



Section 2

New Policy Making Process – Constructing a Better Relationship with Society

1 Toward Policy Making Based on the Voices of Society

(1) To utilize voices from the public and the ground in policies

Recent policy developments such as the “reviewing of government programs” have given related personnel a good opportunity to reaffirm the importance of strengthening understanding and support of S&T.

Amidst such changes, there is an increasing willingness to listen to the public in the process of policy making in the Japanese government. The CSTP in its evaluation of the 4th Science and Technology Basic Plan sought public feedback in its mid-term report for the first time in addition to the public feedback in the final report. It also sought public comments during the drafting of the “2011 Action Plan for the Implementation of Important Science and Technology Policy Measures” and the making of the “Evaluation on Priority of Science and Technology Related Policies Included in Budget Requests for Fiscal 2011.” MEXT sought public feedback on the results of the respective reviewing of government programs for fiscal years 2009 and 2010.

In the budget compilation for fiscal year 2011, the government set up an “Evaluation Council on Request for the Special Funding to Bring Vigor Back to Japan” to evaluate the policies requested by the various ministries in an open environment (so-called “policy contest”) for fund allocation to the “the Special Funding to Bring Vigor Back to Japan.” In this occasion, the government collected a large number of public opinions, and many of them about S&T policies were taken into consideration.

MEXT takes an approach of “jukugi,” (discussions based on serious thought), a combination of “jukuryo” (serious consideration) and “giron” (discussion), in solving problems and formulating policies. It started the official website “MEXT Policy Creation Engine Jukugi Dialogs” in fiscal year 2010, and provided a platform for policy makers and young researchers working on the ground to hold discussions directly. The opinions and discussions gained from the “jukugi” held in the summer of 2010 were reflected in the mid-term report of the “Budget Monitoring and Streamlining Team.” They are also useful in specific reforms such as establishing a basic funding for Grant-in-Aid for Scientific Research in the budget over a few years, and improving the electronic application system for research funding (Figure 1-3-5).



Figure 1-3-5/Reform Examples Based on Ground Feedback from “Jukugi,” etc. (Grant-in-Aid for Scientific Research)

Very strong feedback from R&D sites

[Effective period of research grants-in-aid (annual amount carried forward)]

- A lot of time is wasted at the end of each fiscal year in procedures and asset disposal required for carrying budget forward
- Procurement at the end of the fiscal year and stock procurement over two fiscal years are basically not allowed
- Necessary to procure many unnecessary expendables at the end of the year in order to use up the budget

Expansion and Policy Reform of Science Research Grants-in-Aid

* “Basic Funding” policy for “Grant-in-Aid for Scientific Research (C),” “Grant-in-Aid for Young Scientists (B)” and “Challenging Exploratory Research,” which many researchers involved in small-scale research projects apply for, will allow new approvals to utilize the research fund over a few years from fiscal year 2011.

Basic funds of 85.3 billion yen, 80% of new approvals targeted

[Expected effects]

- > Flexible disbursement of funds in case of unexpected developments in research, including accelerated release.
- > Ability to use funds over a few years allows researchers to focus on their work and gets rid of unnecessary “budget clearing.”

Source: Created by MEXT

In the future, it is necessary to continue to explore ways to further make use of dialogs with citizens and develop science, technology and innovation policies as “policies for society and the public.”

To achieve this, the power of the “New Public Commons” such as NPOs probably becomes the key to promote S&T communication and deepen dialogs between policy makers and the public.

It is hoped that, by joining in discussions to promote science, technology and innovation, cooperating in efforts that combine international joint research and government development assistance, and taking part in surveys and analyses of S&T activities and social issues, NPOs become the bridge linking the government and researchers with the public, and play a supporting role in related activities.

Unfortunately, unlike in the West, there are still not many policy discussions involving policy makers in the central and local governments and NPOs. Currently, more than 100 NPOs¹ have words such as “promotion of science and technology,” “promoting science and technology,” and “technology” in their corporate goals, and it is hoped that in the future, these NPOs proactively pursue their goals and become mediators of S&T communication or act as a bridge to assist public participation in science, technology and innovation policies.

(2) Trends in Technology Assessment based on Dialogs with Society

-Trends in European Countries and Issues in Japan-

In recent years, many countries have been implementing a new technology assessment that includes

¹ the Cabinet Office’s portal site



dialogs with the society with an aim to scientifically evaluate the performance, safety and social impact of technology.

The technology assessment carried out mainly in Europe in recent years does not only “evaluate technology,” but also includes activities such as predicting the future social impact of the technology in the early stage of the technological development based on scientific evidence, raising problems on technology and society and evaluating the countermeasures through dialogs with society, and supporting citizens in reflecting their views in policies.

