

地理普查：国家与国际综合数据集

A Geographical Census : Comprehensive National and International Datasets

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联合国全球地理信息管理亚太委员会 (UN-GGIM-AP)**

**美国 纽约 联合国总部 UNHQ , New York, USA
2014年8月5日 Aug. 5,2014**

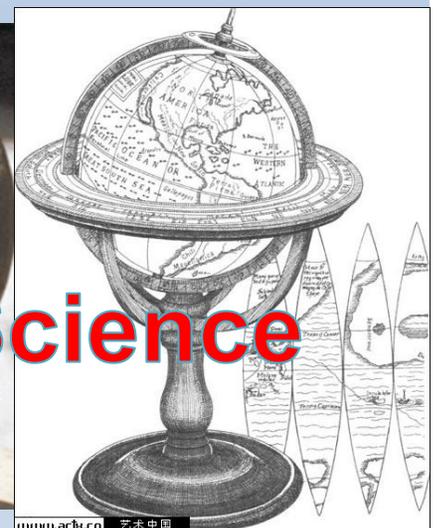
Content

1. Changing world and Views
2. Integration of Geospatial and Statistical Information
3. GlobeLand 30
4. China National Geography Census
5. A Global Geography Census

1.

Changing World and Views

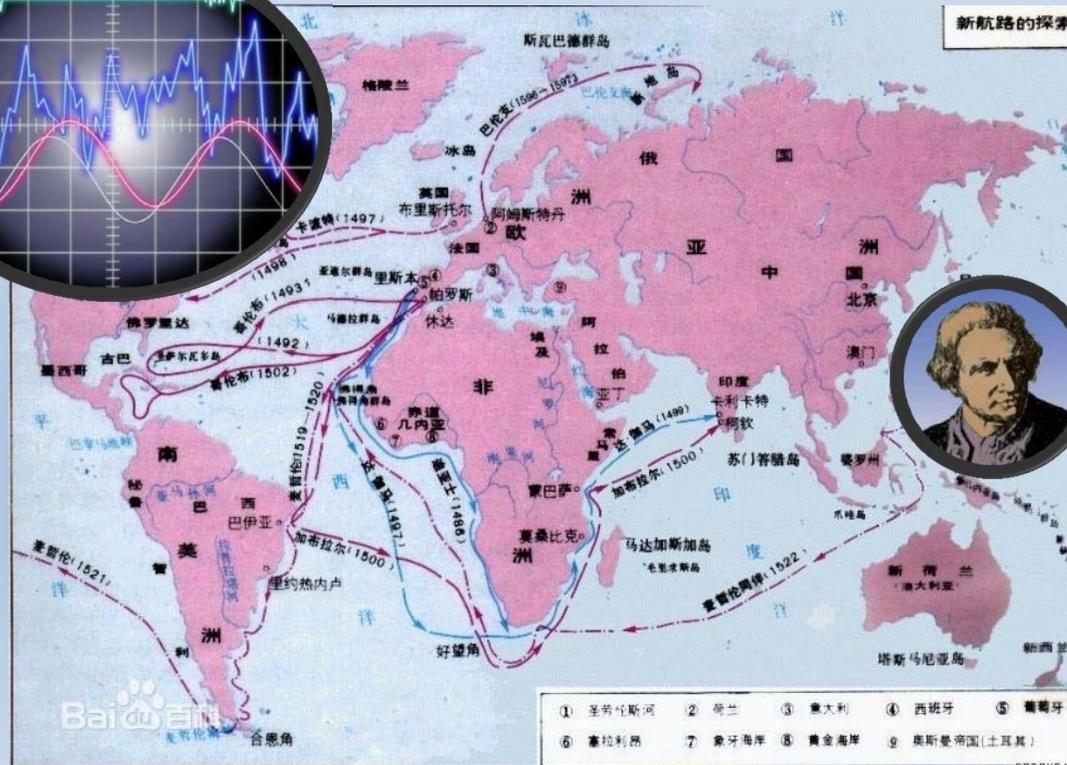
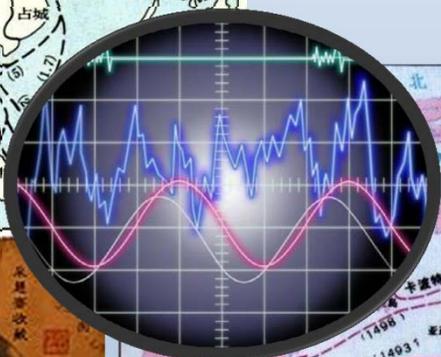
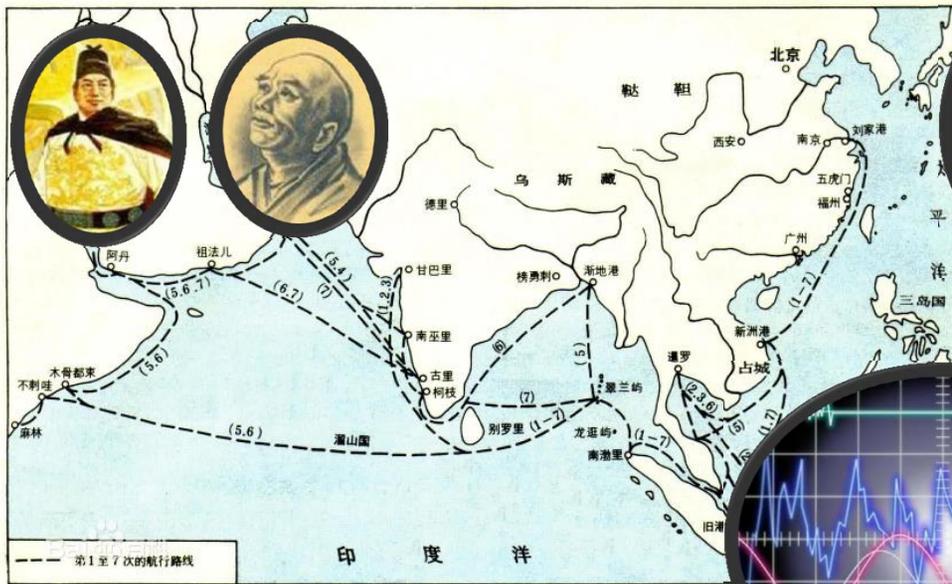
Various Views of the World



Measuring and Monitoring the World



郑和下西洋路线图



Data is power!



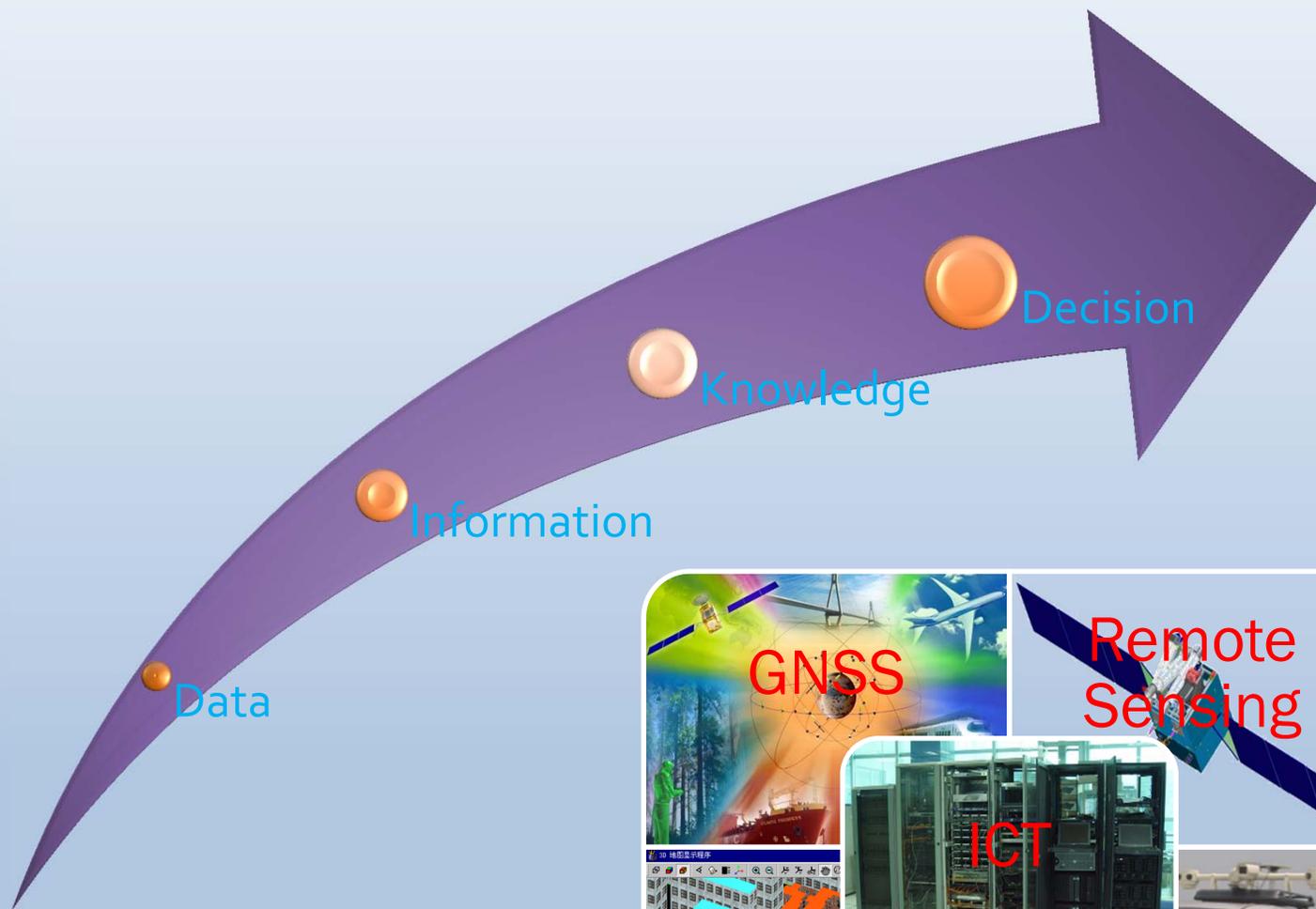
What?

How?

Who?

When?

Where?



