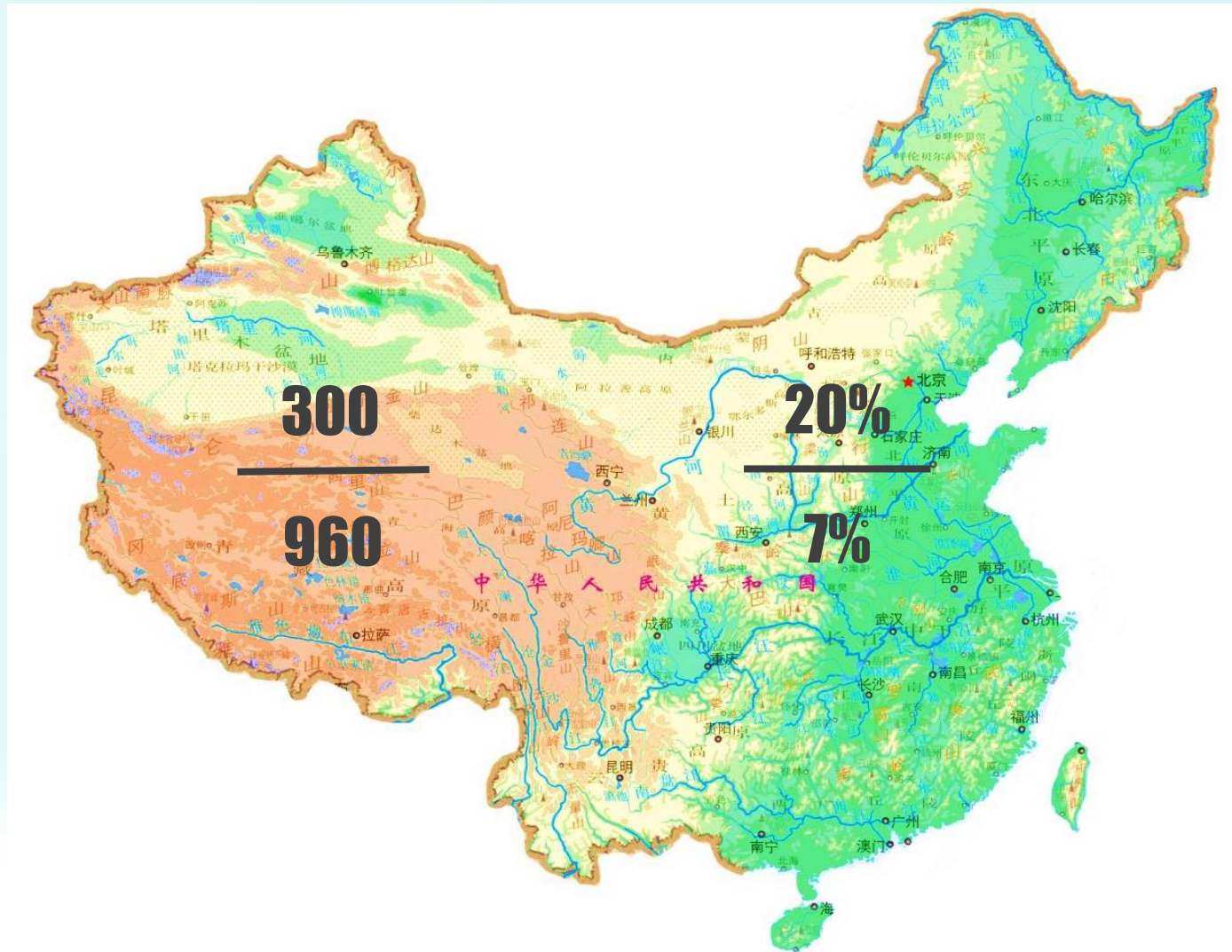# Land Survey
# for Land Governance in China

