The Database on the Research of Global Change of China in GEODATA.CN

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1. Background

No enough data to support the Research of Global Change is important problem we face, especially in developing country like China. Fortunately, in China, the government pays more and more attention to this matter. A large project called Scientific Data Sharing Project was started in year 2003, which funded by Ministry of Science and Technology of China. 18 big sub-projects of data sharing have got support from it.

1. Background

Data developing and data sharing obtained a big progress recent years.

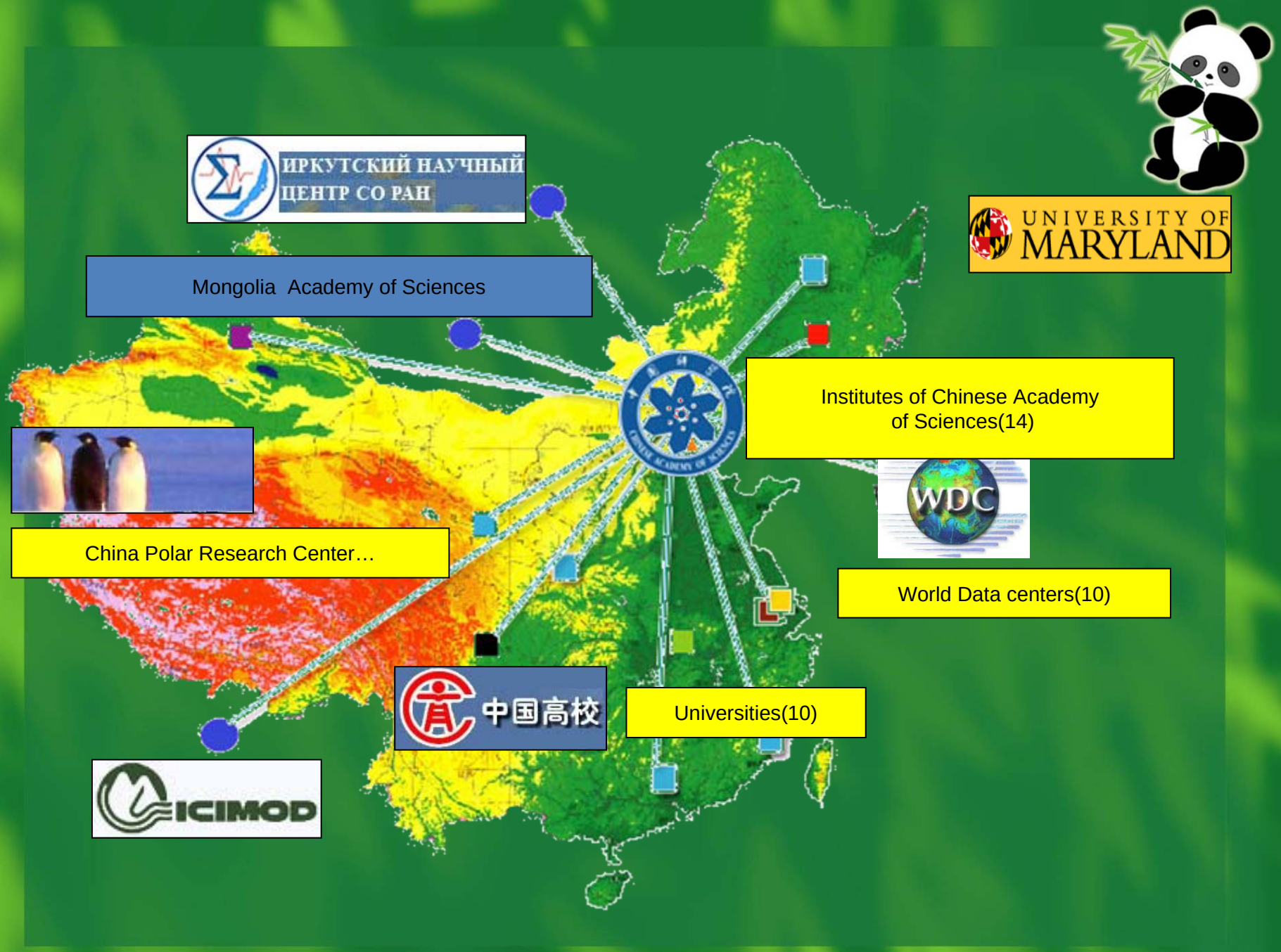
The Earth System Scientific Data Sharing Network (GEODATA.CN) is one of these big sub -projects. It is also the only data sharing program that integrates scattered datasets which be held by scientific and research institutes, universities, and scientists. The goal of GEODATA.CN is as follow.