Data

Information

Knowledge

Decision



GNSS

Remote Sensing

ICT

GIS

Mobile Mapping

A Smarter World We Want

Digital Earth



Smarter World

Geospatial
Data

Geo
Sensors

Geo-Reference
& Standards



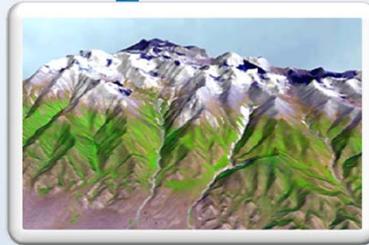
Social-
Economic
Data

Social-
Economic
Census

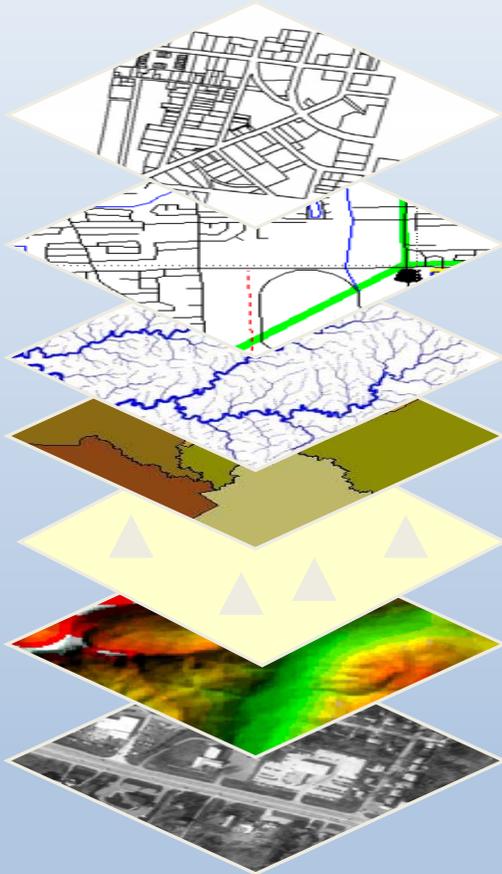
Geocoding &
Standards



Survey and Analysis



Geo-Analysis



Cadaastre

Transportation

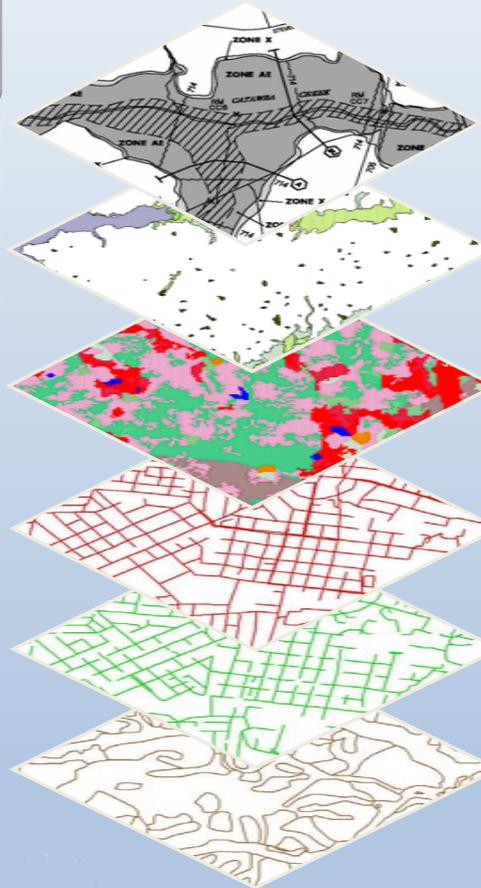
Water System

Boundary

Geodesy

Digital Elevation

Digital Orthophoto



Flooding

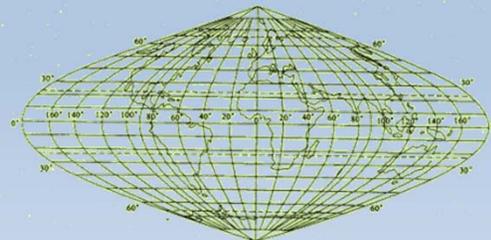
Demography

Land Cover

Water Supply

Drainage

Soil



Geocode & Geogrid

2.

Integration of
Geospatial and
Statistical
Information

Census and Statistics

Population
Census

Service
Industry Census

Industry Census

Agricultural
Census

Economic
Census

Water Census

Land Use
Census

Soil Survey

Place Name
Census

Pollution Sites
Survey

Forestry Census

Cultural
Heritage Census

International Workshop on Integrating Geospatial and Statistical Information

UN Statistics Division
(Secretariat of UN Statistical Commission,
and Secretariat of UN-GGIM)

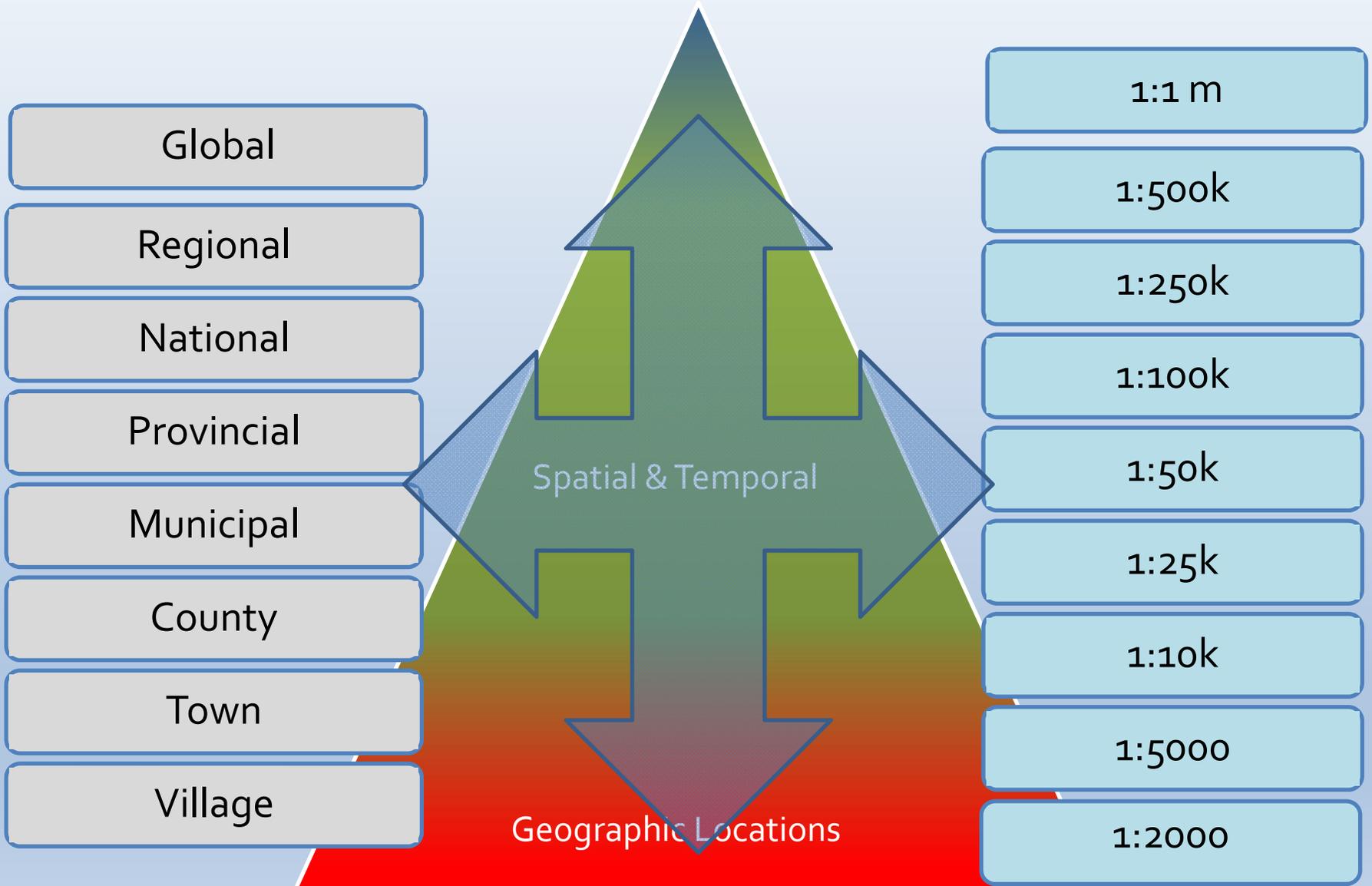
NASG, China

UN-GGIM-AP

June 9-12, 2014 Beijing



Integrating Statistical & Geographic Data

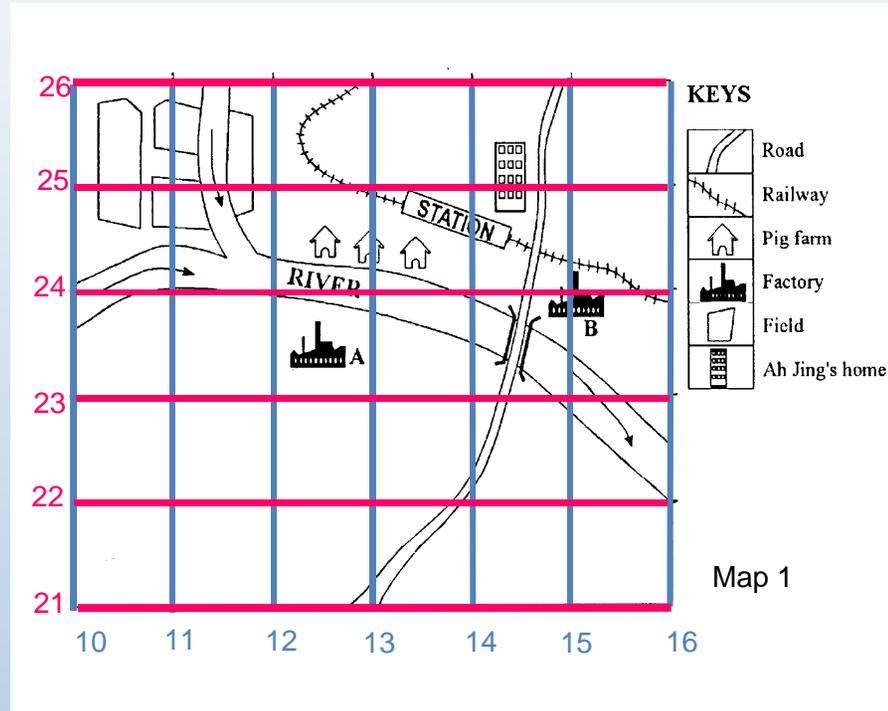
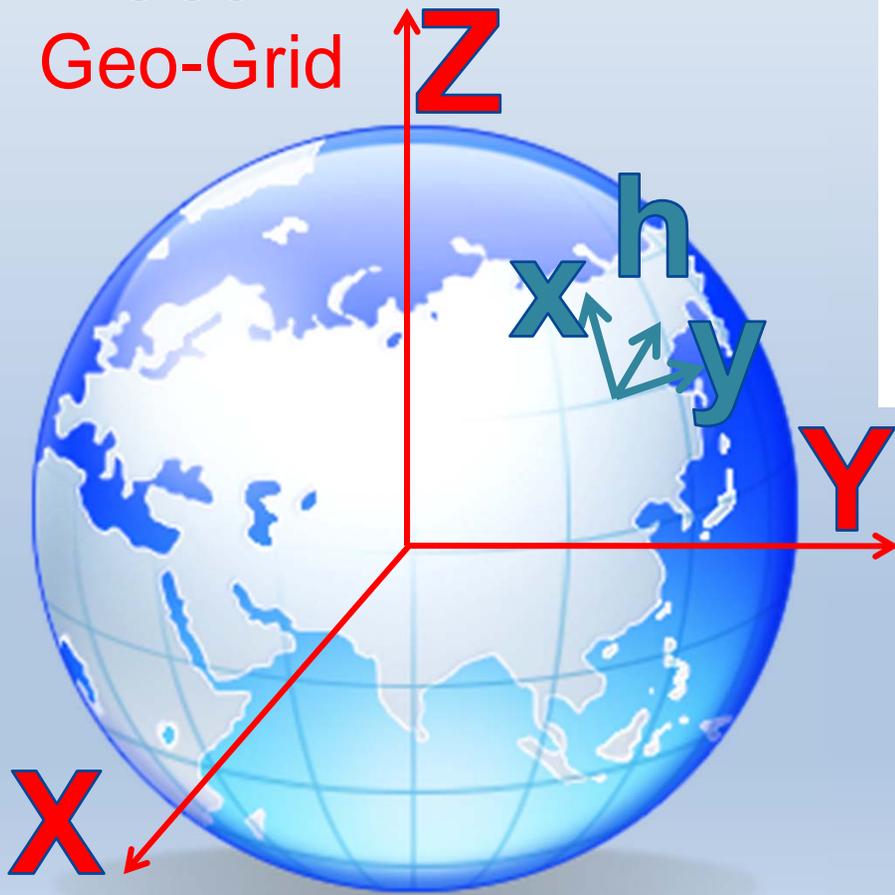


