

Title	Science and technology in Japan : activities of CRDS / JST
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Citation	Proceedings of the International Symposium on SEASTAR2000 and Bio-logging Science (The 5th SEASTAR2000 Workshop) (2004): 84-85
Issue Date	2004
URL	<a href="http://hdl.handle.net/2433/44111">http://hdl.handle.net/2433/44111</a>
Right	
Type	Conference Paper
Textversion	publisher

# Science & Technology in Japan: Activities of CRDS/JST

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## **ABSTRACT**

The Japan Science and Technology Agency (JST) is one of the independent funding agencies of the Government of Japan. JST's mission is to promote science and technology in Japan through various activities, including promotion of all phases of R&D from basic researches to commercialization, and distributing scientific and technical information. As one of them, JST supports basic research for creating new technological seeds through grants for some types of programs. These are top-down programs, with Strategic Sectors set by the Ministry of Education, Culture, Sports, Science and Technology (MEXT). The major research areas of the programs are four as follows: Life Sciences, IT, Environmental Sciences, Nanotechnology and Materials. These four areas are given the highest priority in accordance with national and social needs in the Second Science and Technology Basic Plan. In order to promote top-down programs more effectively, it is necessary to strengthen R&D strategy design functions. JST established the Center for Research and Development Strategy (CRDS) in July, 2003 to design R&D strategy for JST programs. In this paper, outline of science and technology policy in Japan and activities of CRDS were introduced.

**KEYWORDS: Science and Technology, R&D Strategy, CRDS, Japan**

## **S&T POLICY**

The S&T policy in Japan is presented in the S&T Basic Plan, which is established in compliance with the S&T Basic Law. The Basic Law was enacted in 1995. Since 1996, the Basic Plan has been established every 5 years.

During the period of the 1<sup>st</sup> Basic Plan from 1996 to 2000, the R&D expenditures for 5 years exceeded the target of 17 trillion yen. In 2001, the beginning of the 2<sup>nd</sup> Basic Plan, the Council for S&T Policies (CSTP) was established in the Cabinet Office as the control tower of S&T Policy. The R&D expenditures for 5 years during the period of the 2<sup>nd</sup> Basic Plan are targeting 24 trillion yen. The 3<sup>rd</sup> Basic Plan will start in 2006, and discussions on planning have started in some administrative organizations.

The Basic Concept of the 2<sup>nd</sup> Basic plan consists of 3 creations as follows: a creation of new knowledge and wisdom, a creation of national vitality by use of knowledge and wisdom, and a creation of an affluent society by use of knowledge and wisdom. The 2<sup>nd</sup> basic plan has 3 points for its basic policies as follows: strategic priority setting on S&T, S&T system reform to create and utilize excellent outcomes, and internationalization of S&T activities. The government allocates resources with highest priority in 4 areas as follows: Life Sciences, Information Technology, Environmental S&T, and Nanotechnology and Materials. The government also promotes the following 4 areas as identified essentials to the nation: Energy, Manufacturing, Social Infrastructure, and Exploratory Research on Space and Ocean.

In the 2<sup>nd</sup> Basic Plan, the Mission of CSTP to

implement the S&T Basic Plan as defined. It includes to draft a strategic plan to promote S&T in each prioritized area, to suggest policies for resource allocation, to promote of large-scale R&D projects under inter-ministry cooperation.

## **S&T ADMINISTRATIVE ORGANIZATIONS**

The Cabinet has the Cabinet Office, which assists the general strategic functions of the Cabinet and whose head is the Prime Minister. There are four councils of important policies in the Cabinet Office, and one of them is CSTP. Minister of State for Special Missions are placed only within the Cabinet office, including one in charge of the S&T Policy.

CSTP drafts a strategic plan on S&T, which become the basis for each policy of relevant ministries, including Ministries of Education, Culture, Sports, S&T (MEXT). MEXT regulates some Independent Administrative Institutions such as research institutions and funding agencies. There are two funding agencies under the control of MEXT: Japan Society of the Promotion of Science (JSPS) and Japan Science and Technology Agency (JST).

## **GOVERNMENT BUDGET FOR S&T**

The Government Budget for S&T is a part of the total R&D expenditures in Japan, which is nearly 17 trillion yen this year, about 3.3% of GDP. Figure 1 shows that the Government Budget for S&T has been increasing steadily for the past 5 years. Doubling the Competitive Funds is one of the targets of 2<sup>nd</sup> S&T Basic Plan to promote basic science. In the next year, the last year of the 2nd Basic Plan, the target will be achieved.

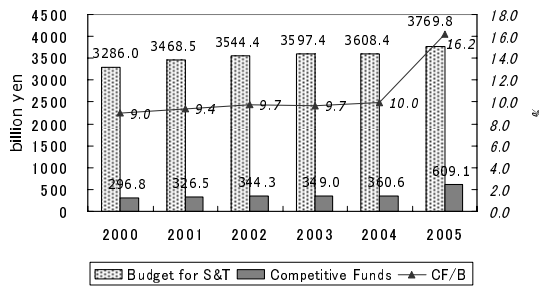


Fig.1 Trends of Government Budget for S&T in Japan, FY2000-2005

### ACTIVITIES OF CRDS/JST

JST, one of the funding agencies in Japan, carries out 5 major activities as follows: Creation of Advanced Technology (Basic Research), Promotion of Business Using Advanced Technology (Technology Transfer), Promotion of Distribution of S&T Information, Promotion of Public Understanding of S&T, and Researchers Exchange and Research Support. JST established the Center for Research and Development Strategy (CRDS) in July, 2003 to design R&D strategy for JST programs.

Missions of CRDS are as follows: to form communities of government organizations and researcher groups, to clarify R&D fields, areas and subjects which emerge as important ones, ways to promote, etc., to make comparisons with foreign countries of the situation surrounding R&D, and to draw up the R&D strategy of JST and contribute to promotion of R&D in our country. CRDS forms groups of each research area. Cross-group activities are also conducted to cover common topics for each area. Strategies are designed by screening. Fellows in CRDS make researches to grasp important subjects. They are screened in each group to find out subjects to be promoted intensively. Further they are screened by taking account of social needs and discussions at

the meetings of fellows to define subjects to be set priority. Overseas researches for some special themes, called the Global Technical Comparison (G-TeC), are also carried out. Considering the results of screening and G-TeC, R&D strategies are designed (Fig.2).

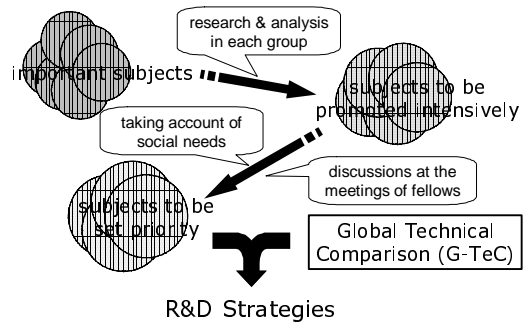


Fig.2 How to Design R&D Strategies in CRDS

R&D strategies designed by CRDS are proposed to JST to set research areas and select supervisors for Basic Research Programs. CRDS also provide some information for MEXT and CSTP to set Strategic Sectors for JST programs of Basic Research and to set priorities for the coming 3<sup>rd</sup> Basic Plan.

### CONCLUDING REMARKS

CRDS is a still new organization but its missions are necessary to promote S&T in Japan. Their activities will be expected to lead future direction of S&T not only in Japan but also in Asia.

### REFERENCE

Science and Technology, Academic Policy Bureau, Ministry of Education, Culture, Sports, Science and Technology. (2003). *Indicators of Science and Technology*.