1. Background

- To integrate scattered scientific data resources in China, introduce international data resources and produce new datasets.
- To build an earth system data sharing network which cross country, region and division.
- To provide data support for national key research projects, social economic development and the general public.

1. Background

GEODATA.CN is undertaking by IGSNRR, CAS. Totally 40 organization have taking party in the project. Prof. Sun Jiulin is in charge of the project.

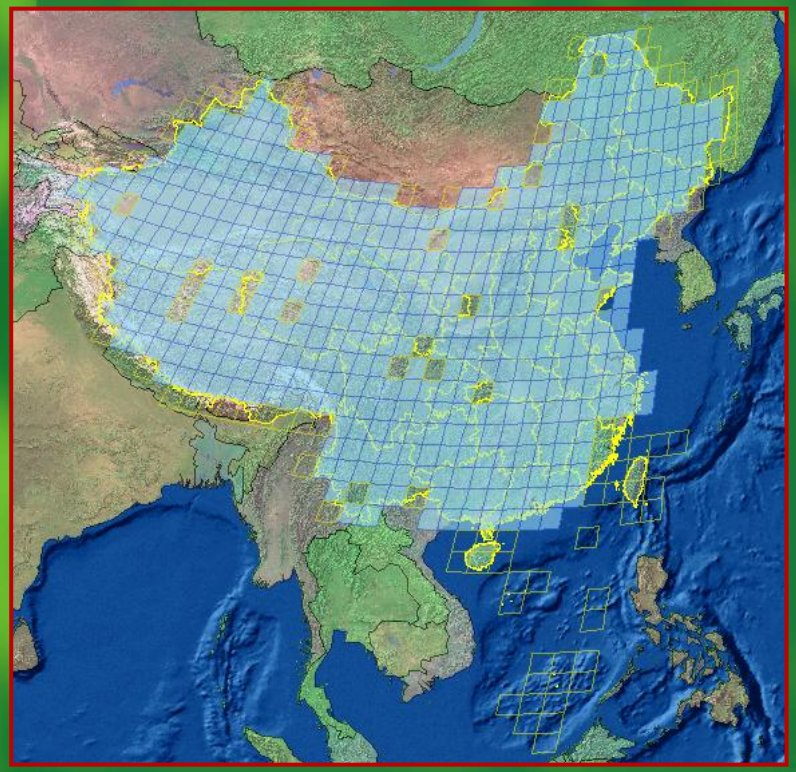

ИРКУТСКИЙ НАУЧНЫЙ ЦЕНТР СО РАН
Mongolia Academy of Sciences
UNIVERSITY OF MARYLAND
Institutes of Chinese Academy of Sciences(14)
China Polar Research Center…
WDC
World Data centers(10)
中国高校
Universities(10)
ICIMOD