Administration

Map Scale

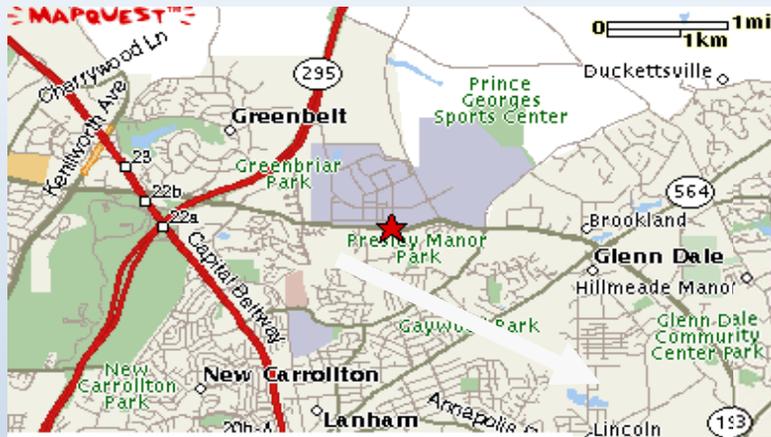
Geographic Location and Grid

Geographic
Geodetic
WGS84
Geo-Grid



Place names
Address
Zip Code
Road Milestone
Azimuth

Geographic Data Modelling



Visual World

Symbolization

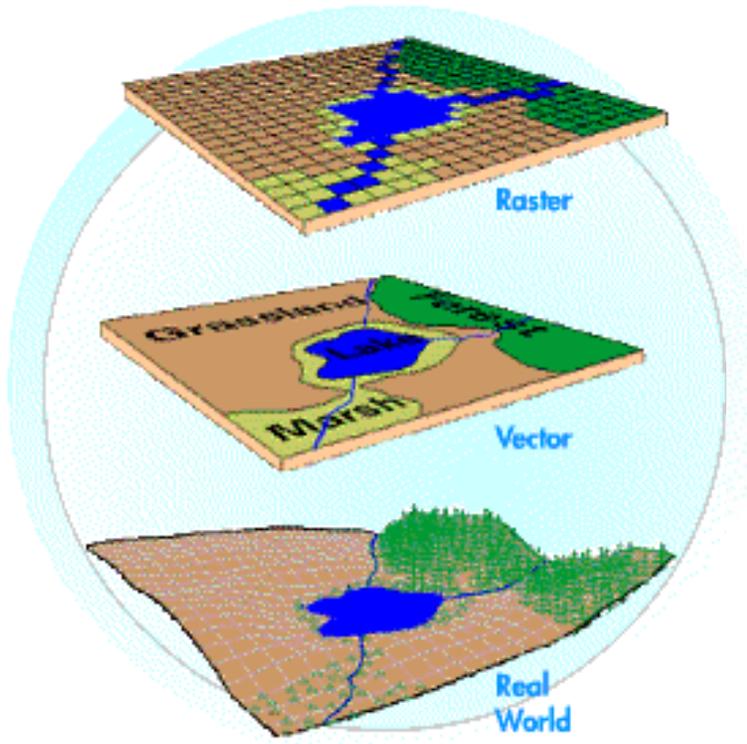
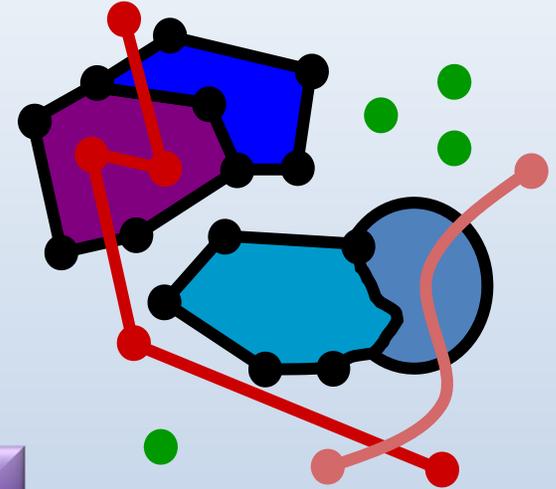
Logical World

Metadata & Data Dictionary

Conceptual World

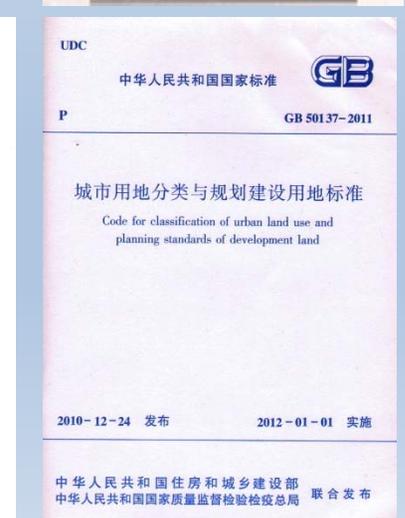
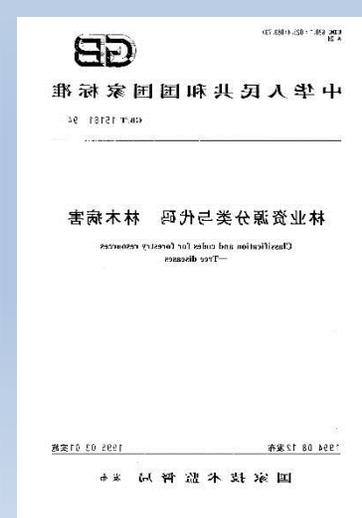
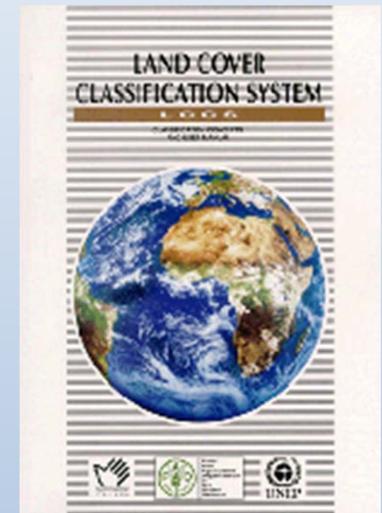
Classification and Coding

Real World



Geo-Statistical Standards

- China Current Land Use Classification
- Remote Sensing Classifications for Environment, Forestry, Agriculture and Scientific Research
- FAO: Land Cover Classification System
- Europe: CORINE Land Cover Technical Guide
- USA: USGS Land Use and Land Cover
- NASG/GEO: GlobeLand30

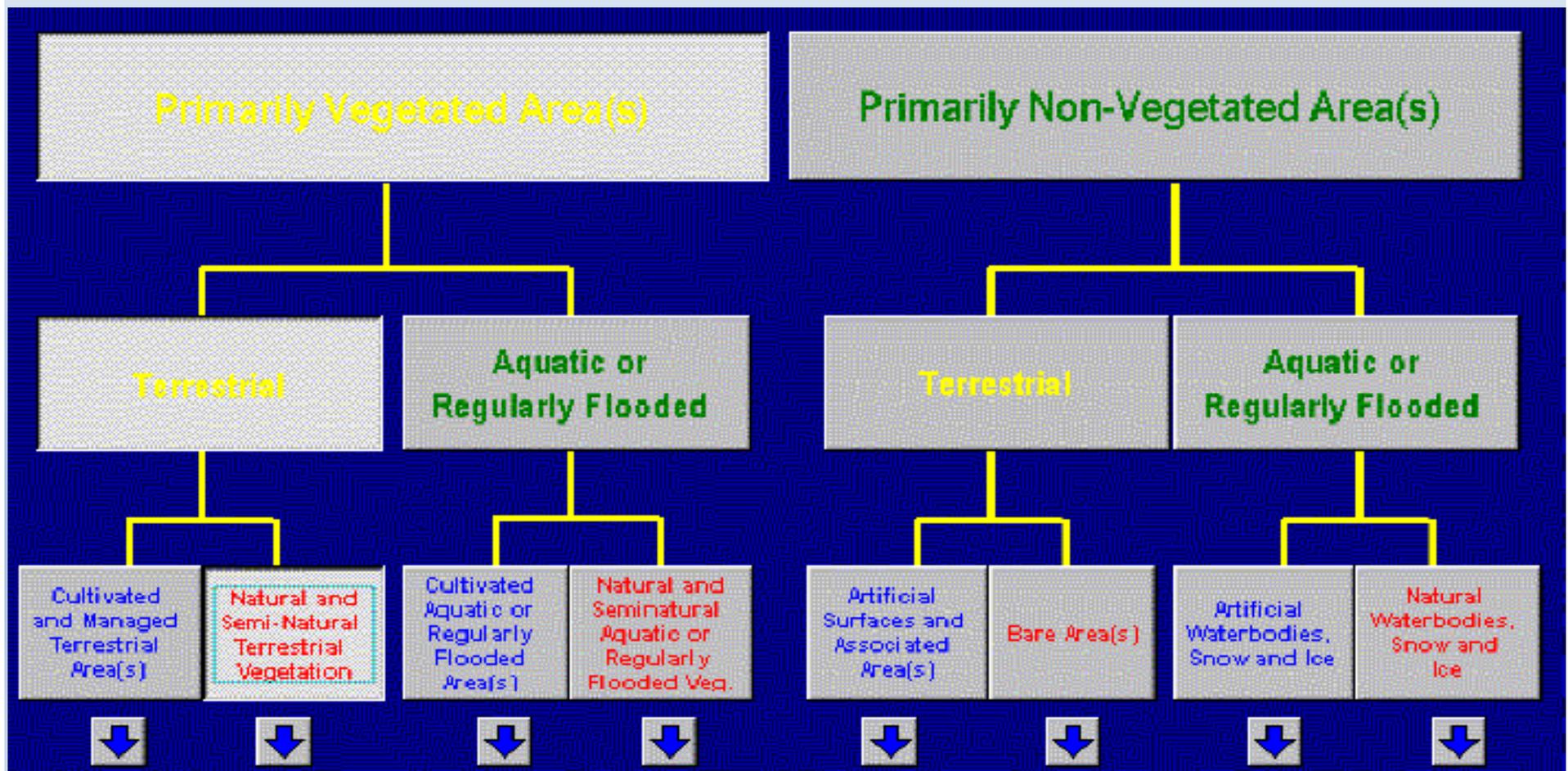


3.

GlobeLand 30

Land Cover Classification System

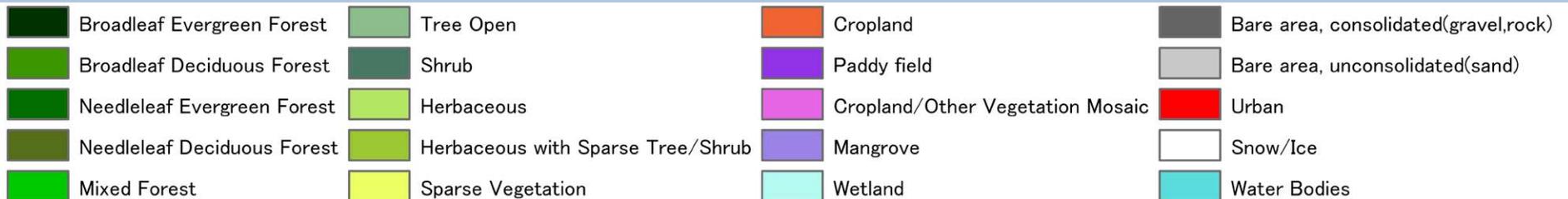
Land cover is the observed (bio)physical cover on the earth's surface (FAO)



