

BRIEF INTRODUCTION ON PILOT COMPILATION SYSTEM OF NATURAL RESOURCES BALANCE SHEETS IN CHINA

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OUTLINE

- I. Significance of Pilot Compilation of Natural Resources Balance Sheets in China
- II. The Basic Principles and Framework
- III. The Main Contents
- IV. The Pilot Areas and Schedule
- V. The Future Plan and Challenges

I. The Significance

- 1. Background
- 2. Main Aims

I. The Significance

- 1. Background
- As you know, since 1978, China has experienced rapid economic growth for more than 30 years. Now its GDP has been up to the second most in the world. In the meantime, with the first largest population on earth, China is facing sharp conflicts between its development and environment.

This is the background for us to compile natural resources balance sheets in China.

I. The Significance

- 1. Background (Continued)

- You may wonder what “Natural Resources Balance Sheets” refers to?

According to the reference materials, natural resources balance sheets should be formed when we adopts the way of compiling the national or SNA balance sheets, classifies and sums up natural resources assets of an area or of the whole country, which show the property of natural resources assets accumulated at a point of time and reflect their stock changes during the specific period of time.

- In practice, after consulting the experts of UNSD and studying SEEA Central Framework, we have developed asset accounts of the main natural resources in China, as I will explain to you.

I. The Significance

- 2. Main Aims

- A. Ascertaining the actual situation of natural resources assets in China and its changes, so as to provide information for effectively utilization of the natural resources
- B. To put forward the suggestions to improve the survey and statistical system of natural resources
- C. To provide experiences for developing the compilation scheme of natural resources balance sheets
- D. To provide references for the related work, such as audit of the officials about their performance on administration of natural resources assets when they leave their posts.

II. The Basic Principles and Framework

- 1. Basic Principles
- 2. Basic Framework

II. The Basic Principles and Framework

- 1. Basic Principles
 - A. Persisting in integrated design
 - B. Laying stress on the key points
 - C. Paying attention to the quality indicators
 - D. Ensuring high data quality
 - E. Referring to experiences of other countries

II. The Basic Principles and Framework

- 2. Basic Framework (referring to 2012 SEEA-CF, in physical terms):

| | Land | Timber resources | Water resources |
|-------------------------------------|------|------------------|-----------------|
| Opening stock of resources | | | |
| Additions to stock of resources | | | |
| Natural Growth in stock | | | |
| Discovery of new stock | | | |
| Upward reappraisals | | | |
| Reclassifications | | | |
| Additions due to the other factors | | | |
| Reductions in stock of resources | | | |
| Natural Reductions in stock | | | |
| Economic use | | | |
| Downward reappraisals | | | |
| Reclassifications | | | |
| Reductions due to the other factors | | | |
| Closing stock of resources | | | |

II. The Basic Principles and Framework

- 2. Basic Framework (Continued)
- The basic equation: Opening stock of resources
 - +Additions to stock of resources
 - Reductions in stock of resources
 - =Closing stock of resources

Data sources: Statistical surveys on natural resources and administrative records concerned.

III. The Main Contents

- 1. Asset Accounts of Land Resources
- 2. Asset Accounts of Timber Resources
- 3. Asset Accounts of Water Resources

III. The Main Contents

- 1. Asset Accounts of Land Resources
 - A. Stock and Its Changes of Land Resources
 - B. Grade and Its Changes of Cultivated Land (1)
 - C. Grade and Its Changes of Cultivated Land (2)
 - D. Grade and Its Changes of Grassland

III. The Main Contents

• A. Stock and Its Changes of Land Resources (Continued)

Supplemental information

1. Partitioned indicators of area changes in cultivated land (Unit: ha.):

Additions from comprehensive improvement of land _____,
Additions from structural adjustment of agriculture _____;
Reductions in construction_____, Reductions in catastrophic losses _____,
Reductions in returning the grain plots to forestry/husbandry/fishery ponds _____,
Reductions in structural adjustment of agriculture_____.

2. Besides the area data of forest land filled in the form above, the forest land area in accordance with *Classification of Forest Land* (LY/T1812-2009) is _____ ha., among which the area of natural forest is_____ ha., the area of planted forest is_____ha., the area of other wooded land is____ha., with the area of forest at the end of the year being _____ ha..

3. Besides the area data of grassland filled in the form above, the area of grassland in accordance with the survey by the department of agriculture or of animal husbandry concerned at the end of the year is _____ ha..

Data sources: The department of land and resources concerned, except that data of wetland and of Supplemental Information 2 being obtained from the department of forestry concerned and that the data of Supplemental Information 3 being obtained from the department of agriculture/animal husbandry concerned.

III. The Main Contents

- B. Grade and Its Changes of Cultivated Land (1) (Unit: ha., grade)

| Area | Grade | Code | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Average |
|--|-------|------|--------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|---------|
| | First | | Second | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| Opening stock at the beginning of the year | | 01 | | | | | | | | | | | | | | | | |
| Additions to Stock | | 02 | | | | | | | | | | | | | | | | |
| Reductions in Stock | | 03 | | | | | | | | | | | | | | | | |
| Closing stock at the end of the year | | 04 | | | | | | | | | | | | | | | | |

- Data sources: The department of land and resources concerned, in accordance with *Regulation for Gradation on Agriculture Land Quality* (GB/T28407-2012).

