CHINA SPATIAL PLANNING AND DEFINITIONS OF THREE BOUNDARIES

Dr. Yuntai Zhao, Rosy Liao
China land surveying and planning institute
Ministry of Land and Resources of the PRC
zhaoyuntai@163.com
2016/11/10
• Background
• Achievements and problems
• Research ideas of three boundaries
• Future work
BACKGROUND

- Over 80
- More than 20 according to the law
- Complex system
### Key Plannings

<table>
<thead>
<tr>
<th>Type</th>
<th>Law</th>
<th>Department</th>
<th>Process</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Five Year Plan for National Economy and Social Development</strong></td>
<td>![Image]</td>
<td>national development and reform commission</td>
<td>From 1953, more than 60 years.</td>
</tr>
<tr>
<td><strong>Major function oriented zoning</strong></td>
<td>none</td>
<td>national development and reform commission</td>
<td>From 2006, officially implementation in 2010.</td>
</tr>
</tbody>
</table>
| **Territory planning**                        | none | ministry of land and resources of the PRC   | 1\(^{st}\) round from 1985  
2\(^{nd}\) round from 2014 (in process)                              |
| **Town and Country Planning**                 | ![Image] | ministry of housing and urban-rural development of the PRC | From 1980s, overestimate the urban space                               |
| **Land use planning**                         | ![Image] | ministry of land and resources of the PRC   | 1\(^{st}\) : 1987  
2\(^{nd}\) : 1997  
3\(^{rd}\) : 2004  
4\(^{th}\) : 2018                                            |
| **Environment protection planning**           | ![Image] | ministry of environmental protection of the PRC | As an important component of Five Year Plan for National Economy and Social Development |
\( \text{NESD from 1953, each 5 years.} \)

\( \text{TP from 1985, not approved, first mention among the Yangtze River and Coasts Development Strategy} \)

\( \text{Town and country planning from 1984} \)

\( \text{Land use planning from 1987} \)

\( \text{EPP from 1981, as a part of NESD} \)

\( \text{MFOZ from 2006} \)

\( \text{Second TP from 2014} \)
Achievements

- Relatively scarce resources
- Rapid growth in the past 30 years

<table>
<thead>
<tr>
<th>type</th>
<th>1978</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>360 billion</td>
<td>30070 billion</td>
</tr>
<tr>
<td>urbanization rate</td>
<td>17.9%</td>
<td>45.7%</td>
</tr>
</tbody>
</table>
Achievements

- 10% cultivated land
- 20% population

<table>
<thead>
<tr>
<th>type</th>
<th>1978</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total grain output</td>
<td>0.31 billion ton</td>
<td>0.53 billion ton</td>
</tr>
<tr>
<td>Per capita</td>
<td>319 kg</td>
<td>398 kg</td>
</tr>
<tr>
<td>Rural poor</td>
<td>0.25 billion</td>
<td>0.04 billion</td>
</tr>
</tbody>
</table>
Achievements

The coordination of regional economics and the development between cities and the countryside.

- The strategy of western development
- The strategy of rejuvenating old northeastern industrial bases
- The strategy of middle-part development

1978-2008, the per-capita income rise of rural and urban residents increased by 680% and 700%.
Achievements

- Increasing the utilization rate of energy and resources
- Making progress in eco-environmental protection

pollutant discharge of per-unit GDP

Convert arable land to forestry (pasture) control soil erosion
Problems

- The factor of natural environment
- The factor of economy and society
The factor of natural environment

- Environmental pollution
- The deterioration of the ecosystem function

- Soil erosion
- Grasslands deterioration
- Environment quality fall down
- Atmospheric haze in some urban groups
- Heavy metal pollution of the soil in some provinces
The factor of natural environment

- Relatively low efficiency of resources
  
  — per-unit GDP of water consumption, 330%
  — per-unit GDP of energy consumption, 250%,
  — the plot ratio of industrial land, 0.3-0.6
The gap among eastern, middle and western regions of China

<table>
<thead>
<tr>
<th></th>
<th>1978</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>eastern</td>
<td>52</td>
<td>59</td>
</tr>
<tr>
<td>middle</td>
<td>31</td>
<td>27</td>
</tr>
<tr>
<td>western</td>
<td>17</td>
<td>14</td>
</tr>
</tbody>
</table>

——2010, the economic density in the eastern region is 3.7 and 19.8 times of those in the middle and western regions respectively.

——Restricted by historical, social and natural conditions, the economic and social development of particular area is backward, such as border area, many ethnic minority areas.
Reason: spatial management

- Big difference in executive results appears. For example, the regulatory planning violate the master planning.

- At present, some local authorities are eager to build ostentatious "image" and "administrative achievement" projects. In urban development, they indiscriminately pursue things of the highest grade or standard.
Reason: spatial management

Urban planning

Land use planning
The government of China established a unified spatial planning system so as to coordinate the present contradiction.
Four Parts

- Resources and environment carrying capacity
- Coordinate different plannings
- Definition of three boundaries: Red line of ecological protection, Red line of basic farmland, The boundary of urban growth
- Spatial informations platform construction
The red line of ecological protection

Ecological sensitivity evaluation

Based GIS

Topography, slope, Geological hazards

Ecological sensitivity evaluation
The red line includes: Ecological forest, ecological corridor, important rivers and drainage, public park, urban greenspace and so on.
The red line of basic farmland
The red line of basic farmland
Urban growth boundary

UGB of Harbin

UGB of Jinan

Hangzhou

Wuhan
Spatial informations platform construction

- Environmental protection
- Marine
- Forestry
- Water conservancy
- Transportation
- Education
- Health care
- Agriculture
Spatial informations platform construction
At present, 28 cities and counties have carried out the spatial planning, and they are summing up experience. Part of the provinces are carrying out related work.
Future work

- Clear space planning
- Clear planning
- Perfect the construction of information platform
THANK YOU!

Acknowledgement: Hanns Seidel Stiftung