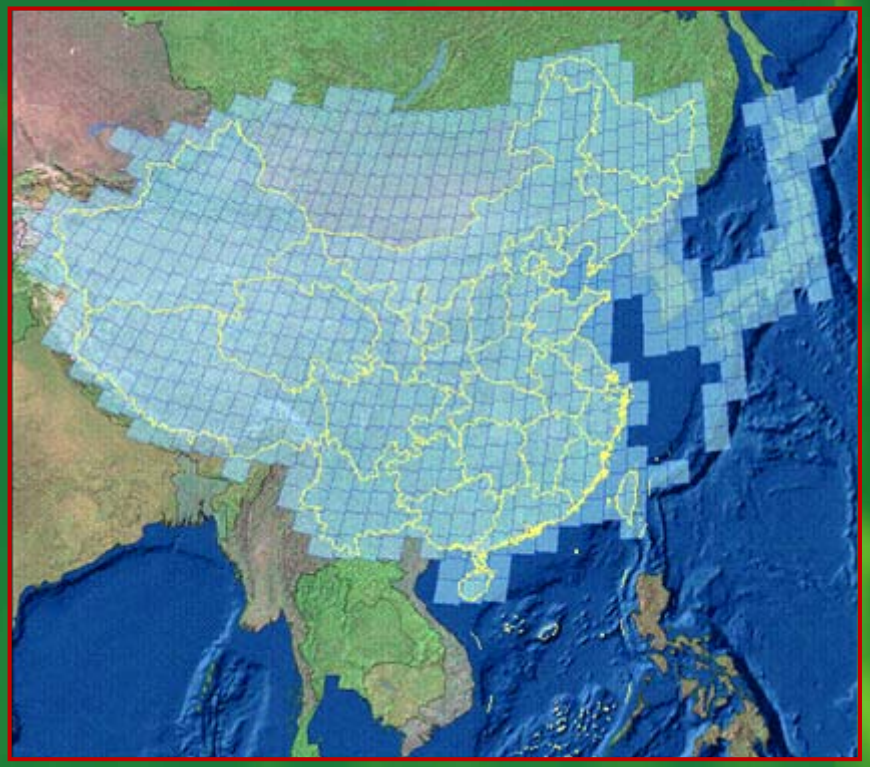
2. Main data products

GEODATA.CN has collected and integrated 8 TB data. The data covers the fields of 5 cycles of earth system, but focus on land surface resources. Based on these data, a series of data products were produced. Main datasets are as follow.

2.1 Earth observation images and standard production

- NOAA/AVHNRR images
- MODIS images and its standard products
- Landsat MSS,TM,ETM images in China region (70s,90s,2000s)
- Aero spatial images cover Tibetan plateau(70s)





2.2 Thematic database of Cryosphere

- Glacier data：Basic geographic data in frost region of China, frost catalogue data in China and its adjacent regions, and survey data in glacier region.
- Snow data：Long sequence daily snow data and general observation snow data in China.
- Frozen soil data：Basic geographic data in frozen soil region of China, Frozen soil distribution map of China and its adjacent regions, and observation data of frozen soil along the rail and road of Tibetan plateau.

2.3 Ecological environment basic database

- **2.3.1 Resources and environment database with scale of 1:4million**

  The database includes boundary, traffic, fundamental environment, natural resources and natural disaster etc.

- **2.3.2 Land use/cover database: 1:100,000,1:250,000, 1:1millon of the 80s,90s and 2000**
- **2.3.3 Digital Soil type map of China in 1:1millon scale**

2.3 Ecological environment basic database

- 2.3.4 Swamp and wetland database of China in 1:1millon scale
- 2.3.5 Lake type database of China in 1:1millon scale
- 2.3.6 Desert database of China in 1:1millon scale (2000-2002)
- 2.3.7 Geomorphological digital map in 1:1millon scale
- 2.3.8 Precipitation database of modern China (1841-)

2.3 Ecological environment basic database

- **2.3.9 1km *1KM Land use database of China, (1995 and 2000)**
- **2.3.10 Dataset of water resources of 1km of China (2000)**

  The dataset includes total water supply, domestic water consumption, industrial water consumption and ecological use of water etc.

2.3 Ecological environment basic database

2.3.11 1km*1km Climate data of China

2.3.11.1 China air temperature data, for year 1961 to 1998, yearly

- a. Data at year level
- b. Data at month level
- c. Data at ten days level
- d. Data at five days level

2.3 Ecological environment basic database

- 2.3.11.2 China precipitation data for each month, from year 1961 to 2001, yearly
- 2.3.11.3 China Sunshine Duration data for each month, from year 1961 to 2001, yearly
- 2.3.11.4 China Relative Humidity data for each month, from year 1961 to 2001, yearly

2.3 Ecological environment basic database

2.3.11.5 Other climate data, average value for many years

- Mean temperature**,** mean lowest temperature, and **mean** highest air temperature(1951-1980, 1961-1990, 1971-2000)
- Precipitation (1961-1990, 1971-2000)
- Sunshine Duration (1961-1990, 1971-2000)
- Relative Humidity (1961-1990, 1971-2000)
- China wind power data (1951-2000)
- China total solar radiation data (1950-1980, average)
- Mean Cumulative Temperature data of China in Many Years (from construction of stations to 1996)
- Humid Index data of China in Many Years (from construction of stations to 1996)

2.4 Natural Resources and Social economic database

2.4.1 Natural Resources database of China

- Water resources, land resources etc. at Nation, province and county level. Climate data for 740 stations over China and so on.
- 2.4.2 Population database of China
- At province level: 1949-2005, yearly
- At county level: Census data (1953, 1964, 1982, 1990, 2000, yearly). Statistic data (1986-2005, yearly)
- 2.4.3 Social economic Statistic data
- At province level: 1949-2005, yearly
- At county level: 1980-2005, yearly
- 2.4.5 1km *1km raster data
- GDP, population (1995, 2000, 2003, yearly) etc.