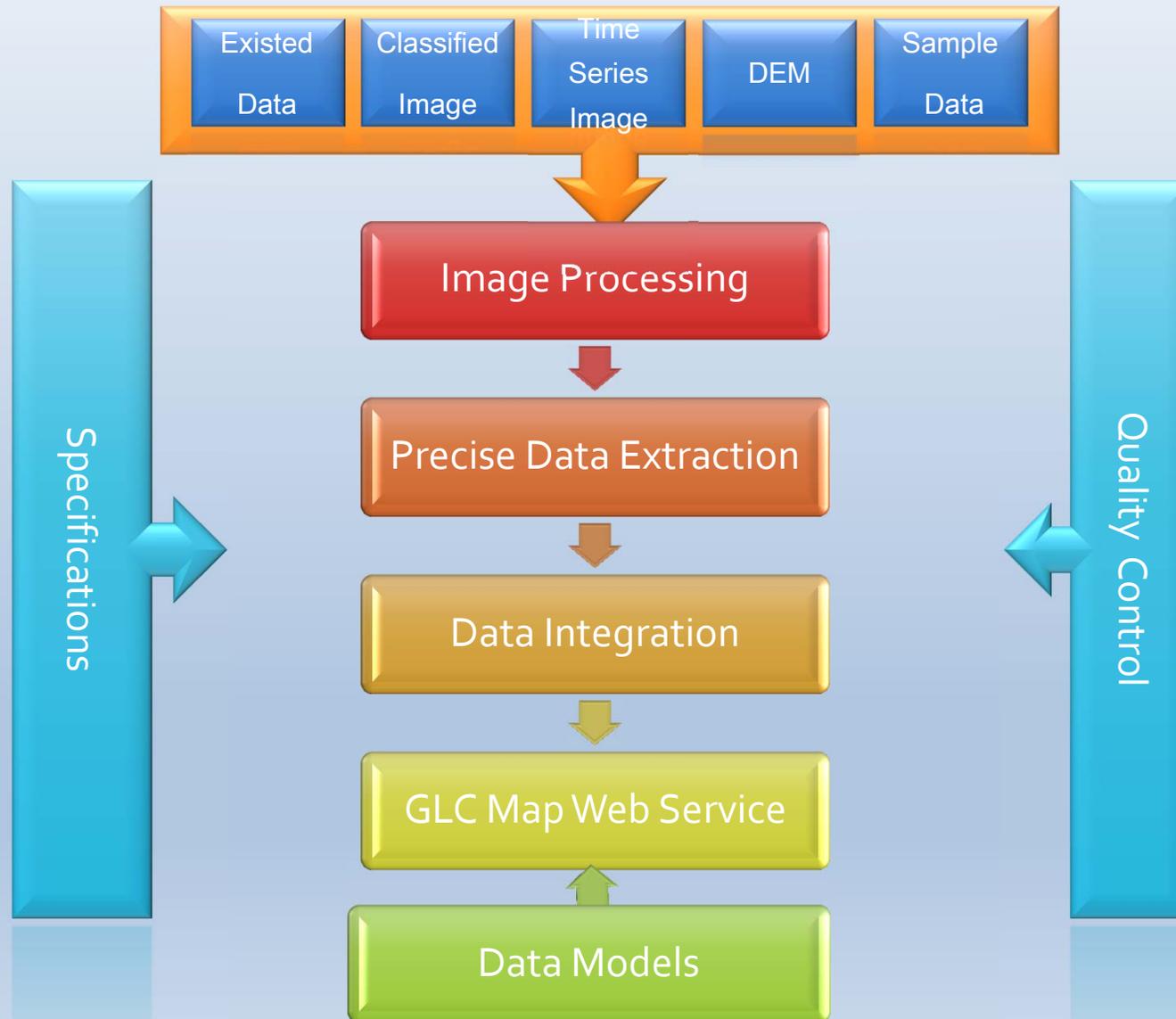
Different Global LC Datasets



© GSI, CERE5, Collaborating Organizations



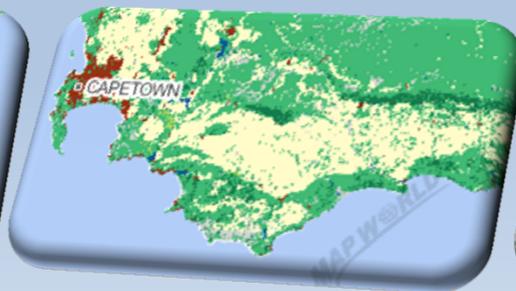
Developing GlobeLand30



GlobeLand30



GlobeLand30



4.

China National
Geography
Census

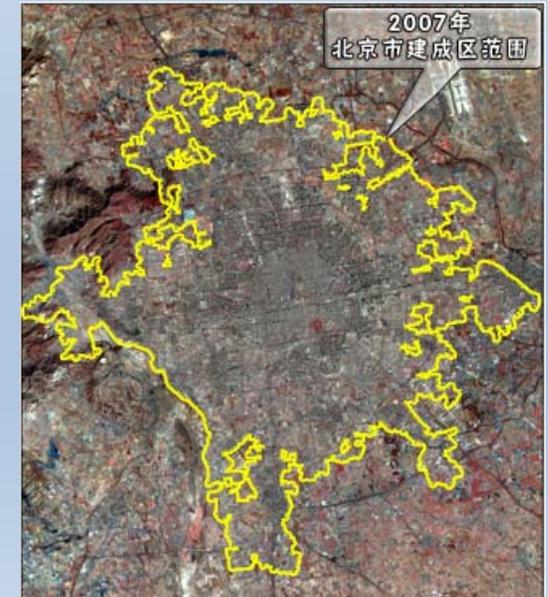
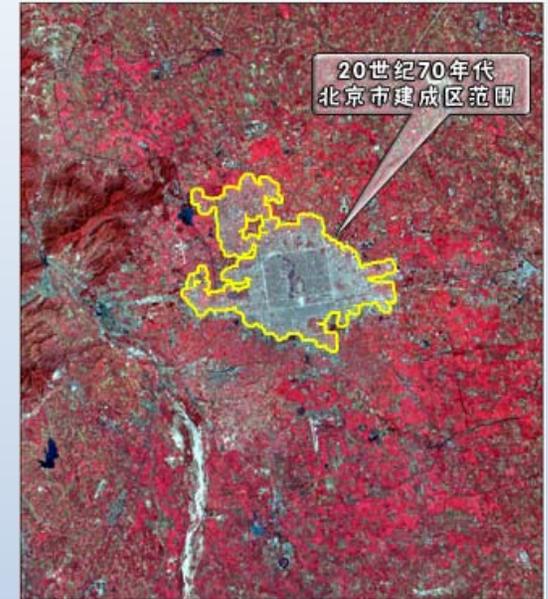
China Geography Census

Chinese government has launched its first national geography census from 2013 to 2015

