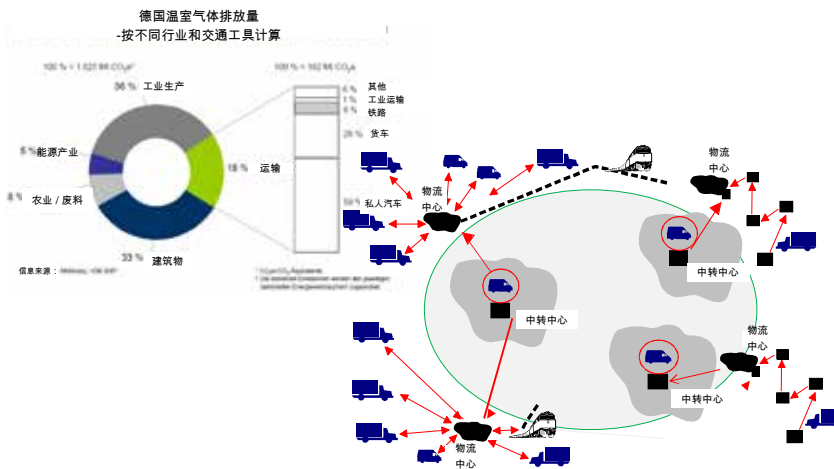




电动汽车在柏林

德国戴姆勒集团和RWE能源集团共同进行的试点项目（照片来自：戴姆勒集团）

城市发展 – 交通管理 – 环境保护



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## 城市发展 – 交通管理 – 环境保护

### 总体规划设想

在考虑到 ( 交通 ) 灵活便利的前提下, 选择合适的地区, 城市和地点 :

- 有良好的近距离服务设施 ( 如 : 购物、学校等 )
- 靠近并方便使用公共交通设施
- 有灵活的供货和废物处理的货物流动方案
- 有可预见的成功可能性

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## 物流和运输的不同发展阶段

知识领域

第一阶段: 功能专业化


第二阶段: 跨领域 ( 研究 )

第三阶段: 管理方案

第四阶段: 合作方案

第五阶段: 物流和运输作为知识领域的一部分

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**Forum “Sustainable Urban and Regional Development”  
on the occasion of EXPO Shanghai  
October 18th, 2010**



a Cooperation Project  
between the City of Trier and  
the Beijing Normal University

**Lecture:  
Eco-city Planning & Management towards Sustainable Development**

Prof. Dr. XU Linyu  
School of Environment, Beijing Normal University





European-Chinese Centre for Education and Research in Regional Development Planning (ECER)

Eco-city Planning & Management towards Sustainable Development

Linyu XU

School of Environment, Beijing Normal University

[xly@bnu.edu.cn](mailto:xly@bnu.edu.cn)

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### Outline

- 1 Urban ecological environment
- 2 Eco-city concepts and approaches
- 3 Eco-city planning and management
- 4 What should we research next step?

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### 1 Urban ecological environment

- The United Nations Conference on Environment and Development, 1992
- Agenda 21: “City plays important role in sustainable development”
- Fast urbanization brings serious urban ecological environment issues

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Large population — Fast urbanization

FACE

Serious urban ecological environment issues

the energy crisis

THREATEN

Urban ecological security

How to desolve?

To enhance ecological planning ↔ To establish eco-city

### Trait of Urban development

Effect on environment

Stage 1: Poverty related

Stage 2: Production related

Stage 3: Consumption related

Stage 4: Eco city

Past and present | future

Economic development

Stage of city development

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### Direction of Urban development

- internationalization, modernization and eco-city
  - ◆ Economic: Richer
  - ◆ Live environment: Higher quality
  - ◆ Society: more justice

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**2 Eco-city concepts and approaches**

- *Outside* — stronger ecosystem
  - Eco safety
- *Inside* —urban complex ecosystem
  - Eco health    vigor

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**Eco-city should be:**

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**Examples of worldwide eco-cities**

