Science, Technology and Innovation monitoring for Policy Development in China

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I. Structure of China’s S&T System
II. STI Statistics System in China
III. STI Statistic for Monitoring Policy Development
I. Structure of China’s S&T System

Figure 1. Organization of China’s Science and Technology
Coordination with other government departments

Guiding provincial and local S&T authorities

Funding S&T and Innovation

Figure 1. Organization of China’s Science and Technology
Economic and Social Development

- Regulations, Guidelines, Policies
- Key Issues of NIS
- Administration of Intermediary S&T Agencies and S&T service system
- Technology diffusion and science spread
- National Legislation, Regulation, Strategies, Planning, Policies
- Priorities Setting
- Science and technology System

Science, Technology, Innovation
R&D resources: Funds and Human resources

- **R&D**
  - R&D institutions;
  - National science engineering and infrastructure;
  - National labs

- **R&D Outputs**
  - Publications;
  - Patents;
  - S&T achievements;
  - S&T Rewards;
  - Domestic technology market;
  - Tech ex/import

- **R&D Commercialization**
  - S&T achievement transfer;
  - New and high tech product;
  - High tech firms;
  - State science parks (54)

Programs:
- National Basic Research Program
- National High-tech R&D
- National Key Technologies R&D Program
- Program of Environment Building for S&T Industries
- Program of R&D Infrastructure and Facility Development
- National Significant Projects
Program of R&D Infrastructure and Facility Development

- State Key Laboratories Development Program
- National Key Science Projects Program
- National Engineering Technology Research Centers Development Program
- R&D Infrastructure and Facility Development Program
- S&T Basic Work Program
- Program of GRI Research for Public Interests
- Program on Key International S&T Cooperative Projects
Program of Environment Building for S&T Industries

- Spark Program
- Torch Program
- National Science and Technology Achievements Diffusion Program
- National Key New Product Program
- Technological Innovation Funds for Science-based firms
- Agriculture Technology Transfer Funds
- Productivity promotion centers
- University S&T parks
- Agricultural S&T parks
II. STI Statistics System in China

Joint Working Team

- NBS
  - PBSDD
    - Statistics Bureau
- MOST
  - PSTD
    - S&T Bureau
- MOE
  - PED (at provincial level)
    - Educational Bureau at city level
- COSTIND
  - Group Company
Data of National S&T Activities

- NBS
  - Enterprises
    - Non-industrial
    - industrial
      - LMEs
      - SMEs
  - Gov. independent R&D institutes
- MOST
  - other public
- MOE
  - U&Cs
  - firms
- COSTIND
  - Group Company
  - gov. independent R&D institutes
The scope of S&T statistics

- Governmental Independent R&D Institutes
  - Civil
  - Defense
- Higher Education Institutions
  - U&Cs
  - Affiliated Hospitals
- Business
  - Industrial Sectors (Mining, Manufacturing and public Utilities)
  - Architecture, Post and Telecommunications, Transportation, Agriculture and Medical Services
The contents of S&T statistics

- S&T professionals
- S&T funding-raising
- S&T expenditure (including R&D)
- S&T achievements
- S&T projects
- S&T institutes
The method of survey

- Annual Census survey
  - Governmental Independent R&D Institutes
  - Higher Education Institutions
  - Industrial Sectors (for LMEs)
- Rolling Census survey
  - Industrial Sectors (for small enterprises, integrated into National Economy Census)
  - Architecture, Post and Telecommunications, Transportation, Agriculture and Medical Services
<table>
<thead>
<tr>
<th>Industries</th>
<th>Implement departments</th>
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<tr>
<td>Agriculture, forestry, husbandry, fishing and service</td>
<td>Statistics Departments</td>
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<tr>
<td>Industry</td>
<td>Statistics Departments : data aggregation of LMEs and SMEs</td>
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<tr>
<td>Industry</td>
<td>S&amp;T Departments : data aggregation of industrial enterprises transferred from government independent S&amp;T institutes</td>
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<tr>
<td>Industry</td>
<td>data aggregation of transnational companies which set up independent S&amp;T institutes in the field of industries</td>
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<tr>
<td>Industry</td>
<td>CSTIND : data aggregation of military enterprises</td>
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<td>Architecture</td>
<td>Statistics Departments</td>
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<td>Geological prospecting and water conservancy</td>
<td>Statistics Departments</td>
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<td>Transportation, storage and telecommunications</td>
<td>Statistics Departments : data aggregation of transportation, storage and telecommunications</td>
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<tr>
<td>Transportation, storage and telecommunications</td>
<td>S&amp;T Department : data aggregation of transnational companies which set up independent S&amp;T institutes in the field of telecommunication</td>
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<td>Computer and applying service</td>
<td>Statistics Departments</td>
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<td>Healthcare</td>
<td>Statistics Departments : data aggregation of other healthcare units except those affiliated to universities</td>
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<tr>
<td>Healthcare</td>
<td>Educational Departments : data aggregation of hospitals affiliated to universities</td>
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<td>Education</td>
<td>Educational Departments</td>
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<td>Scientific research</td>
<td>S&amp;T Departments : data aggregation of civil departments</td>
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<td>Scientific research</td>
<td>CSTIND : data aggregation of military departments of GIR&amp;DI</td>
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<tr>
<td>Technological service and others</td>
<td>S&amp;T Departments : data aggregation of non-state-owned S&amp;T institutes and other Technological service units</td>
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Data Collection Procedure

1. Provincial training
2. City training
3. Institutional training
4. Fill in forms
5. Collect forms, input and examine
6. Gov. inde. S&T institutes
7. Submit the data
8. Exam. And evalu. at provincial level
9. MOST
10. Examination, evaluation and
III. STI Statistic for Monitoring Policy Development

1. National S&T Statistic Survey
   - From 1985 to 1995
     ▪ Governmental Independent R&D Institutes
     ▪ Higher Education Institutions
     ▪ Industrial Sectors (for LMEs)
   - After 1995
     ▪ Small industrial enterprises covered
     ▪ None industrial sectors covered
   - In 2000, the scope covered all the units with R&D activities throughout national economy and industries
   - In 2009, legal units with intense R&D activities in national economy were covered
Other S&T Statistics Surveys

- Survey of Local Governments S&T Appropriation (since 1990)
- Survey on National S&T Programs (since 1994)
- Innovation Survey (Pilot survey in 1997, and first national survey in 2007)
2. Other S&T Statistics Surveys

- Specific S&T Statistics Surveys
  - national high-tech development zones
  - national S&T achievements
  - private S&T enterprises
  - technology markets
  - international S&T cooperation
  - soft science research institutes
  - productivity promotion centers
  - science popularity
  - Venture capital
  - Research infrastructure and facilities
3. Major S&T Statictic Publications

- *National innovation Index*
- *Monitoring Report of Regional S&T Development*
- *China Science and Technology Indicators*
- *Yearbook on China Science and Technology Statistics*
- *Yearbook on China High-Tech Industry Statistics*
- *China Science and Technology Statistics Data*
- *China High-Tech Industry Data.*
Thank you

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