Total budget: 10 billion Yuan



China Geography Census & Monitoring



Geography Census

Physical
Geography

Human
Geography

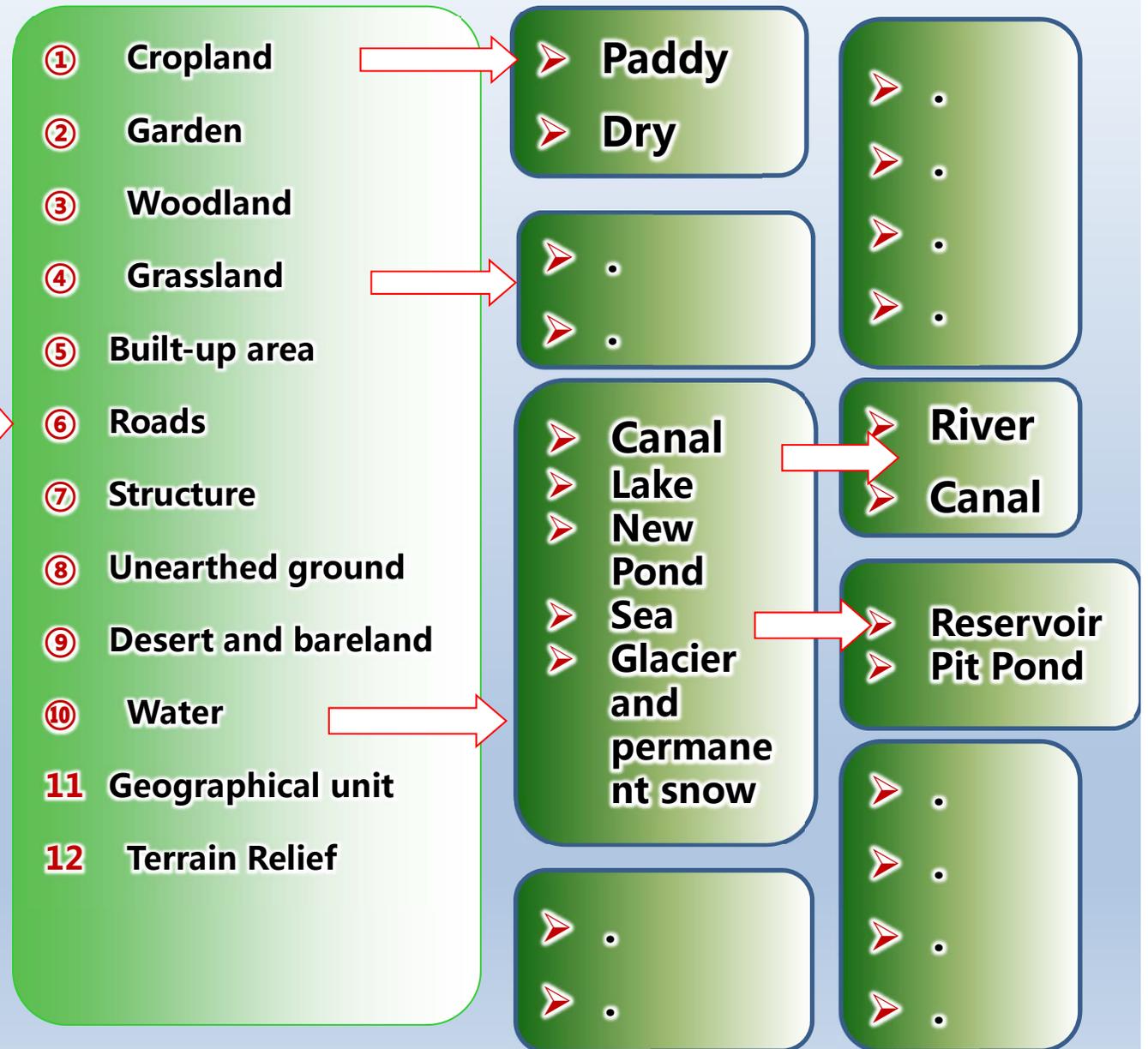
Natural
Features

Land
Cover

Artificial
Features

Social-
Economic
Data

Datasets of Geography Census



Datasets: Cropland

Paddy Fields

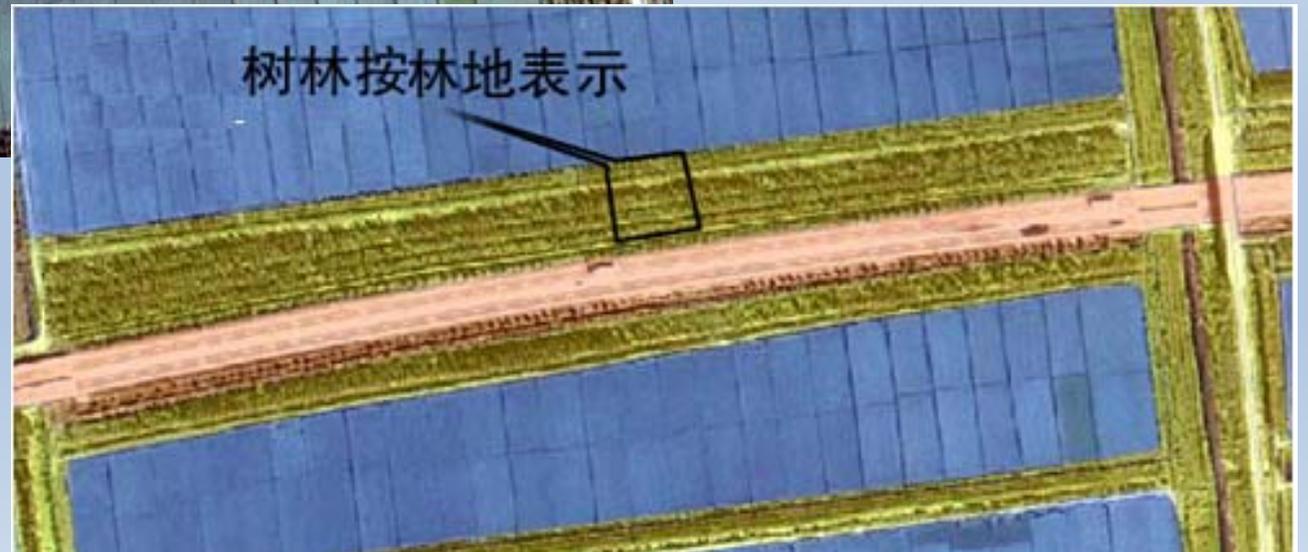
Dry Land



Datasets: Garden



Datasets: Woodland



Datasets: Built-up Area



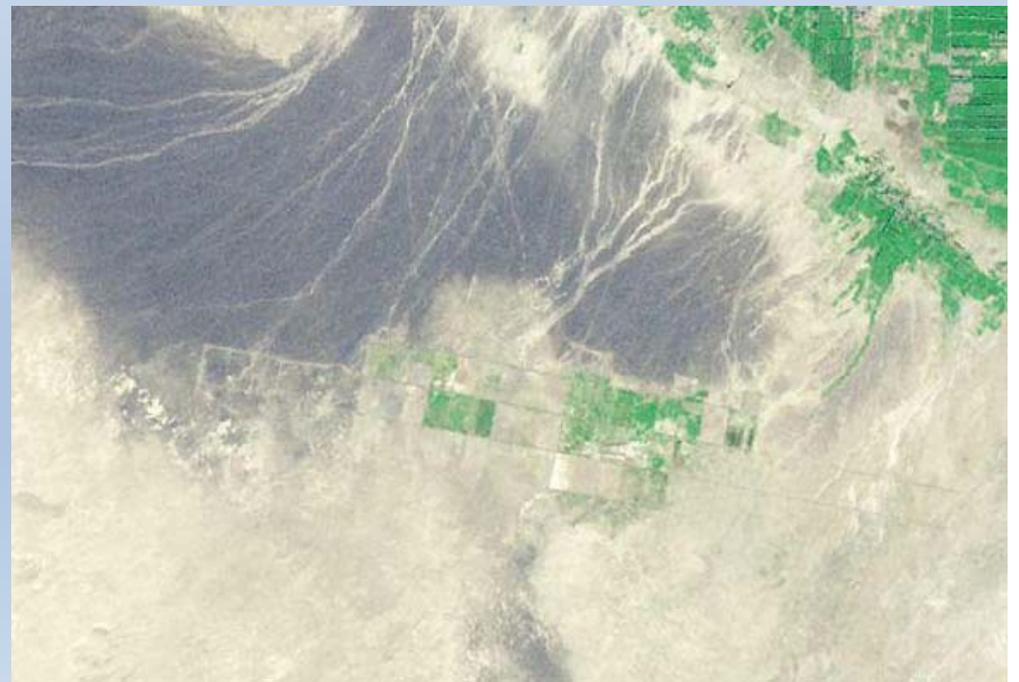
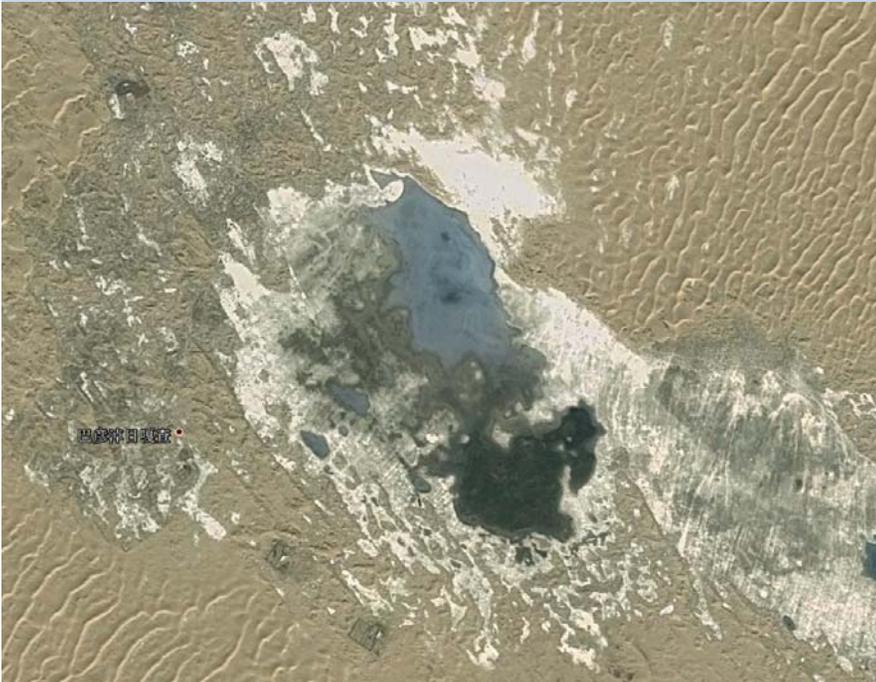
Datasets: Structures



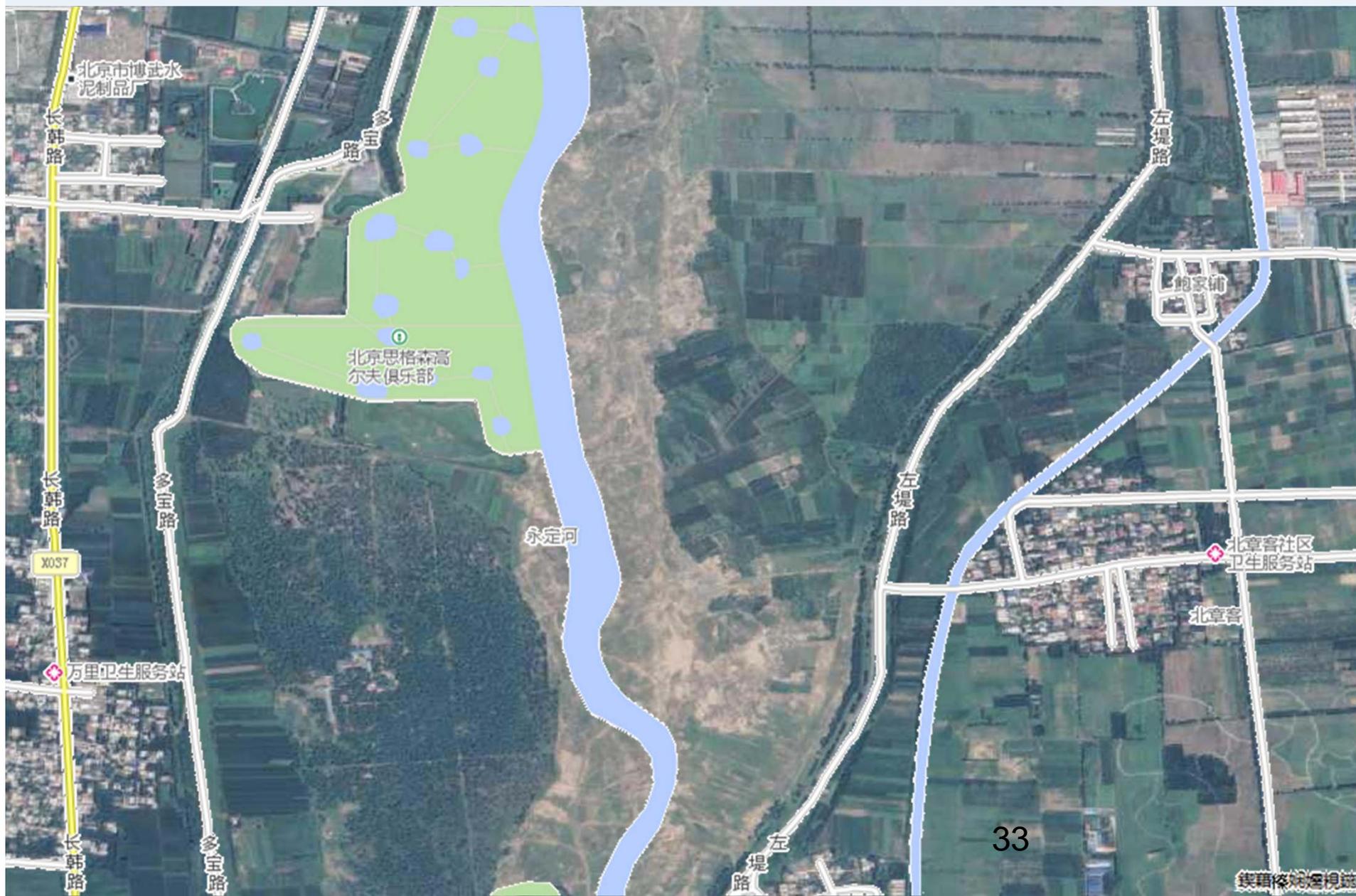
Datasets: Unearthed Ground



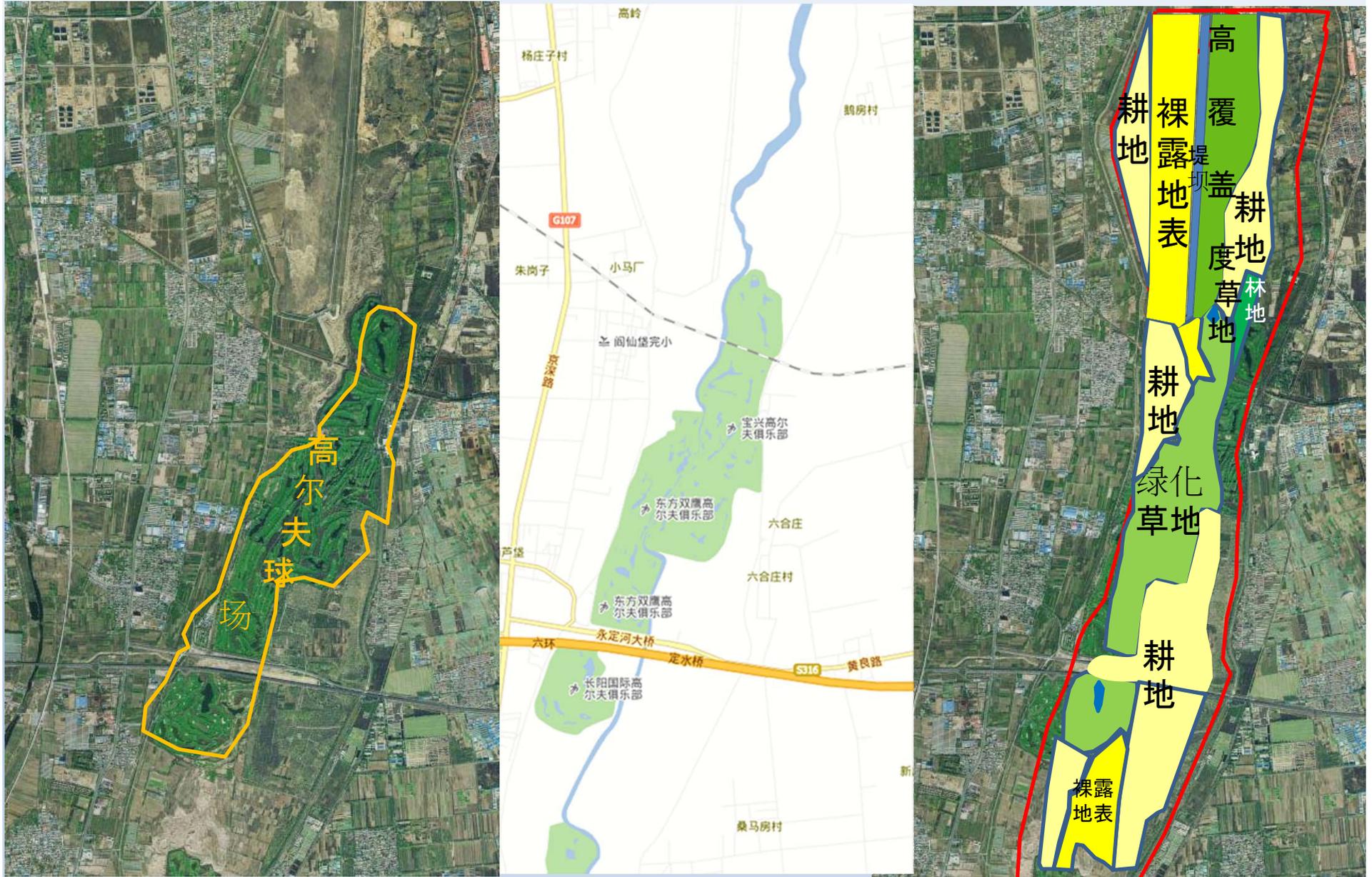
Datasets: Desert and Bareland



Datasets: Waters



Datasets: Conflicts and Combination



Data Sources for Geography Census

- ◆ Full coverage high resolution remote sensing imagery, including space-borne sensors, airborne sensors, ground data, etc.
- ◆ 1:50 000 fundamental geographical data
- ◆ 1:10 000 fundamental geographical data and 1:2000 or even larger scale data
- ◆ Thematic data from other departments
- ◆ Field survey

Expected Results

1. Geo-Statistical analysis:

□ **Basic statistical analysis results**

- **Fundamental Geographical Conditions (GC) information**
- **Report on spatial distribution of natural elements**
- **Report on spatial distribution of human elements**