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**Paris city zone**

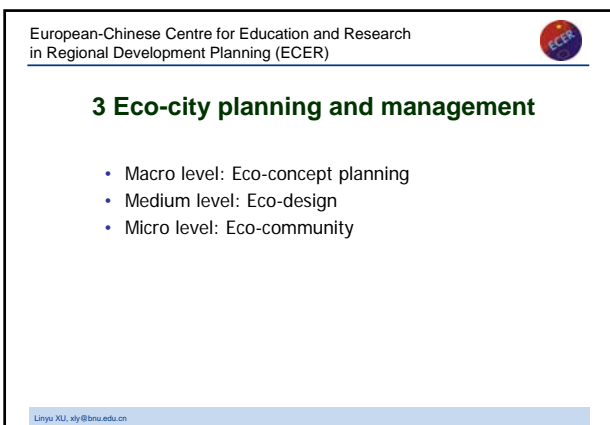
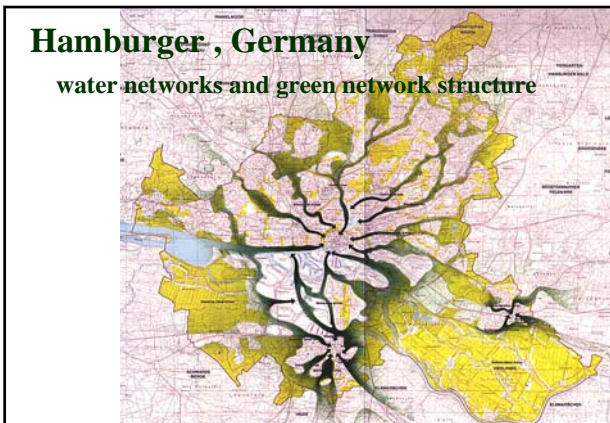
**Stressing on spatial layout: grouping**

**Boston**

**London**

**The London Loop**

**Roads in city zone**



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**Framework of eco-city planning**

- Theory: ecology and sustainable development
- Principle: eco-priority
- Technique: RS & GIS
- Core: interaction mechanism between urban development and ecosystem
- Basis: ecosystem assessment
- Stress: spatially safe structure of urban ecosystem
- Instrument: eco-cell control and digital management
- Objectives: safe, healthy, vigorous, progressive

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4 What should we research on eco-city planning and management towards sustainable development next step?

The eco-city will be in the future:

- More healthy
- More safety
- More vigorous
- More progressive
- Low carbon eco-city

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**What should we do eco-city planning at macro level ?**

- Concept planning of eco-city
- Low-Carbon Eco- City based on ecological cycle, which provides low-carbon green solutions for wastes, energy, water, sewage, ecosystem, culture and transportation. The Comprehensive Plan includes vision or future outlook, and goal, indicator, strategy, basic direction and land use plan to implement the model.



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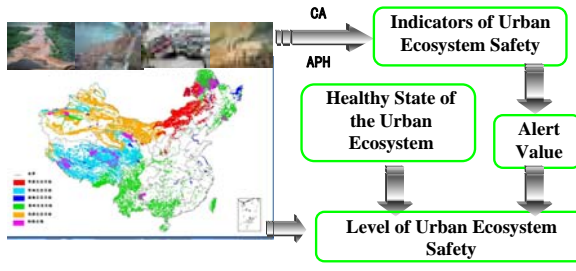
**What should we do eco-city planning at medium level ?**

1. Identify the key factors of Urban Ecosystem
2. Ecological security assessment of urban planning
3. System regulation of eco-city planning
4. Spatial regulation of eco-city planning

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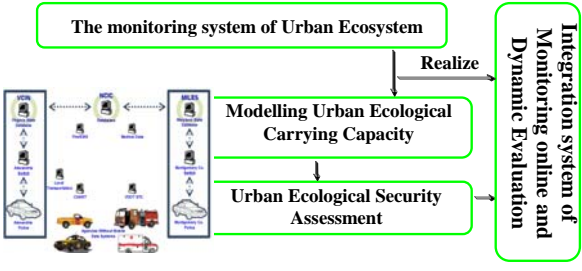
**1. Identify the key factors of Urban Ecosystem**