In Europe, public concerns about the impact of S&T on society and the environment increased in the 1980s and discussions on technology assessment focusing on dialogs with society have increased in numbers. As a result, many technology assessment organizations were established and still proactively continue their activities today.

In 1983, France became the first country in Europe to establish a S&T evaluation division, (OPECST¹) within the national assembly. Made up of members of national assembly and with an aim to provide information to support policy decisions in the national assembly, the division implements surveys on the social impact of S&T, and organizes free public hearings.

In 1989, the U.K. established a temporary S&T office (POST²) in the parliament, which became permanent from 2001. POST surveys various issues related to S&T and society and supports parliamentary activities by reporting to parliament. It also organizes and supports dialog sessions with the public.

In 1986, the Netherlands established a S&T evaluation division (NOTA³) within the Royal Netherlands Academy of Arts and Sciences, which was subsequently, renamed the Rathenau Institute in 1994. It is funded by the Ministry of Education, Culture and Science and reports to the Dutch parliament and the European Parliament. It implements a wide variety of activities related to S&T and society, such as providing information to politicians, shaping opinions on society and public enlightenment.

In 1986, Denmark established a S&T evaluation division (DBT⁴) as a temporary statutory board. From 1995, it became a permanent organization and comes under the supervision of the Ministry of Research and as an independent body; it submits survey reports to the parliament and the ministry. DBT conducts public enlightenment activities, surveys on the potential of S&T for the society and the public and its impact and mandates participation from non-specialists. In particular, it values social consensus building through public participation and implements many activities to achieve this goal.

As can be seen, technology assessment in Europe is clearly structured in the policy making process, allowing policies to reflect the opinions of society.

In Japan, on the other hand, there are no public organizations implementing technology assessment, like those in Europe. The assessment for the draft of the 4th Science and Technology Basic Plan proposed strengthening response to Ethical, Legal and Social Issues (ELSI) with regard to promoting science, technology and innovation policies from the viewpoint of the public. As a result, the plan suggested guiding principles for personnel involved in S&T, strengthening risk assessment efforts, expanding

¹ Office parlementaire d'évaluation des choix scientifiques et technologiques

² Parliamentary Office of Science and Technology

³ Netherlands Organization of Technology Assessment

⁴ Danish Board of Technology



regulatory science, and at the same time for technology assessment, it indicated that “the Japanese government will evaluate how technology assessment should be, and when formulating policies, will endeavor to get consensus from a broad spectrum of people based on technology assessment.” The Japanese government is expected to make more efforts to establish the ideal technology assessment based on dialogs with society in cooperation with researchers in the humanities and social sciences, and include in policy making the process of formulating social consensus through this technology assessment.

2 “Science for Policy” in Science, Technology and Innovation Policies

In order to advance science, technology and innovation policies while getting more people to participate in them and gaining their understanding and trust, it is necessary to draft and promote policies based on objective evidence and ensure that the policy making process is more logical, while ensuring the public understands the policies.