□ **Integrated statistical analysis results**

- **GC Index**
- **Report on spatial analysis of regional ecological coordination, spatial development of economic regions, etc.**

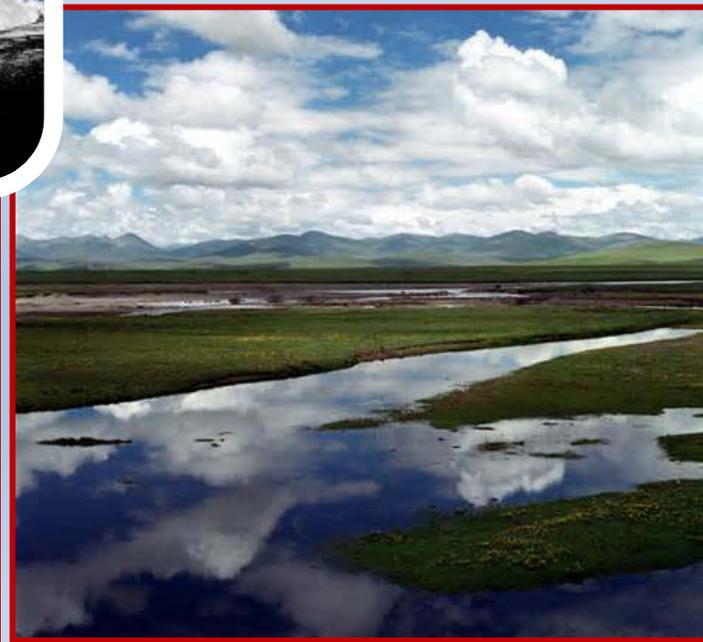
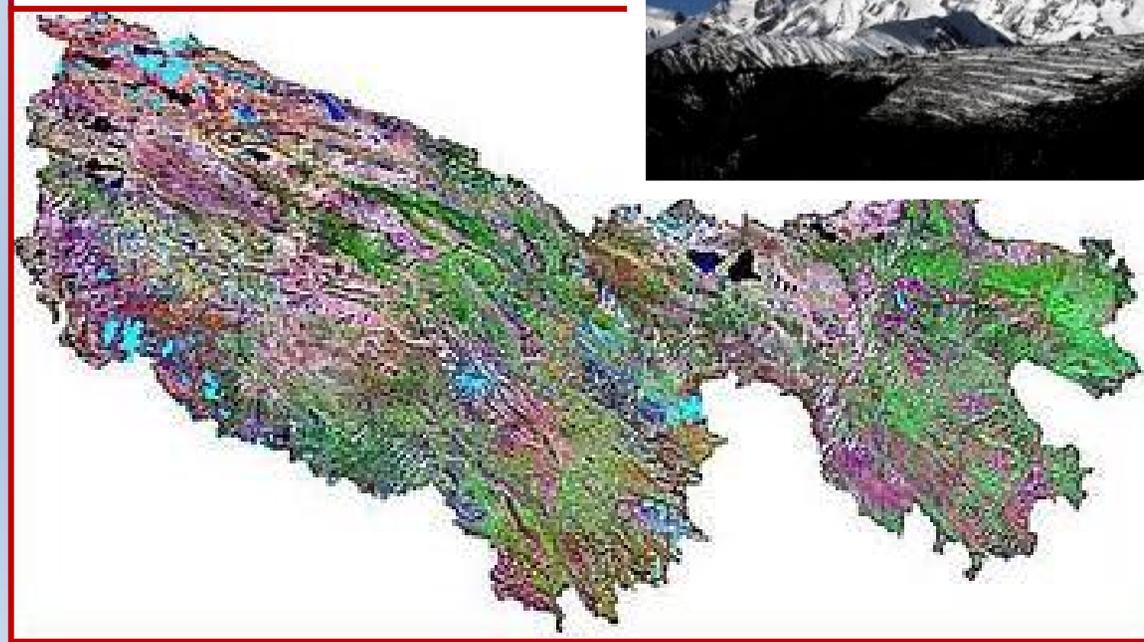
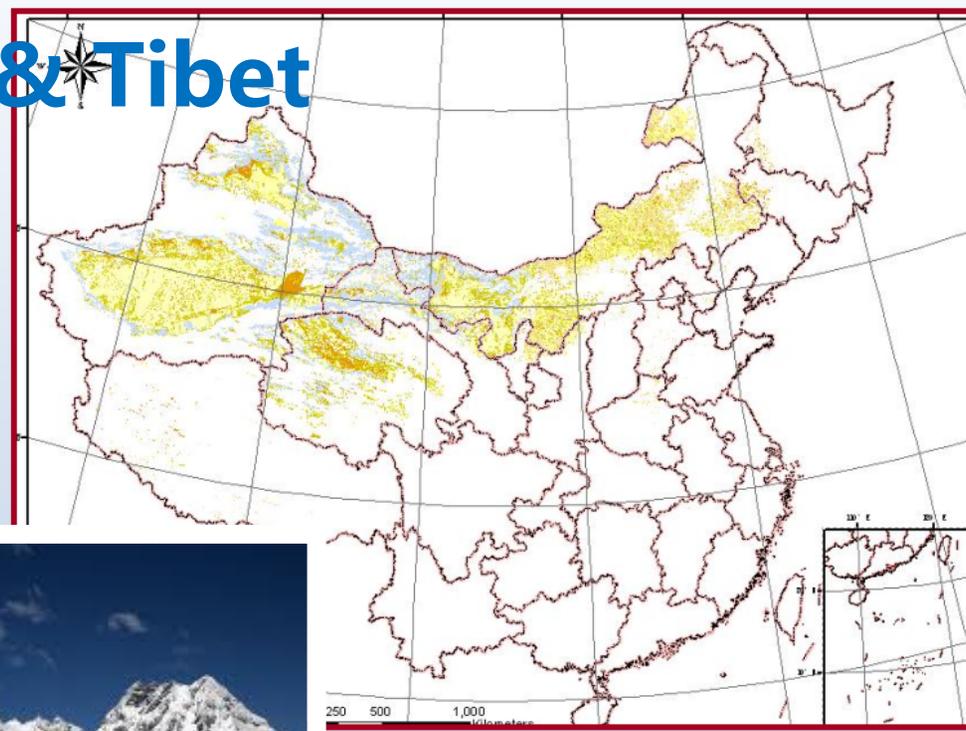
2. National database— a base for routine monitoring

3. Maps and atlases

4. Technical Operation Systems

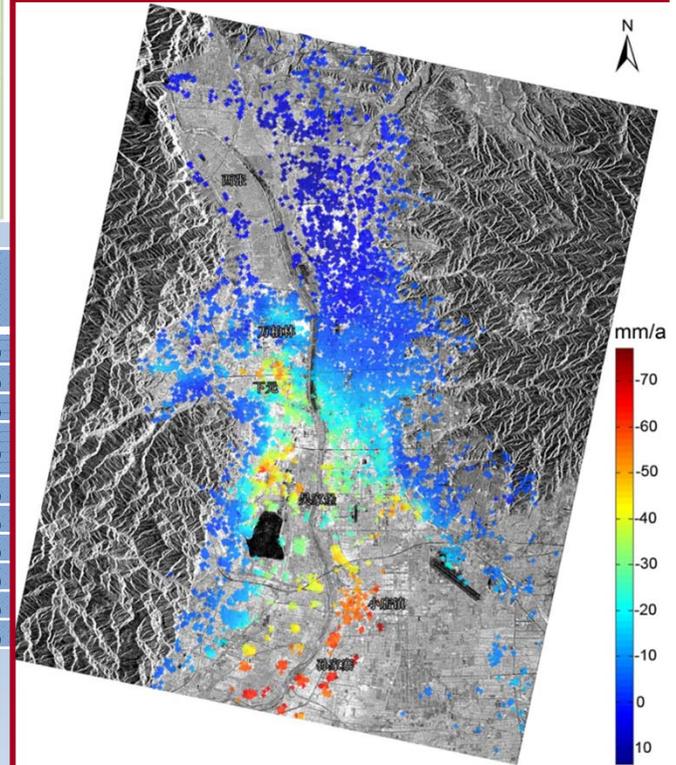
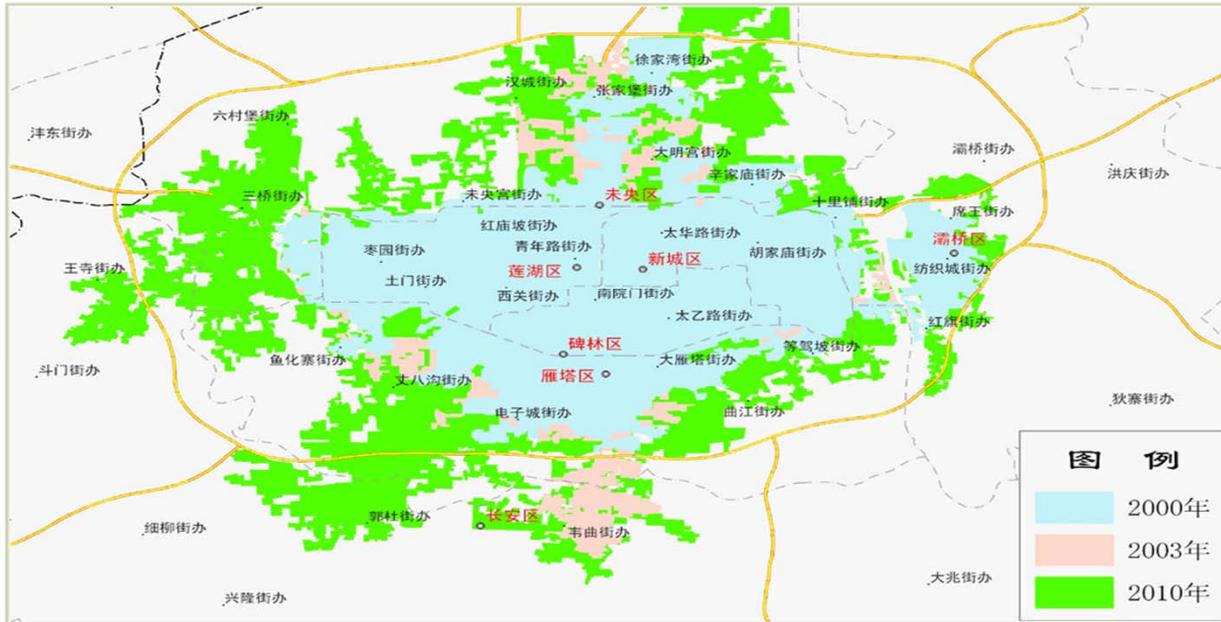
5. Efficient working mechanism

Monitoring Qinghai & Tibet



Monitoring Urbanization

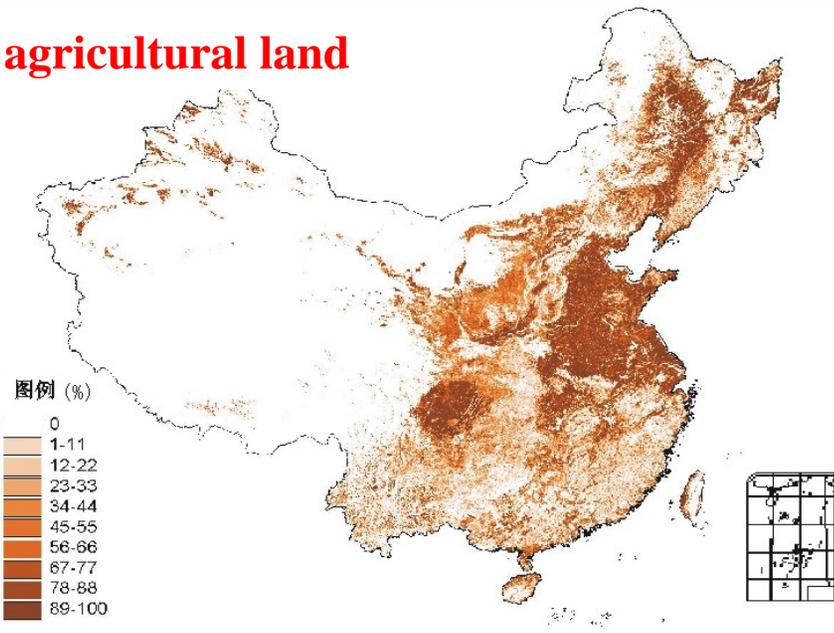
西安市主城区2000、2003、2010年分布图



城市名称	2000年	2003年	2010年	2000-2003年年增长率(%)	2003-2010年年增长率(%)
西安市	16681.67	19135.94	34168.67	4.68%	8.63%
铜川市	883.38	905.53	1945.09	0.83%	11.54%
宝鸡市	3083.67	3559.10	6595.69	4.90%	9.21%
咸阳市	2293.11	2337.02	4819.57	0.63%	10.89%
渭南市	1470.87	1487.47	2796.17	0.37%	9.44%
延安市	575.74	598.66	1996.51	1.31%	18.78%
榆林市	1070.98	1073.25	1852.89	0.07%	8.11%
汉中市	778.77	785.65	2293.42	0.29%	16.54%
安康市	641.39	653.75	1140.21	0.64%	8.27%
商洛市	299.29	299.73	586.73	0.05%	10.07%