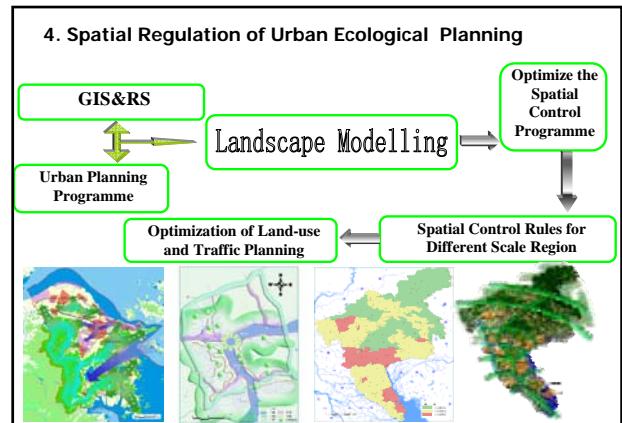
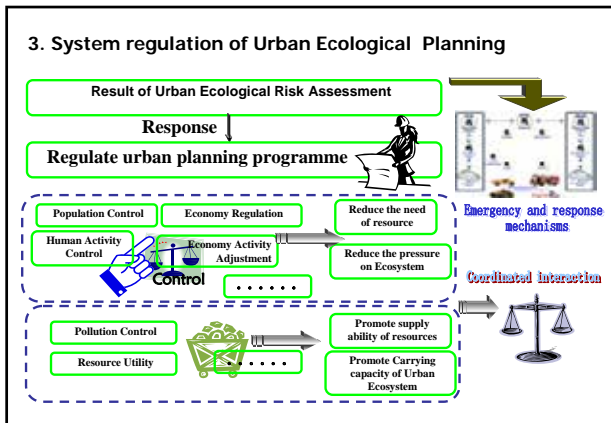
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**2. Urban Ecological Security Assessment**



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**What would we research on eco-city planning at micro level?**

- Environmental protection planning is always missing in or lay behind the development of most small cities and towns.
- Non-regulated development leads to unsatisfactory dwelling condition in the small cities and towns, and domestic garbage and wastewaters are not well treated.

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**Comparative study on environmental planning for the need of urban-rural integration**

- Select one Chinese case and one German case to conduct comparative case analysis, especially on the difference of environmental planning in city and town development.
- Get some advanced experiences on environmental planning, which could contribute to more balanced urban-rural development.
  - Domestic garbage control planning
  - Domestic wastewater control planning
  - Landscape ecology design
  - Comparative analysis on Chinese and German cases

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**Thanks!**

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a Cooperation Project  
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**Lecture:  
Disaster Prevention and Reduction in China**


