

Energy, Environment and Development

Revitalizing R&D

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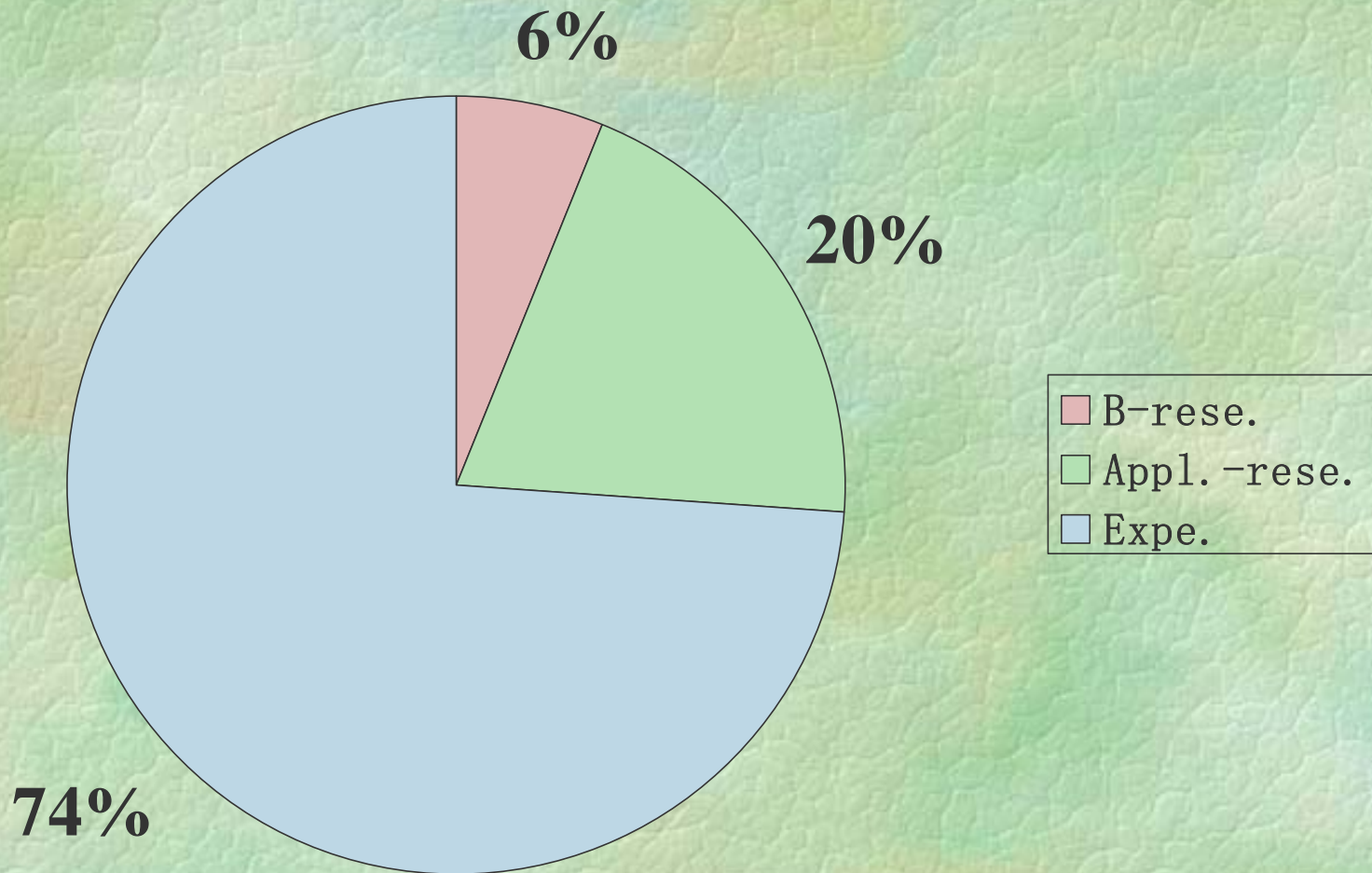
14-16 Dec, 2006 **Bangalore, India**

China's R&D Expenditure (in 2004)