**Guo Renzhong**

**Municipal Commission of Planning and Land Resources**

**Shenzhen, China**

# Background : General situation



300 / 960

20% / 7%

数据来源：国家统计局、国土资源部

# Background :

## Urbanization vs Food Security



Source: Baidu

# Background :

## Stringent land use policies

- **Controling the speed of city expansions**
- **Protecting cultivated lands**

National  plan for yearly land development

Provincial land development plan

Local plan for all cities
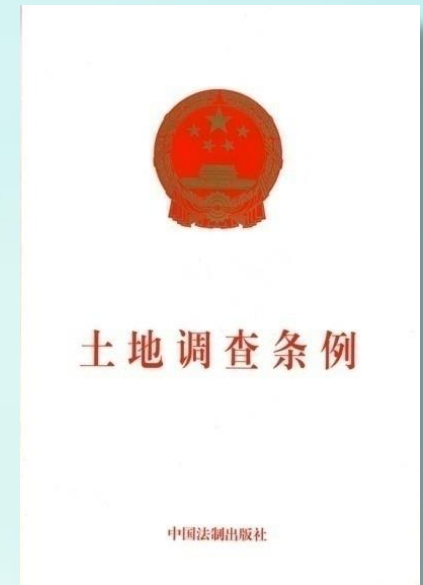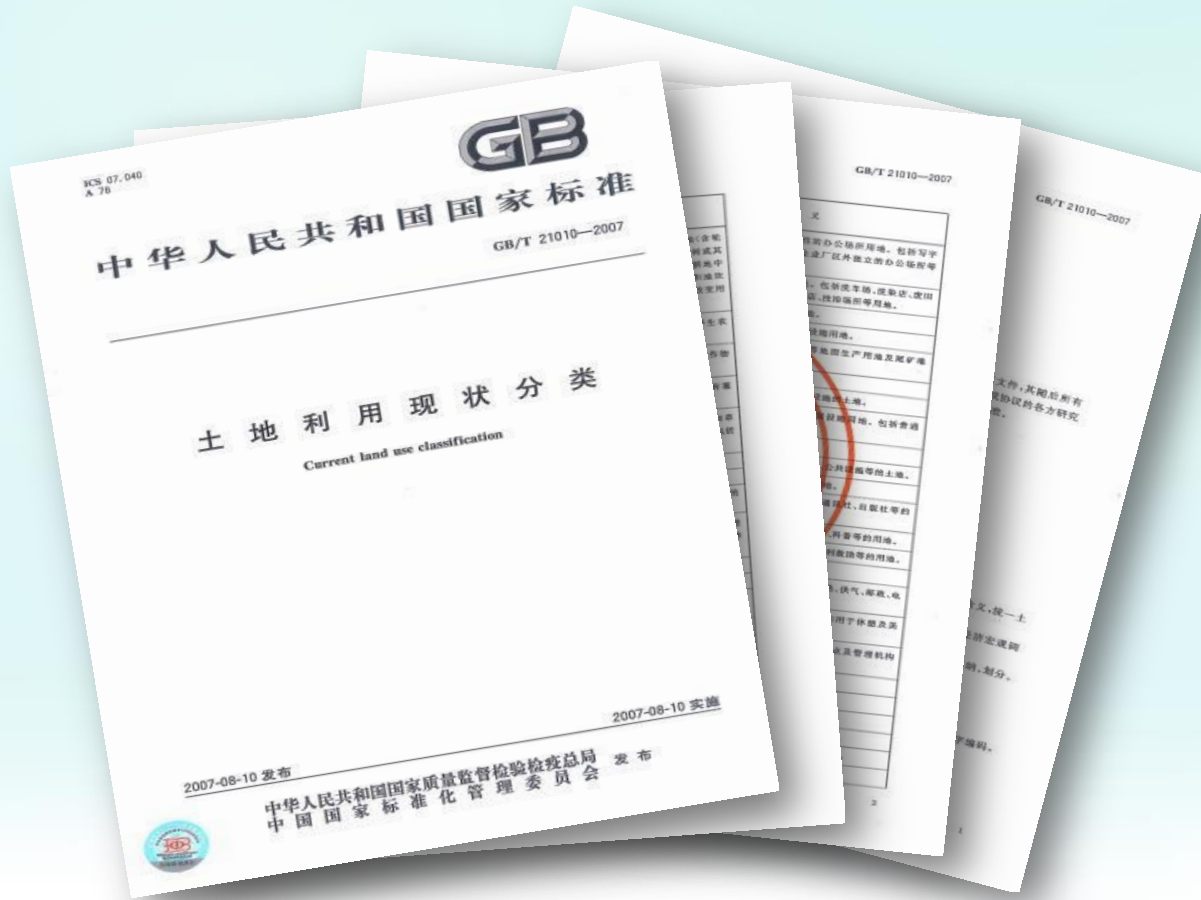
No city can develop more land than granted

# Land survey(2007-2009)

In order to enforce the land use plan, it's necessary for the central government to monitor and review the overall land use conditions. As such, during the period of 2007-2009, China implemented a nation-wide land survey which is the first survey based totally on geospatial technologies, and covering the whole country.