Dr. YUAN Yi,  
National Disaster Reduction Center of China





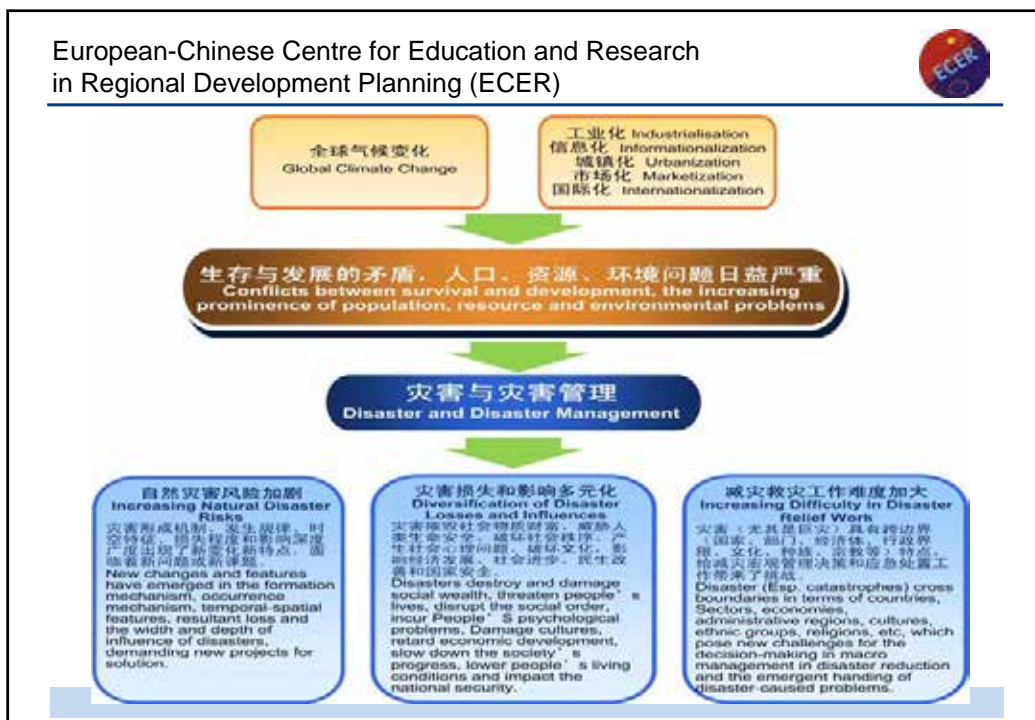


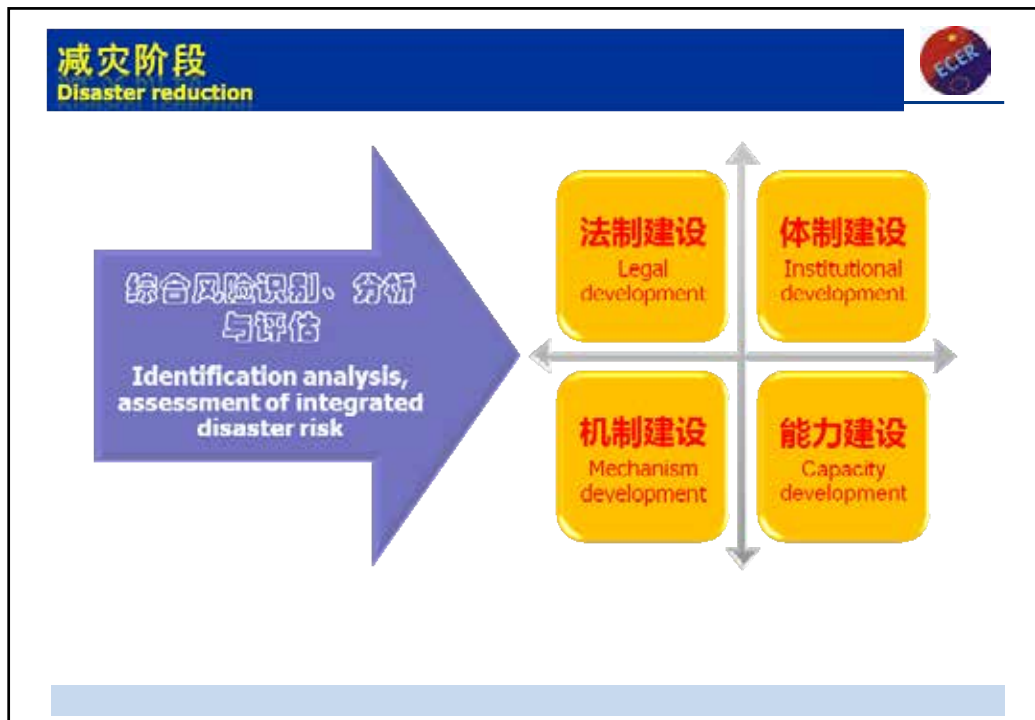
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# I