Monitoring Land Use Pattern

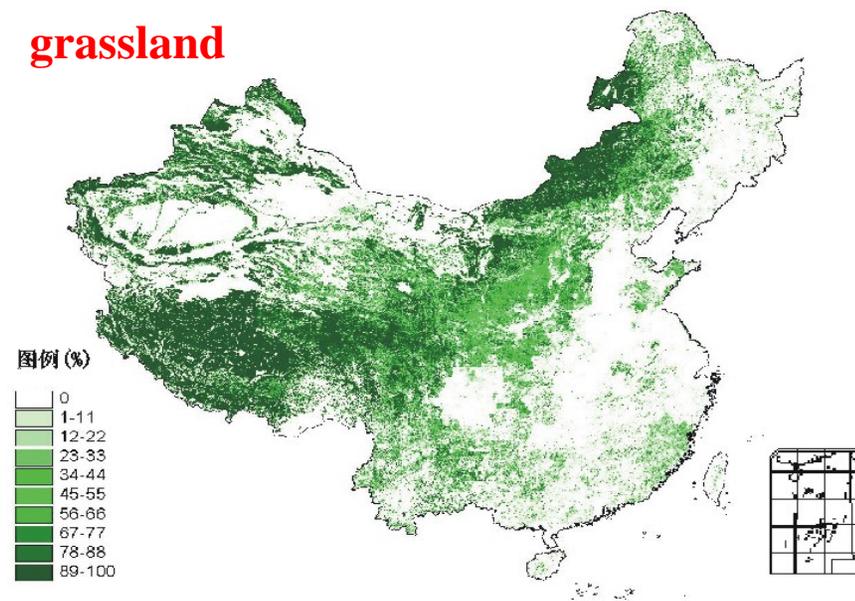
agricultural land



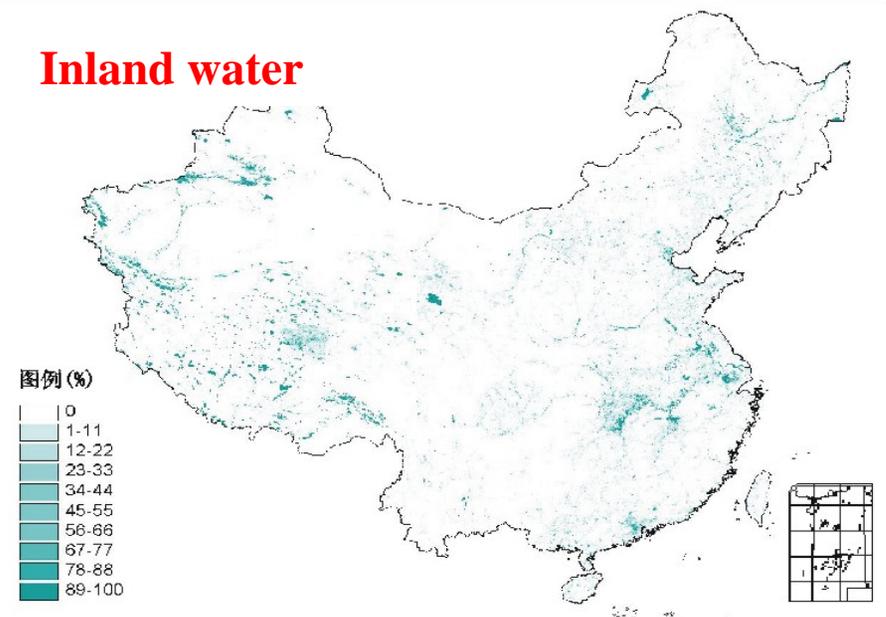
forest land



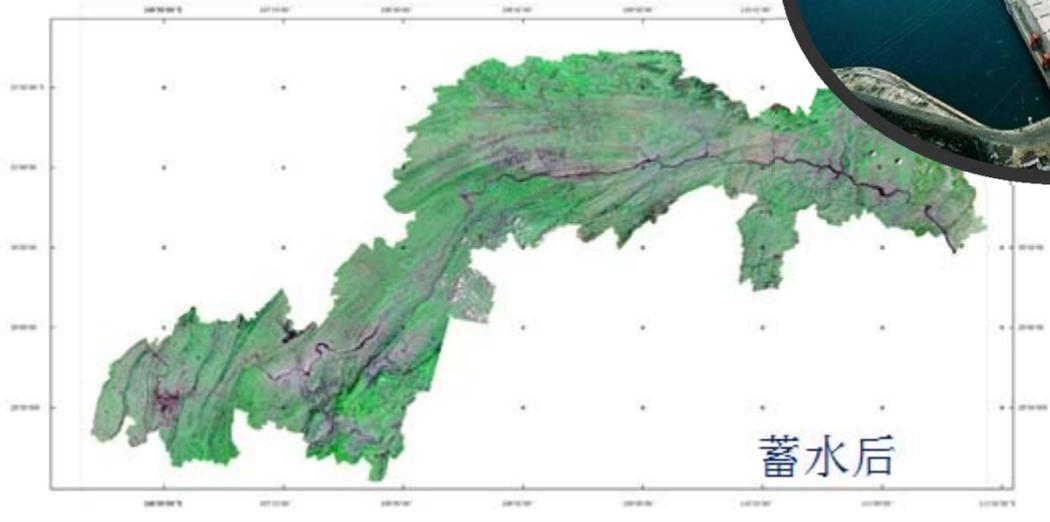
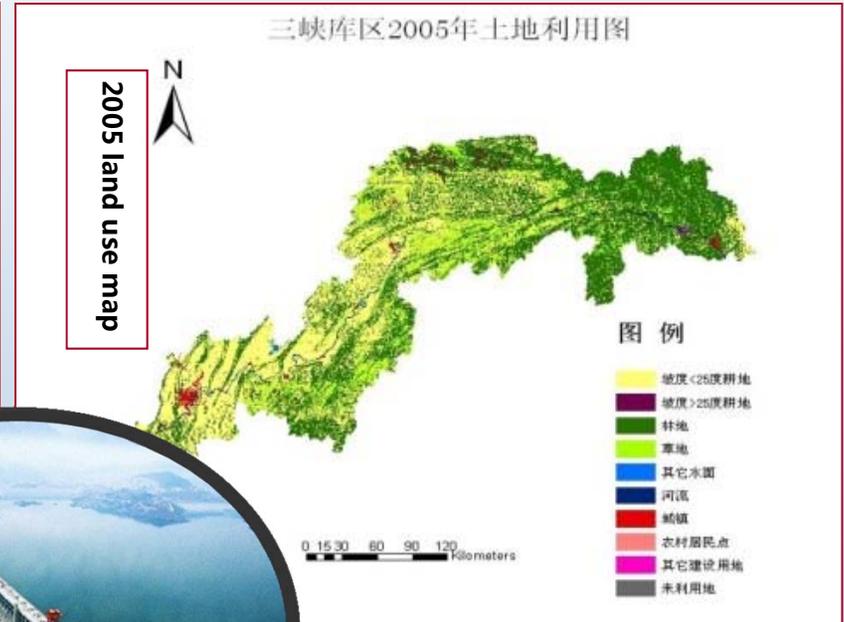
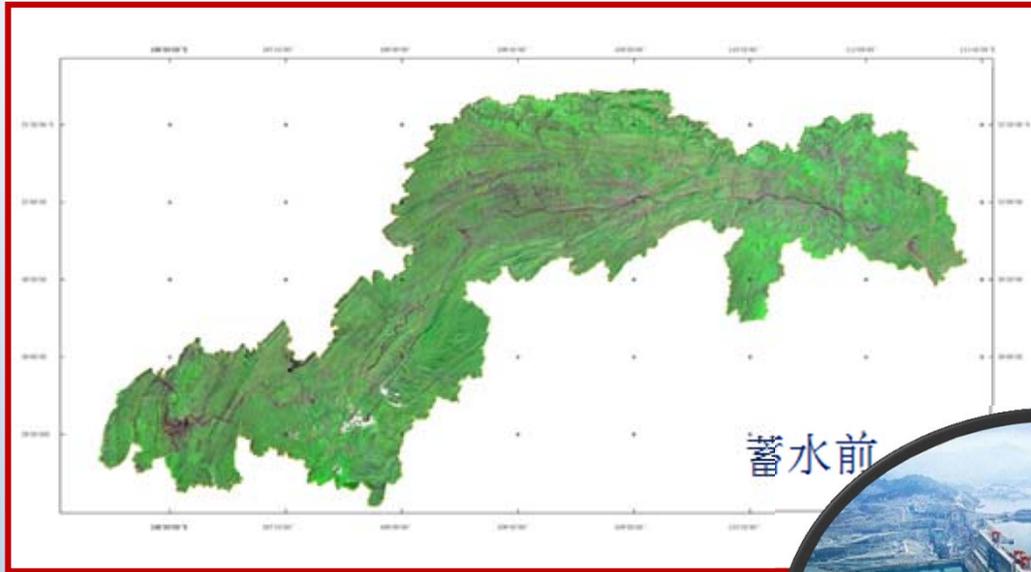
grassland



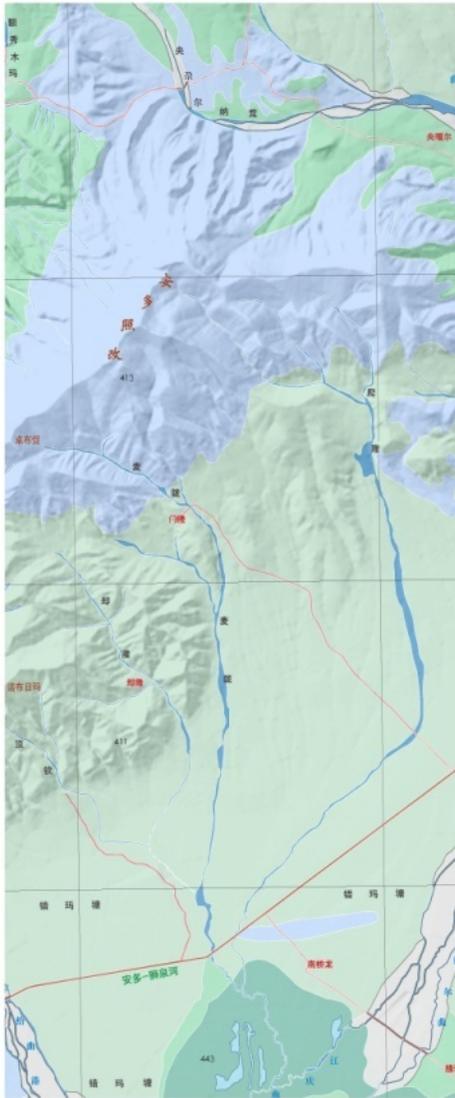
Inland water



Monitoring Three Gorges Reservoir

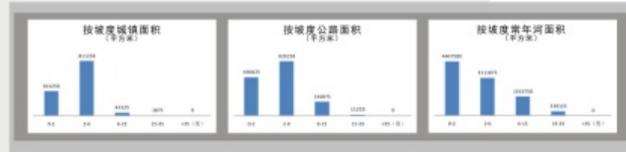
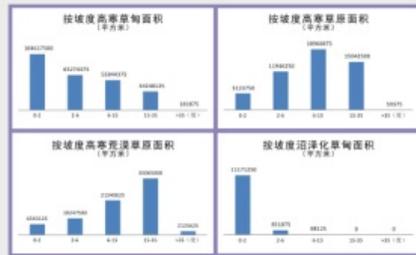
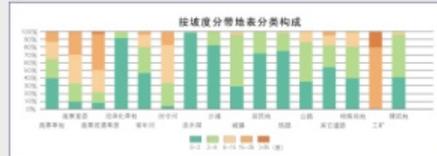
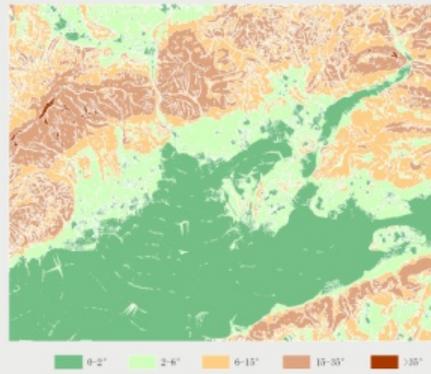