III. The Main Contents

- C. Grade and Its Changes of Cultivated Land (2) (Unit: ha., grade)

| Area | Grade | Code | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Average |
|--|-------|--------|---|---|---|---|---|---|---|---|---|----|---------|
| | First | Second | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Opening stock at the beginning of the year | | 01 | | | | | | | | | | | |
| Additions to Stock | | 02 | | | | | | | | | | | |
| Reductions in Stock | | 03 | | | | | | | | | | | |
| Closing stock at the end of the year | | 04 | | | | | | | | | | | |

- Data sources: The department of agriculture concerned, in accordance with *Regulation for Gradation on Cultivated Land Quality* (NY/T2872-2015) and *Rules for Soil Quality Survey and Assessment* (NY/T1634-2008).

III. The Main Contents

- D. Grade and Its Changes of Grassland (Unit: ha., grade)

| Area | Grade | Code | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Total |
|--|-------|------|--------|---|---|---|---|---|---|---|-------|
| | First | | Second | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Opening stock at the beginning of the year | | 01 | | | | | | | | | |
| Additions to Stock | | 02 | | | | | | | | | |
| Reductions in Stock | | 03 | | | | | | | | | |
| Closing stock at the end of the year | | 04 | | | | | | | | | |

- Data sources: The department of agriculture/animal husbandry concerned, in accordance with *Technical Guide for Grade Assessment of Natural Grassland* (NY/T1579-2007).

III. The Main Contents

- 2. Asset Accounts of Timber Resources
 - A. Stock and Its Changes of Timber Resources
 - B. Quality and Its Changes of Forest Reserves

III. The Main Contents

2. Asset Accounts of Timber Resources

- A. Stock and Its Changes of Timber Resources (Unit: 1000 cubic meter)

| | Code | Total | Natural Forest | | Planted Forest | | Other Woods |
|--|--------|-------|-------------------|--------------|-------------------|--------------|-------------|
| | | | As Public Welfare | As Commodity | As Public Welfare | As Commodity | |
| First | Second | 1 | 2 | 3 | 4 | 5 | 6 |
| Opening stock at the beginning of the year | 01 | | | | | | |
| Additions to Stock | 02 | | | | | | |
| Natural growth | 03 | | | | | | |
| Afforestation and regenerating | 04 | | | | | | |
| Reclassifications | 05 | | | | | | |
| Reductions in Stock | 06 | | | | | | |
| Removals | 07 | | | | | | |
| Deforestation | 08 | | | | | | |
| Catastrophic losses | 09 | | | | | | |
| Natural losses | 10 | | | | | | |
| Reclassifications | 11 | | | | | | |
| Closing stock at the end of the year | 12 | | | | | | |

- Data sources: The department of forestry concerned.

III. The Main Contents

2. Asset Accounts of Timber Resources

- B. Quality and Its Changes of Forest Reserves (Unit: cubic meter/ha.)

| | Code | Amount of growing stock per unit area in natural forest | Amount of growing stock per unit area in planted forest |
|--|--------|---|---|
| First | Second | 1 | 2 |
| Condition at the beginning of the year | 01 | | |
| Changes during the year | 02 | | |
| Conditions at the end of the year | 03 | | |

- Data sources: The department of forestry concerned.
- For natural or planted forest, Amount of growing stock per unit area=Amount of growing stock/Area.

III. The Main Contents

- 3. Asset Accounts of Water Resources
 - A. Stock and Its Changes of Water Resources
 - B. Quality and Its Changes of Water Environment

III. The Main Contents

3. Asset Accounts of Water Resources

A. Stock and Its Changes of Water Resources (Unit:10000 cubic meter)

| | Code | Total | Surface Water | | | | Ground Water |
|--|--------|-------|---------------|-------------|--------|---------|--------------|
| | | | | #Reservoirs | #lakes | #Rivers | |
| First | Second | 1 | 2 | 3 | 4 | 5 | 6 |
| Stock at the beginning of the year | 01 | | | | | | |
| Additions to Stock | 02 | | | | | | |
| Water resources from precipitation | 03 | | | | | | |
| Inflow | 04 | | | | | | |
| Inflow from other regions | 05 | | | | | | |
| Transfer in from other regions | 06 | | | | | | |
| Inflow from other water bodies inside the region | 07 | | | | | | |
| Return flow from socio-economic use | 08 | | | | | | |
| Return flow from irrigation | 09 | | | | | | |
| Waste water to rivers | 10 | | | | | | |
| Treated waste water to rivers | 11 | | | | | | |
| Reductions in stock | 12 | | | | | | |
| Water extraction | 13 | | | | | | |
| Used for life* | 14 | | | | | | |
| Used for industry | 15 | | | | | | |
| Used for agriculture | 16 | | | | | | |
| Used for ecological protection outside the river courses | 17 | | | | | | |
| Outflow | 18 | | | | | | |
| Flow to other regions | 19 | | | | | | |
| Flow to seas and oceans | 20 | | | | | | |
| Transfer out to other regions | 21 | | | | | | |
| Flow to other water bodies inside the region | 22 | | | | | | |
| Consumption by ecological use for the rivers and lakes | 23 | | | | | | |
| Stock at the end of the year | 24 | | | | | | |

Supplemental information: Planned water use for this year is ____10000 cubic meter.