## 中国的防灾减灾 Disaster Prevention and Reduction in China



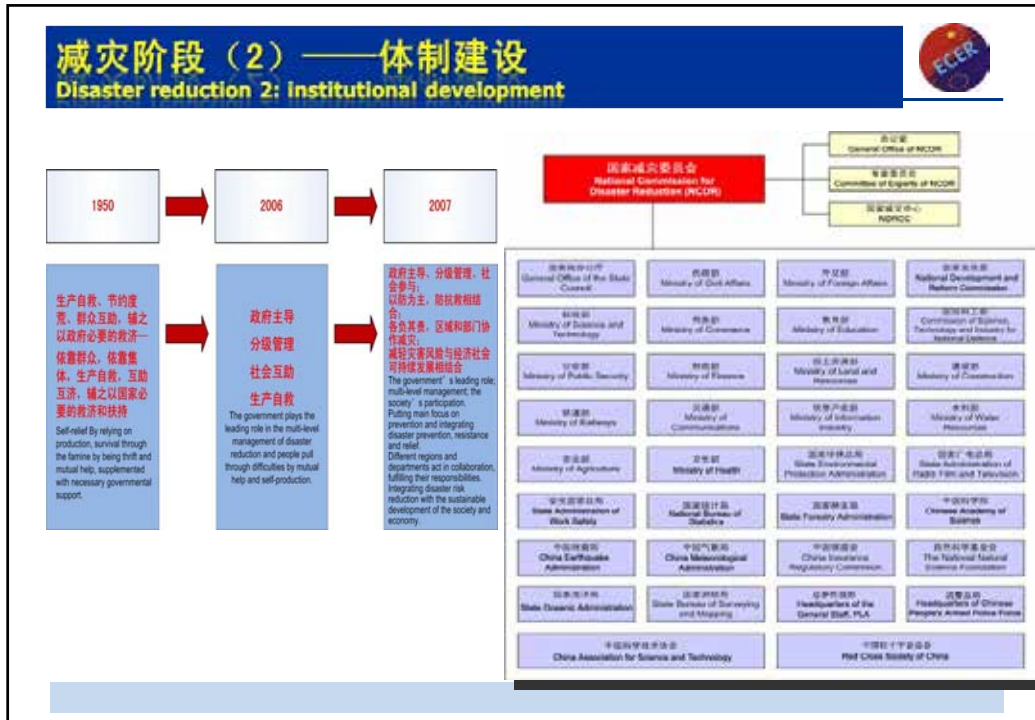


**减灾阶段 (1) —— 法制建设**  
Disaster reduction 1: legal development

《中华人民共和国突发事件应对法》 *Emergency Response Law Of P. R. China*  
 《中华人民共和国水土保持法》 *Law Of P. R. China On Water And Soil Conservation*  
 《中华人民共和国防震减灾法》 *Law Of P. R. China On Protection Against And Mitigation Of Earthquake Disasters*  
 《中华人民共和国防洪法》 *Flood Control Law Of P. R. China*  
 《中华人民共和国防沙治沙法》 *Law Of P. R. China On Desertification Prevention And Transformation*  
 《中华人民共和国气象法》 *Meteorology Law Of P. R. China*  
 《中华人民共和国海洋环境保护法》 *Marine Environmental Law Of P. R. China .....*

《中华人民共和国防汛条例》 *Flood Control Regulations Of P. R. China*  
 《森林防火条例》 *Forest Fire Control Regulations Of P. R. China*  
 《森林病虫害防治条例》 *Regulations On The Prevention And Control Of Forest Plant Diseases And Insect Pests*  
 《地质灾害防治条例》 *Regulations On The Prevention And Control Of Geological Disasters*  
 《破坏性地震应急条例》 *Regulations On The Handling Of Destructive Earthquake Emergencies*  
 《水库大坝安全管理条例》 *Regulations On The Administration Of Security Of Reservoirs And Dams*  
 《救灾条例》 *Regulations On Disaster Relief .....*

《中国21世纪议程》 (1994年3月) *China's Agenda 21 (March 1994)*  
 《中华人民共和国减灾规划(1998-2010)》 (1998年4月) *Disaster Reduction Plan of P. R. China (1998-2010) (April 1998)*  
 《国家综合减灾“十一五”规划》 (2007年8月) *11th Five-year Plan on Comprehensive Disaster Reduction (August 2007)*