Census Maps and Analysis Report



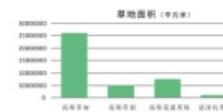
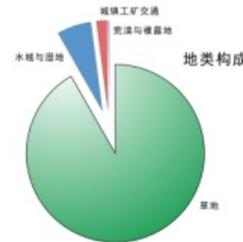
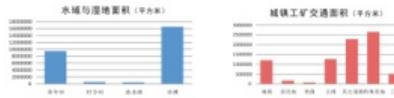
国家测绘地理信息局

坡度分带

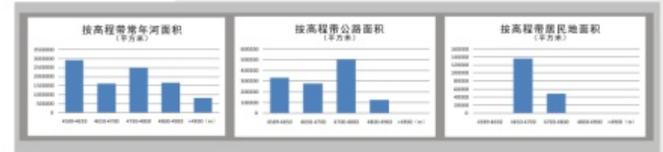
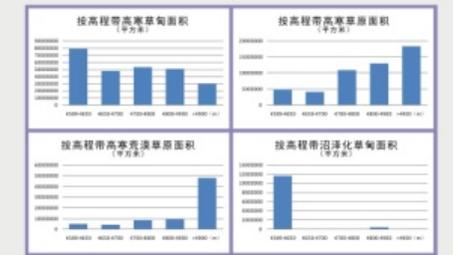
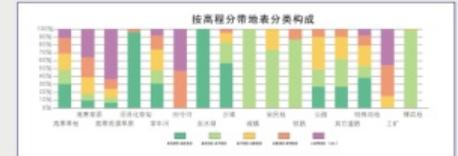
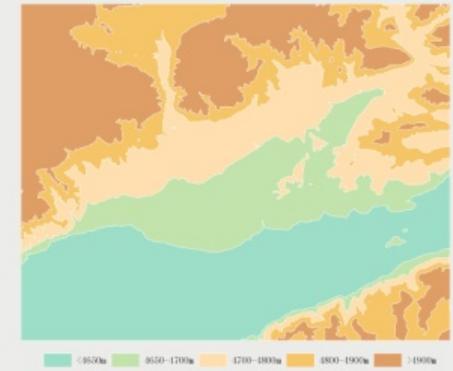


地类面积

分类代码	分类名称	统计数值(平方米)	占总量百分比
411	高层草地	260643936	59.84%
412	高层草原	51268506	11.77%
413	高层荒漠草原	75423031	17.31%
443	沼泽化草地	12158134	2.79%
511	常年河	9508690	2.18%
512	时令河	607180	0.14%
521	淡水湖	472453	0.11%
551	沙漠	1047847	3.78%
711	城镇	1215099	0.28%
712	居民地	178083	0.04%
720	铁路	75449	0.02%
731	公路	1265231	0.29%
732	其它道路	2287494	0.53%
733	特殊用地	2642734	0.61%
740	工矿	513201	0.12%
870	裸地	856824	0.20%
	总计	430589901	100.00%



高程分带

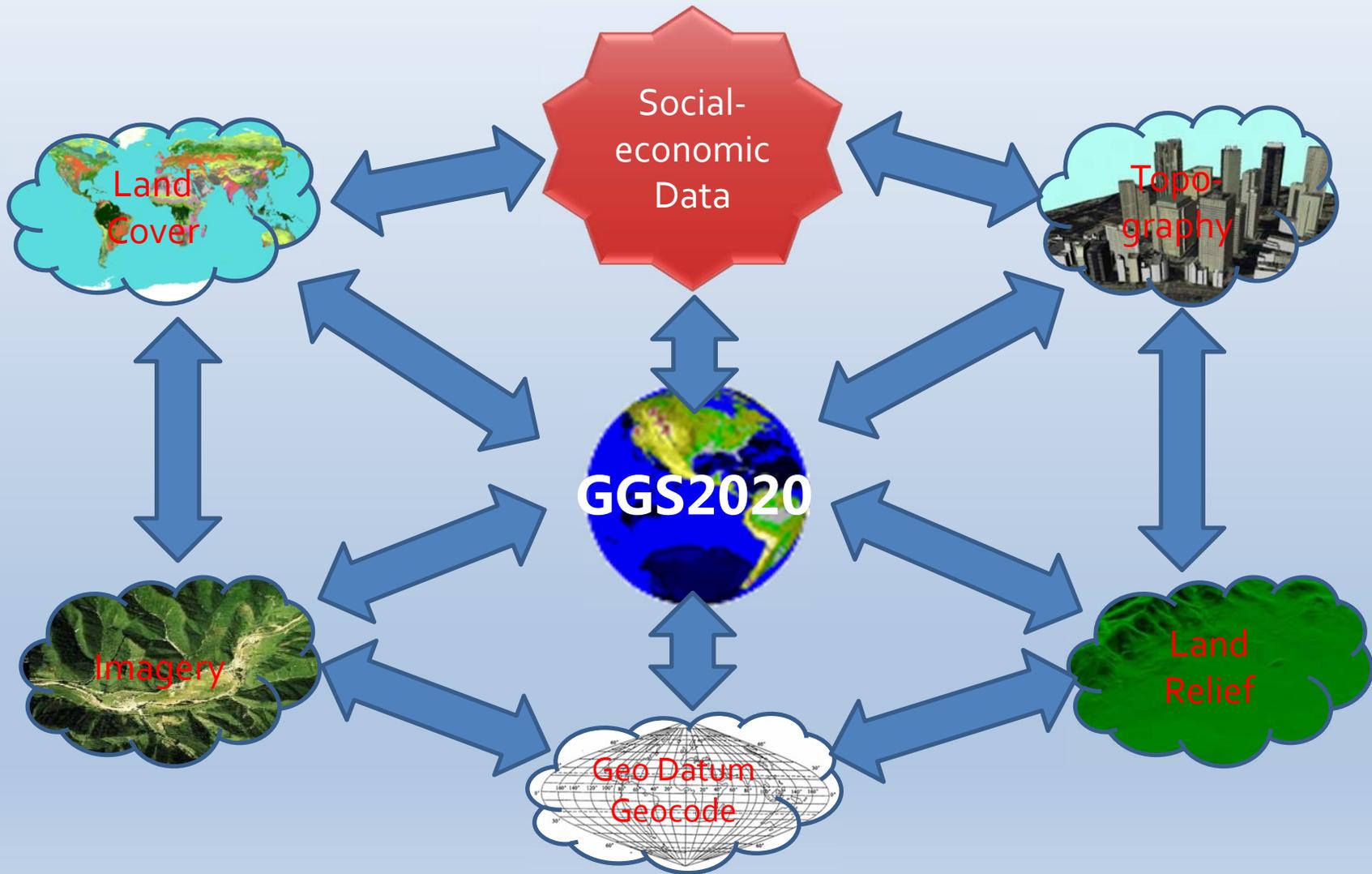


Map Scale : 1:10000, 1:50000 or 1:250000

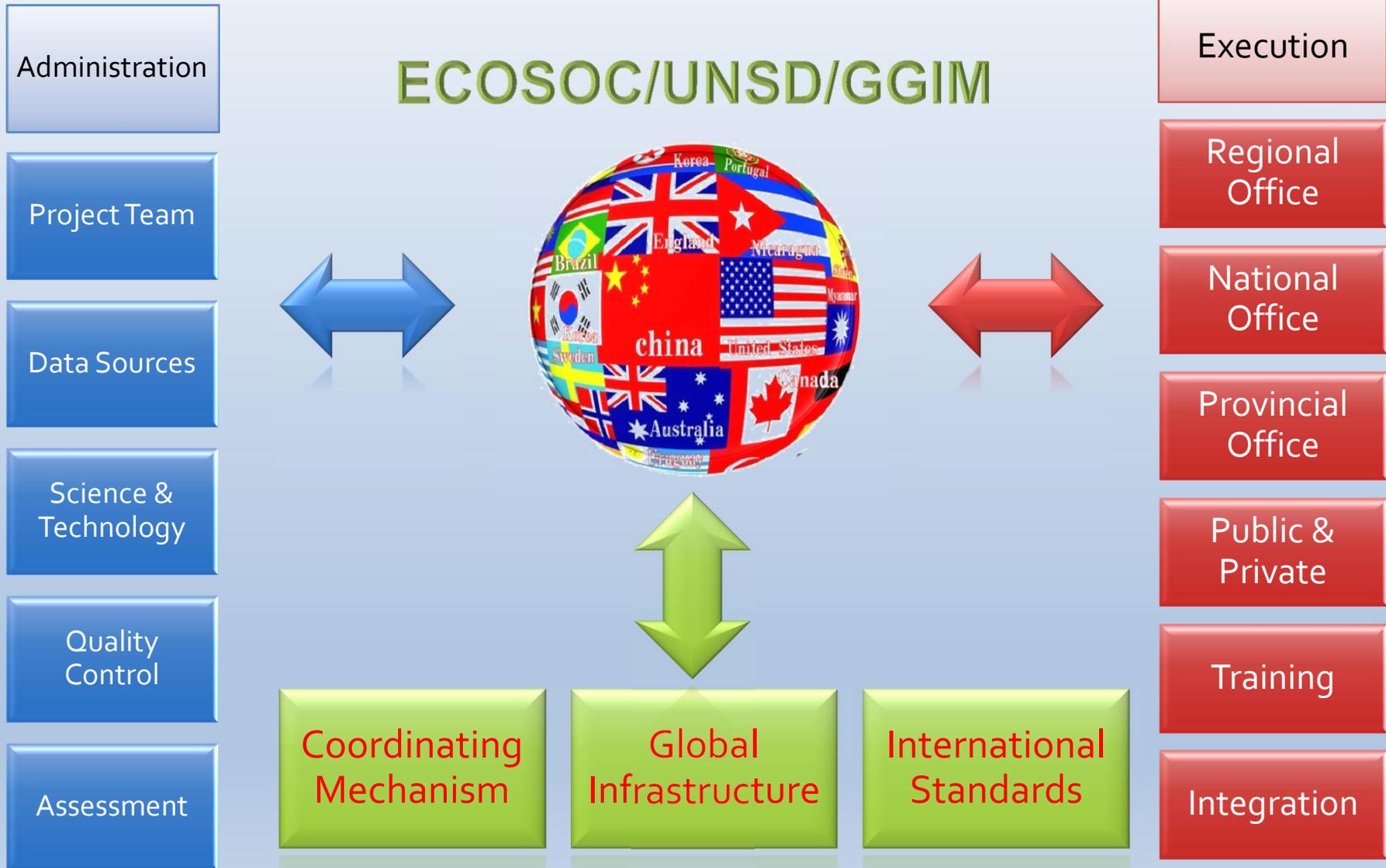
5.

A Global
Geography
Census

Call for a Global Geography Census



Global Geography Census 2020



Conclusion Remarks

1. The changing world could be smarter by integration of geospatial and statistical information
2. Census must be people and location focused
3. Land Cover is an integral part of geography census
4. The First National Geography Census of China has set an example to be as the basis for geographic monitoring.
5. Global Geography Census 2020 is needed, the world could be dynamically represented.

Thank You ! 谢谢 !