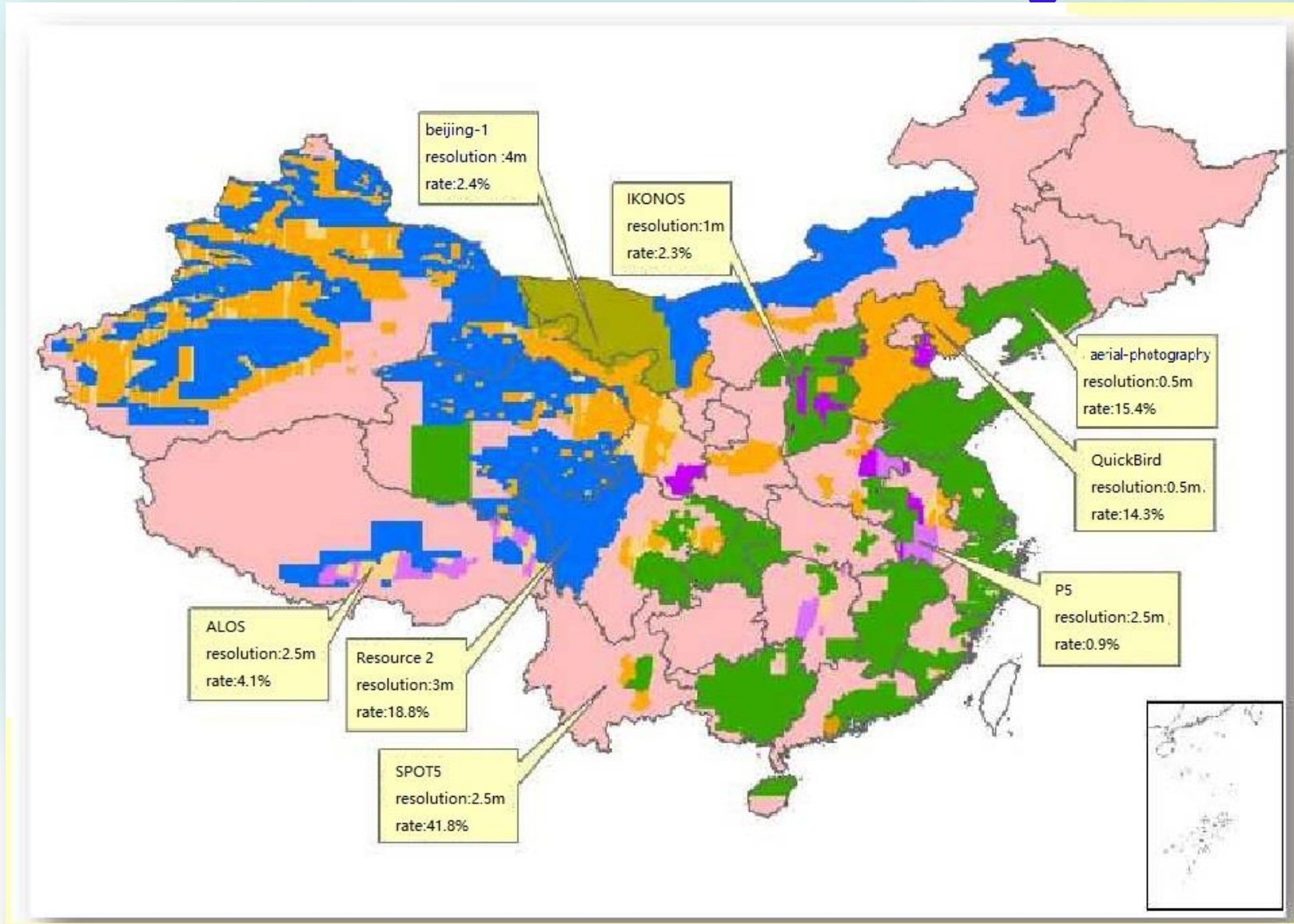# Implementation :

**A series of unified technical standards**



*Land use classification standards*

*Land Survey Ordinance*

# Implementation:

## Images used



beijing-1
resolution :4m
rate:2.4%

IKONOS
resolution:1m
rate:2.3%

aerial-photography
resolution:0.5m
rate:15.4%

QuickBird
resolution:0.5m.
rate:14.3%

P5
resolution:2.5m
rate:0.9%

ALOS
resolution:2.5m
rate:4.1%

Resource 2
resolution:3m
rate:18.8%

SPOT5
resolution:2.5m
rate:41.8%

# Implementation:

## Images resolutions

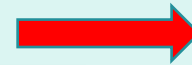| | |
|---|---|
| Air-photo | 0.5m |
| QuickBird | 0.5m |
| IKONOS | 1m |
| SPOT 5 | 2.5m |
| Resource 2 | 3m |