### 减灾阶段（4）——能力建设 Disaster reduction 4: capacity development




**减灾工程** Disaster reduction projects



**救灾应急体系**  
Emergency response and relief system

**监测预警体系** Monitoring and early warning system



**科技支撑体系**  
Science and technology system

**人才培养体系**  
Personnel training system



### 备灾阶段 Disaster preparedness

致灾因子监测预警  
Hazard monitoring and early warning







灾害损失预评估  
Preliminary assessment on disaster loss







应急救灾能力评估  
Assessment on emergency and relief capacity







**物资储备** Material reserve

**预案准备**  
Contingency preparedness

**监测预警**  
Monitoring and early warning

### 灾害发生——应急救灾阶段 Disaster occurring: emergency response and relief

**灾情快速处理、评估**  
Rapid collection, analysis and assessment of disaster damage

**灾中风险评估与损失预评估**  
Risk assessment and preliminary loss assessment during disaster

**应急救灾需求**  
Assessment on emergency response and relief demand





**灾民转移安置**  
Evacuation

**人员调动**  
Personnel mobilization

**基础设施快速恢复**  
Rapid recovery of infrastructure

**物资调拨**  
Material allocation

**资金拨付**  
Fund allocation

**社会动员**  
Public mobilization





### 恢复重建阶段 Reconstruction and recovery

**灾情全面调查评估**  
Integrated disaster assessment

**社会经济影响评估**  
Social and economic effect assessment

**应急救灾效果评估**  
Emergency and relief effect assessment

**恢复重建工作评估**  
Reconstruction work assessment





**生活全面恢复**  
Production reconstruction and recovery

**生活全面恢复**  
Daily life reconstruction and recovery






**中国的综合减灾发展展望**  
**Prospect for the Development of Comprehensive Disaster Reduction in China**



- 1 综合减灾与应急管理并重**  
Setting Equal Priorities for Comprehensive Disaster Reduction and Emergency Management
- 2 将综合减灾纳入可持续发展规划**  
Incorporating Comprehensive Disaster Reduction into Sustainable Development Plans
- 3 重视灾害风险管理，特别是社区风险管理**  
Attaching Greater Importance to Disaster Risk Management and Community Risk Management
- 4 建立健全城市防灾减灾体系**  
Establishing Urban Disaster Prevention and Reduction Systems
- 5 巨灾应对机制亟待建立健全，应对能力亟待加强**  
Strengthening Catastrophe Response Capacities
- 6 加强对全球气候变化的适应**  
Enhancing Adaptation towards Global Climate Change
- 7 加强金融手段在灾害风险分担中的应用**  
Expanding the Application of Financial Instruments in Disaster Risk Sharing

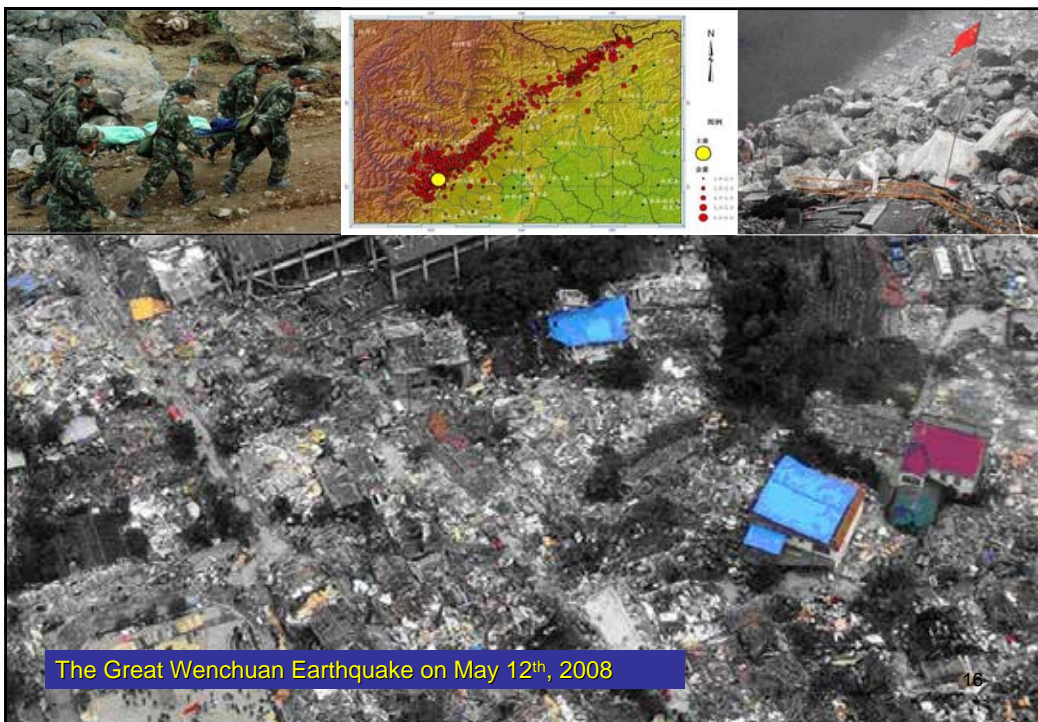
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# II