(1) Efforts in Europe and America

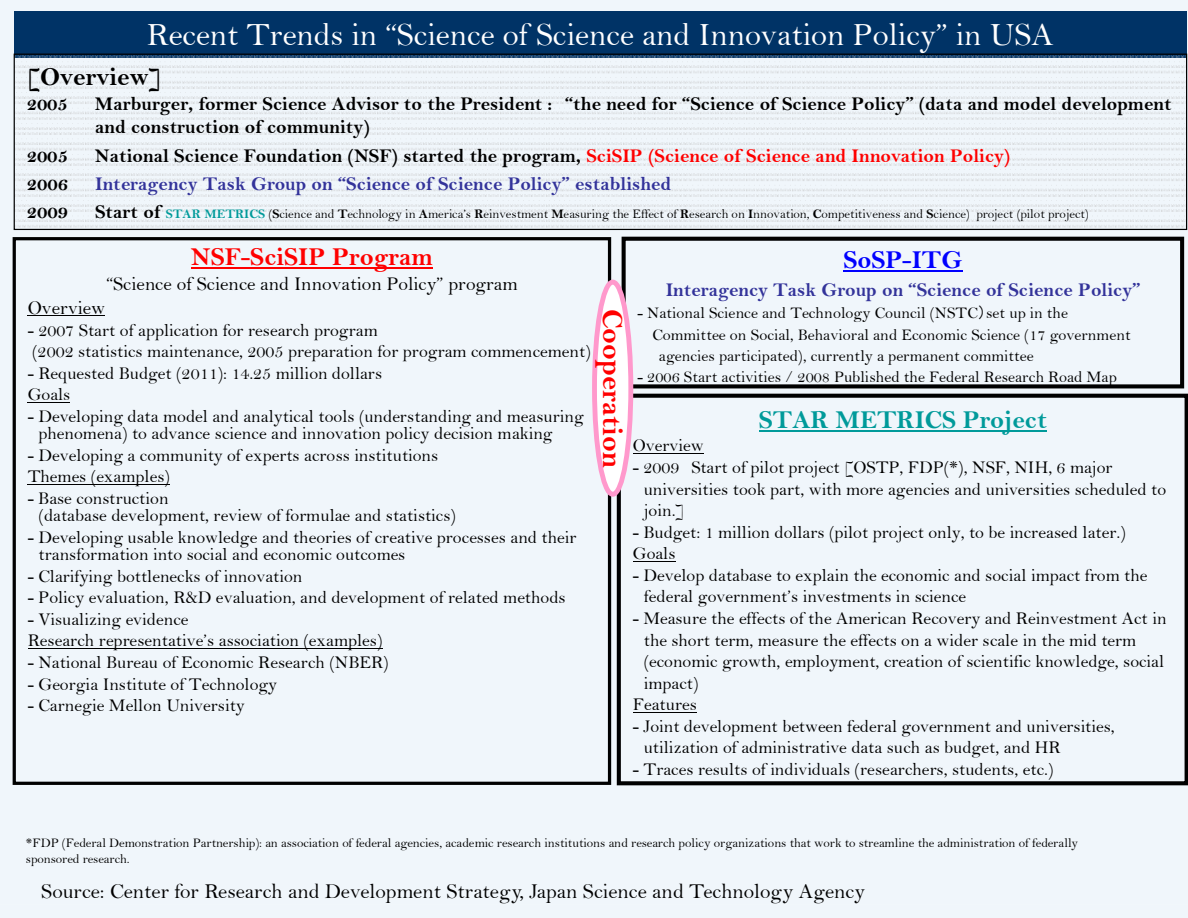
Many countries, especially in Europe and America, promote research and construct database to uncover the mechanism of science, technology and innovation scientifically, with the aim of making use of it in policy making.

In the USA, the National Science Foundation (NSF) has been promoting two programs - the “Science of Science and Innovation Policy (SciSIP),” a program which aims to develop a data and analysis model and analytic tools to support decision-making on science and innovation policies from 2005, and the “STAR METRICS¹” Project (pilot project), a program to develop database to explain the economic and social impact from the federal government’s investments in science from 2009. These activities involve not only university researchers but also government agencies such as the Office of Science and Technology Policy (OSTP) (Figure 1-3-6).

¹ Science and Technology for America’s Reinvestment: Measuring the Effect of Research on Innovation, Competitiveness and Science



● Figure 1-3-6/ Recent Trends about Science in S&T Policies in America



To support mutual understanding and cooperation between researchers and the congress, the American Association for the Advancement of Science (AAAS) provides members of the congress with the latest information and specialized views on S&T in an objective manner, and as an effort to develop human resources, has been implementing the “AAAS Science and Technology Policy Fellowships” from 1973. This fellowship scheme dispatches researchers and technicians¹ for a year in principle, to the congress, committees in the Senate and the House of Representatives, senators’ and representatives’ offices, and administrative agencies such as ministries, to allow them to experience first-hand the process of drafting S&T policies. Researchers and technicians receive an annual grant of 75,000 dollars to provide scientific knowledge and specialized analyses to the members of the congress. A total of 2000 people have been accepted so far from applicants from universities, companies and NPOs, and in recent years, 40-50% of those who have completed their fellowship chose to remain in Washington D.C. to utilize their specialized knowledge to help out in government policy making.

In the U.K., the National Endowment for Science, Technology and the Arts (NESTA), an organization independent from the government, conducts research and provides advice on innovation policies. The European Commission is creating indicators and accumulating data for innovation activities in preparation for evaluating innovation policies. In addition, within Europe, many universities and research institutions

¹ Science and Technology Policy Fellowships are open to U.S. citizens who have a PhD or PhD-equivalent qualification in a natural science, or social science field (Students with a Master in Engineering and 3 years of working experience are also eligible).