## Working base map 1:10000

# Implementation :

## Field work and data integrating
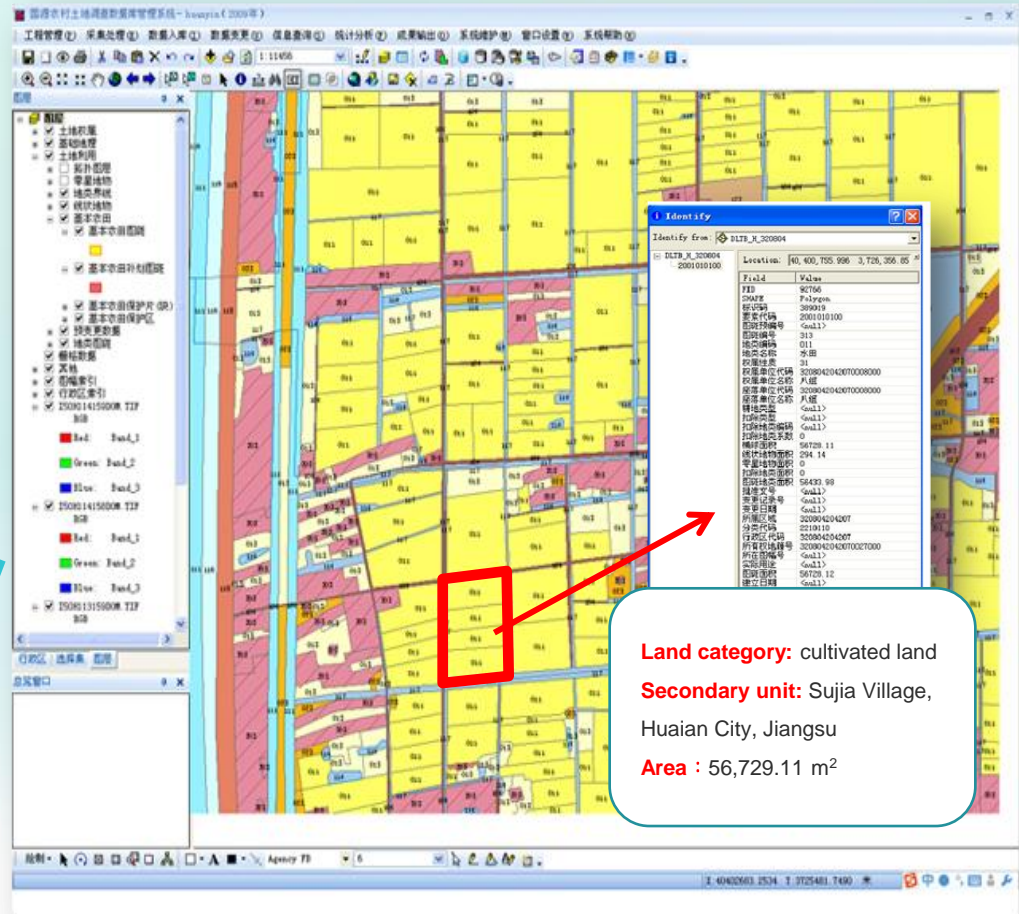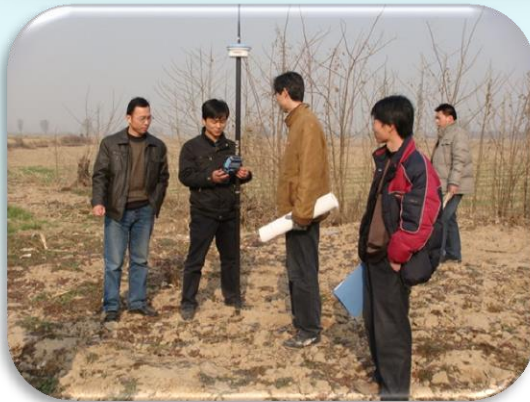


**Land category:** cultivated land
**Secondary unit:** Sujia Village, Huaian City, Jiangsu
**Area**：56,729.11 m²

# Implementation :

## Data validating

# Results:                    Land cover data

| Land category name | Area(Mio km²) | Proportion (%) |
|---|---|---|
| Cultivated land | 1.345 | 14 |
| Garden plot | 0.148 | 2 |
| Forest land | 2.540 | 27 |
| Grassland | 2.873 | 30 |
| Urban and village land | 0.287 | 3 |
| Transportation land | 0.079 | 1 |
| Water area | 0.426 | 4 |