- **China's R&D expenditures has hit a historical high at US\$ 25 billion, or 1.23% of GDP.**
- **S&T appropriation was worth US\$ 14 billion, accounting for 3.8% of the nation's total expenditures and having a 16% growth compared with the previous year.**

- **R&D expenditures mix was: basic research 6%, applied research 20.4%, and experiments 73.6% (see the chart).**
- **In terms of sectoral distributions, industrial R&D expenditure made about 67% of the nation's total (4.4% higher than the previous year), showing an enhanced industrial position in technological innovations.**

Shares of R&D Expenditure (in 2004)



Medium- and Long-term Plan for S&T Development (2006-2020)

- **The plan is a National Guidelines released in early 2006.**
- **To raise the weight of China's R&D expenditures in GDP to 2.5% or above, with an S&T advancement contribution rate reaching 60%.**
- **To increase the number of Chinese invention patent grants and citations of Chinese S&T papers, making China sit on 5-th place in the world.**

- **General targets by 2020:**
 - **enhancing China's proprietary innovation capacity.**
 - **raising China's S&T capacity in promoting economic and social development and safeguarding national security.**
 - **providing an enhanced S&T support for building a full-fledged well-to-do society.**
 - **striving for a fortified position in basic scientific researches and frontier technologies.**
 - **shifting China into an innovation-oriented nation, and lay a solid foundation for becoming a world S&T power by the mid-century.**

Reforms for S&T Management

In order to ensure the state treasury appropriation for S&T activities deserves what it pays for, the MOST made Comments on the Reform of National S&T Project Management by the following the priorities:

- 1. Establishing a unified information platform to provide seamless for national S&T projects management.**
- 2. Establishing a unified consultation, review, and approval database for national S&T projects.**
- 3. Enhancing the support for industrial technology innovation activities.**

- 4. Strengthening the functions of management and supervision, and establishing an effective responsibility system.**
- 5. Personnel training and construction of S&T infrastructures shall be made important indicators for measuring a project.**
- 6. Strengthening the management of intellectual property, and making patents and innovations an important basis for establishing a project.**
- 7. Reviewing process for results or findings will be abolished at the national level.**

Universities:

Enhancing roles in S&T Innovation

MOE and MOST recently make proposals to universities on taking full advantage of their roles in S&T innovations :

- 1. fully aware of the importance of strengthening S&T innovation activities.**
- 2. perfecting the guidelines and principles for S&T innovation activities.**

- 3. increasing input, and firming up the foundation for such innovation.**
- 4. strengthening capacity building of faculty.**
- 5. strengthening capacity building of S&T innovation platforms, and improving S&T infrastructure.**
- 6. enhancing cooperation between industry, universities and research institutes, and facilitating spin-off and associated industrialization of research findings.**
- 7. expanding S&T cooperation and exchanges both domestically or internationally.**
- 8. strengthening the organizing and steering part of S&T innovation activities.**

Enterprises: Building Research Institutes

- 1. Under the direct jurisdiction of the central government, industrial enterprises have recently established 476 institutes working on technological innovations, with a working staff of 276,000 people.**
- 2. All the state-owned enterprises have their own research institutes at the national level.**

- 3. Great progresses have been achieved in 2005. 17 central S&T enterprises have been honored by national prizes; 108 awards at provincial level.**
- 4. The most influential and strategically important S&T activity was the successful launch and return of the capsule of “Shenzhou 6th”.**
- 5. Furthermore, some activities will be pushed forward in coming years, including proprietary innovation capacity building, overall quality raising, and sustainable development capacity building geared to national industrial enterprises.**

Research institutes: Directions & objectives of CAS

- 1. Regarding the sustainable development in economic and social areas, to obtain a systematic knowledge of changes in resources, environment, and ecology, in an attempt to provide evidences for implementing the concept of scientific development.**

- 2. In the area of strategic technologies, to support industrial upgrading, nurture up new industries, and meet the nation's security needs.**
- 3. The major S&T issues involve, e.g economic and social sustainable development, technologies and means for resources efficiency and development, economic and social forecasting and prediction, long range climate forecasting etc.**
- 4. The enterprises created by CAS will expect an annual revenue of US\$ 21 billion by 2010 and result in around 100,000 jobs for the nation.**

Thanks