## 城市灾害特点

### The Characteristics of Urban Disasters







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### 城市灾害风险 Urban Disaster Risks

➤ 暴雨、台风、强对流天气  
Rainstorm, typhoon, severe convective weather



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➤ 干旱和高温热浪  
Drought and threat of high temperature and  
heat waves



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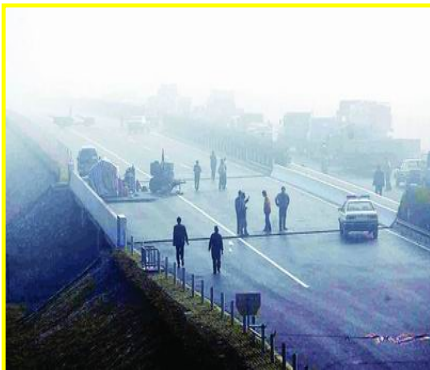
➤ 暴雪、冰冻  
Snowstorm and freezing



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➤ 大雾 Dense Fog





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➤ **人口的高密度性和复杂性**  
The high density and complexity of population  
常住人口、暂住人口、流动人口  
Resident population, temporary residents, floating population

The block contains three photographs illustrating high population density and complexity. The top right photo shows a dense crowd of people in a public space, with an 'EXIT' sign visible above. The bottom right photo shows a large crowd of people, possibly at a transit station, with blue stanchions and barriers. The bottom left photo shows a large, brightly lit stadium or arena filled with a massive crowd of people. The ECER logo is in the top right corner.

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► **建筑的高密度性和复杂性**

The high density and complexity of buildings

□ 民用住宅、办公用房、公益用房、商业用房、工业用房  
Residential housing, office house, public house,  
commercial buildings, industrial buildings

□ 高层建筑、地下建筑 High-rise buildings, Underground  
buildings



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► **基础设施的高密度性和复杂性**

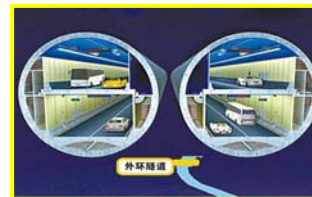
The high density and complexity of infrastructures

□ 交通设施：轨道交通、高架公路、越江隧道，空港客运、  
内河运输

Transportation: Railway transportation, elevated  
highway, under-river tunnel, airport transportation, Inland  
river transportation

□ 供水设施、供电设施、通讯设施、排水设施.....

Water supply facilities, power supply facilities,  
communication facilities, drainage facilities.....