III. The Main Contents

3. Asset Accounts of Water Resources

B. Quality and Its Changes of Water Environment (Unit: Number)

| Grade | | Total | I | II | III | IV | V | Worse than V |
|--------------|----------------------------------|-------|---|----|-----|----|---|--------------|
| First | Second | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Reservoir | No. at the beginning of the year | 01 | | | | | | |
| | Changes during the year | 02 | | | | | | |
| | No. at the end of the year | 03 | | | | | | |
| Lake | No. at the beginning of the year | 04 | | | | | | |
| | Changes during the year | 05 | | | | | | |
| | No. at the end of the year | 06 | | | | | | |
| River | No. at the beginning of the year | 07 | | | | | | |
| | Changes during the year | 08 | | | | | | |
| | No. at the end of the year | 09 | | | | | | |
| Ground Water | No. at the beginning of the year | 10 | | | | | | |
| | Changes during the year | 11 | | | | | | |
| | No. at the end of the year | 12 | | | | | | |

III. The Main Contents

3. Asset Accounts of Water Resources

B. Quality and Its Changes of Water Environment (Unit: Number)(Continued)

- Supplemental information

- 1. When surface water used as sources for central drinking water system, ratio of quantity up to the standard is __, ration of water sources up to the standard is __.

When ground water used as sources for central drinking water system, ratio of quantity up to the standard is __, ration of water sources up to the standard is __.

- 2. Number of lakes at the end of the year is ____. Classified by nutrition conditions, there be ____ oligotrophic lake(s), ____ mesotrophic lake(s), ____ lightly eutrophic lake(s), ____ moderately eutrophic lake(s), ____ heavily eutrophic lake(s).
- 3. Number of reservoirs at the end of the year is ____. Classified by nutrition conditions there be ____ oligotrophic reservoir(s), ____ mesotrophic reservoir(s), ____ lightly eutrophic reservoir(s), ____ moderately eutrophic reservoir(s), ____ heavily eutrophic reservoir(s).

III. The Main Contents

3. Asset Accounts of Water Resources

- Main data sources:
- For Table A, data should be obtained from the departments of water conservancy.
- For Table B, most data should be obtained from the departments of environmental protection, except that data of the ground water usually be obtained from the departments of land and resources.

IV. The Pilot Areas and Schedule

- 1. Pilot Areas
- 2. Schedule

IV. The Pilot Areas and Schedule

- 1. Pilot Areas

Considering the representativeness of natural resources and the work done, the pilot areas cover:

Huairou District in Beijing Municipality

Jixian County in Tianjin Municipality

Hebei Province at the provincial level

Hulunbeir City in Inner Mongolia

Huzhou City in Zhejiang Province

Loudi City in Hunan Province

Chishui City in Guizhou Province

Yan'an City in Shaanxi Province

In addition to the areas mentioned above, some areas in Fujian, Jiangxi, Hubei, Qinghai Provinces participate in the pilot project.

IV. The Pilot Areas and Schedule

- 2. Schedule

Two stages from Nov. 2015 to Dec. 2016 :

The first stage, from Nov. 2015 to July 2016. During this period, the fundamental information should be collected, sorted out, examined and verified, plus with necessary supplementary investigation, so that the natural resources balance sheets of each year of the pilot areas should be worked out since 2011.

However, if there lacks the information, compiling the natural resources balance sheets of one or two years after 2011 is ok.

IV. The Pilot Areas and Schedule

- 2. Schedule (Continued)

The second stage, from Aug. 2016 to Dec. 2016.

During this period, the pilot reports should be submitted, the proposals should be put forward about revising and improving the current statistical and survey system of natural resources and the compilation scheme of natural resources balance sheets.

V. The Future Plan and Major Challenges

- 1. Future Plan
- 2. Major Challenges

V. The Future Plan and Major Challenges

- 1. Future Plan
- According to experiences from the pilot project and based on the further investigation and research work, the National Bureau of Statistics of China will cooperate with the departments concerned, studying on broadening the scope of asset accounts of natural resources, and working out the natural resources balance sheets before the end of 2018.
- In the meantime, we will study and explore the valuation techniques of the main natural resources.

V. The Future Plan and Major Challenges

- 2. Major Challenges
 - A. Relatively big data gap.
 - B. Inconsistent specifications for the same indicator adopted by different administrative departments of natural resources.
 - C. Some estimation methods adopted by the administrative departments concerned for the growth or consumption of various natural resources may not be sufficiently scientific or normative.
 - D. There lacks the internationally-agreed standards or methodologies on accounting some natural resources in monetary terms .
 - E. What's the intension and extension of natural capital and natural capital accounting?

Thanks for your attention!

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