# Results: National Land Use Database



Source: MLR of China

# Results: data updating mechanism created

**The survey laid down a foundation to trace land use changes year on year, and enabled timely data updating**
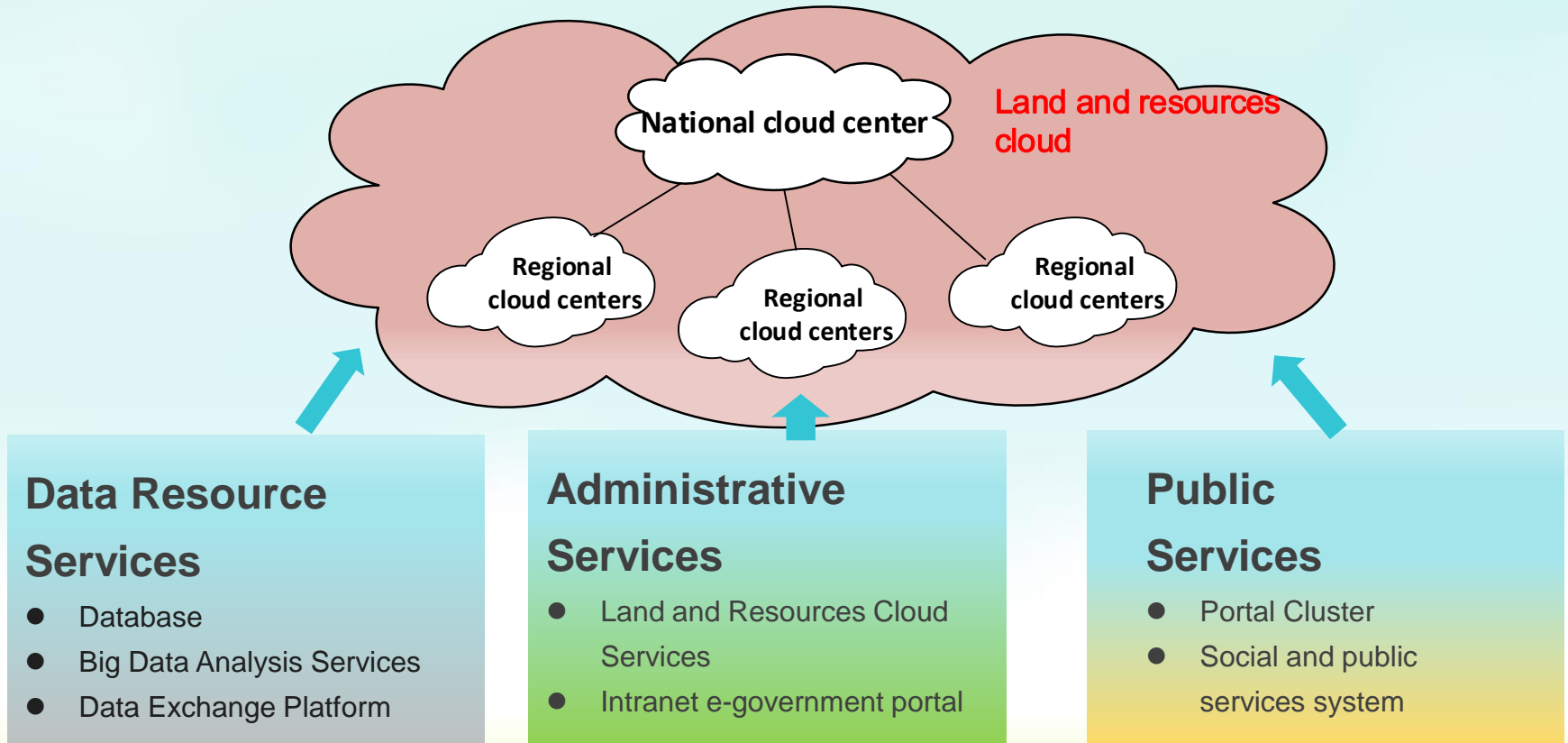
## Land and Resources Cloud

Land use data are to be integrated with all other data resources, and shared among government agencies of different levels and to the public.

National cloud center

Land and resources cloud

Regional cloud centers

Regional cloud centers

Regional cloud centers

**Data Resource Services**

- Database
- Big Data Analysis Services
- Data Exchange Platform

**Administrative Services**

- Land and Resources Cloud Services
- Intranet e-government portal

**Public Services**

- Portal Cluster
- Social and public services system

The way land data are captured and managed in China is consistent with China's system and circumstances.

Many factors are related to land governance, social systems, physical conditions, etc. Situations may vary from country to country, different policies may be implemented, thus, different data are needed,  and different methods should be used.

# Thank You !