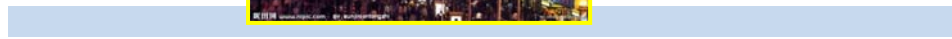


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► 工业、服务业的高密度性和复杂性

The high density and complexity of the industry and services



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# III

## 中国城市防灾减灾 Urban Disaster Prevention and Reduction in China



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**城市灾害应急系统**  
**Emergency Response System against Urban Disasters**

- 组织系统 Organizational System
- 预案体系 Emergency procedure system
- 应对机制和措施 Response mechanism and measures




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**避难场所 Shelters**




**北京市中心城已建地震应急避难场所位置示意图 (24个)**  
**Locations of built emergency shelters against earthquakes in central Beijing**



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**防灾减灾宣传教育中心**  
**Training and Education Center for  
Disaster Prevention and Reduction**



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**社区减灾**  
**Community Disaster Reduction**





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**应急救灾物资储备**  
**Material Reserve for Emergency and Relief**



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目前，中国很多城市的设防水平还比较低，未来遭受自然灾害造成的人员伤亡与经济损失的风险越来越大。而中国传统的灾害管理以农村地区为主，城市灾害的监测预警、应急响应、恢复重建等环节都相当薄弱。建设城市综合风险管理与应急救助体系，提高系统防灾减灾能力，有利于将灾害损失降到最低水平，是实现社会可持续发展的重要保障。

Currently, many cities in China are not protected enough from the onslaught of natural disasters and thus run very high risk of casualties and economic losses once a natural disaster actually occurs. The focus of China's disaster management has been traditionally on rural areas, leaving the cities rather weak in disaster forecasting, early-warning, emergency response, recovery, and reconstruction. Establishing comprehensive risk management and emergency relief systems in cities and improving their disaster prevention and reduction capacities will contribute to the reduction of disaster-induced losses and serve as an important guarantee for the realization of sustainable development of the country's economy and society.



**Thank You**

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**Forum “Sustainable Urban and Regional Development”  
on the occasion of EXPO Shanghai  
October 18th, 2010**



a Cooperation Project  
between the City of Trier and  
the Beijing Normal University

**Lecture:  
Perspectives of the Implementation of ECER from Chinese Points of View**

Prof. Dr. SHI Peijun, Executive Vice President,  
Beijing Normal University





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## Perspectives of the Implementation of ECER from Chinese Points of View

Prof. SHI Peijun, Executive Vice President, Beijing Normal University

October 18th, 2010, Shanghai

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### Contents

- 1 Academic Education
- 2 Professional Training
- 3 Research

Prof. SHI Peijun, Executive Vice President, Beijing Normal University



## 1 Academic Education

- Achievements

- 19 selected bachelor students of Beijing Normal University: Master program on “Infrastructure Planning” at the University of Stuttgart
- Universities in dialogue:
  - Germany/Europe: RWTH Aachen, FU Berlin, University of Trier, Luxembourg, Kaiserslautern, ETH Zurich, et al.
  - China: Beijing Jiaotong University, East China Normal University, Xiamen University, Sun Yat-sen University, Yunnan University, Wuhan University, et al.

Prof. SHI Peijun, Executive Vice President, Beijing Normal University



## 1 Academic Education

- Future Orientations

- Sending more Chinese students to first-class European universities for advanced European knowledge and experiences
- Develop PhD programs as well as master programs
- Tuition free or reduced program for best Chinese students

Prof. SHI Peijun, Executive Vice President, Beijing Normal University



## 2 Professional Training

- Achievements
  - Two pilot seminars were carried out in Germany/Europe
    - Catastrophe Prevention and Disaster Management (May 2009)
    - Transportation Planning (November 2009)
    - *50% participants with academic background, 50% practioners*
  - One post-seminar in Beijing Normal University
    - Disaster Emergency Management System (September 2010)
    - *100% practioners studying for academic degree*

Prof. SHI Peijun, Executive Vice President, Beijing Normal University



## 2 Professional Training

- Future Orientations
  - Getting more financial supports
  - Places: more programs inside China
  - Participants: promising young practioners as majorities

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### 3 Research

Legend „Modules ECER“

- Academic Education
- Vocational Training
- Research



Legend „Department“

- Economics
- Ecology
- Sociology
- Jurisprudence

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### 3 Research

- Application-oriented research
  - To be integrated into Sino-Europe/Germany cooperation frameworks
  - One Think-tank per year for knowledge and information exchange of European and Chinese experts and practitioners
  - Integration with the implementation of PhD programs and professional trainings

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**Thanks for your attention!**

Prof. SHI Peijun, Executive Vice President, Beijing Normal University