2.5 Survey and scientific research data of typical region

- 2.5.1 Scientific expedition data in polar region
- 2.5.2 Scientific survey data in Tibetan plateau
- 2.5.3 Ancient environment and soil erosion data in Loess plateau

2.5 Survey and scientific research data of typical region

- 2.5.4 Environment and disaster data in the Mountain of South west China
- 2.5.5 Agriculture resources and ecological environment data in North east China

3 Work plan

3.1 Continue data integrating and fusion of global change and of global change and the Regional response research

- 3.1.1 Develop the method of data integrating and data fusion of global change and the Regional response research.
- 3.1.2 Construct the subject spatial database of global change and the Regional response research

3 Work plan

3.1.2.1 The subject spatial database of the impact of global change on the main Chinese drainage basins water resource and water security.

- 1) The temporal and spatial dynamic change of the precipitation of the main drainage basins in China.
- 2) The temporal and spatial dynamic change of the evaporation and the transpiration of the main drainage basins in China.
- 3) The temporal and spatial dynamic change of the flood disaster of the main drainage basins in China.
- 4) The temporal and spatial dynamic change of the drought and the river drying of the main drainage basins in China.

3 Work plan

3.1.2.2 The subject spatial database of the impact of global change on the main ecosystem range carbon balance in China.

- 1) The temporal and spatial dynamic change of the NPP of the main ecosystem range in China.
- 2) The temporal and spatial dynamic change of the soil respiration of the main ecosystem range in China.
- 3) The spatial pattern of the biomass of the main ecosystem range in China.
- 4) The spatial pattern of the soil organic carbon of the main ecosystem range in China.
- 5) The spatial pattern of the litter of the main ecosystem range in China.
- 6) The temporal and spatial pattern of the carbon flux of the main ecosystem range in China
- 7) The temporal and spatial pattern of the carbon storage of the main ecosystem range in China

3 Work plan

3.1.2.3 The subject spatial database of the dynamic impact of global change on the main ecosystem range vegetation in China.

- The spatial pattern of the vegetation of the main ecosystem range in China
- 2) The temporal and spatial dynamic pattern of the afforestation and the reafforestation of the main ecosystem range in China.
- 3) Climate change and the temporal and spatial dynamic change of the vegetation of the main ecosystem range in China.
- 4) Climate change and the temporal and spatial dynamic change of the vegetation phonological period of the main ecosystem range in China.

3 Work plan

3.1.2.4 The subject spatial database of the impact of global change to the main ecosystem range atmospheric environment in China.

- 1) The temporal and spatial dynamic change of the ozone of the main ecosystem range atmosphere in China.
- 2)The temporal and spatial dynamic change of the NO2 of the main ecosystem range atmosphere in China.
- 3) The temporal and spatial dynamic change of the SO2 of the main ecosystem range atmosphere in China.
- 4) The temporal and spatial dynamic change of the aerosol of the main ecosystem range atmosphere in China.
- 5) The temporal and spatial dynamic change of the impact of global change on the atmospheric environment of the main ecosystem range in china

3. Work plan

3.1.3 Develop and consummate the process simulation system of the land surface of the global change and the regional response.

- 1) The IBIS land surface process integrated simulation system
- 2) The INTEC forest ecosystem integrated simulation system
- 3) The GORCAM carbon balance and carbon trade simulation system
- 4) The TREPLEX ecosystem process simulation system
- 5) The CENTURY bio-geo chemistry cycle integrated simulation system
- 6) The SWAT distribution eco-hydrology simulation system

3. Work plan

3.1.4 Research report

- 1) The impact of global change on the main drainage basins water balance and water security
- 2) The impact of global change on the carbon cycle and regional agriculture and forest production
- 3) The impact of global change on the atmosphere pollution and the radiation and hot environment evolvement and the regional ecosystem environment security.
- 4) The compound effect analysis of the human activity and climate change on the regional ecosystem environment security.
- 5) The assistant decision report of the adaptation and response to global change and the regional response

4. Conclusion

You are Welcome

.to visit GEODATA.CN’s web
http://www.datar.cn/

.to join the data sharing alliance

.to use the data

Contact email :geodata@igsnrr.ac.cn

Or send me email: lizh@igsnrr.ac.cn

Thanks