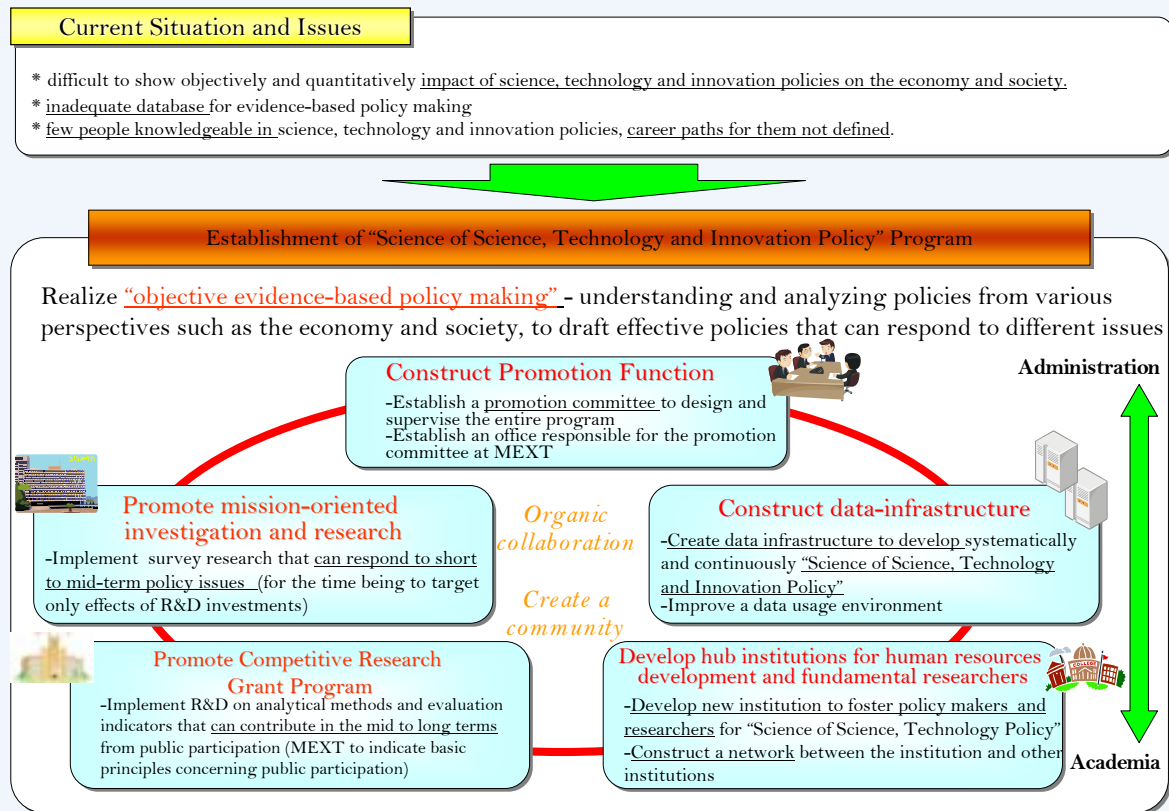
form networks and conduct scientific research in science, technology and innovation policies and develop human resources.

(2) New Trends in Japan

In Japan, although there are examples during policy making in the environment field of referring to the results of expected analyses by several experts when evaluating the targets for reducing CO2 emissions leading to global warming, it still lags far behind the USA and European countries in policy making efforts that are based on objective evidence that makes use of experts' knowledge.

As a result, in the evaluation of the 4th Science and Technology Basic Plan, it was suggested that “the Japanese government, in order to formulate policies that are based on objective evidence, and to reflect the evaluation and results in policies, will promote ‘Science of Science, Technology and Innovation Policy.’” MEXT started the “Science of Science, Technology and Innovation Policy,” a project which aims to achieve “Evidence-based Policy Making” - analyzing and understanding policies from various perspectives such as the economy and society, to draft effective policies that can respond to different issues, in order to achieve a new policy making process from 2011 (Figure 1-3-7). This project, like the one in the USA, aims to build a hub to research and develop analytical methods and statistical indicators used in making policies and reflecting the evaluation and results of the policies, maintain data and information bases, conduct survey research on short to mid-term policy issues, and develop personnel and researchers who will be in charge of running “Science of Science, Technology and Innovation Policy.”

● Figure 1-3-7/ “Science of Science, Technology and Innovation Policy” Program



Source: Created by MEXT



In the future, in order to establish this new policy making process in the Japanese government, it is important to involve researchers from the fields of humanities and social sciences, and promote this project with cooperation from the universities, research institutions and government agencies. In addition, it is also important to develop a career path and nurture talents who can link objective evidence to policy making, i.e., researchers who have knowledge about the policy making process and policy makers who have knowledge about surveys, analyses and data.

Section 3 New Horizons Arising from Dialogues, Mutual Understanding and Participation

What kind of society lies ahead in the future of S&T?

In the survey “Contribution of Science and Technology to Future Society” (the National Institute of Science and Technology Policy) conducted between 2009 and 2010, there are some examples of what the future society will look like (Figure 1-3-8).

● Table 1-3-8 / Examples of Expected Future Society

Examples
1. Society where various diagnostic technologies and systems are appropriately embedded in daily lives so that health maintenance by individuals has started to prevail
2. Society where people can selectively or comprehensively choose the energy they wish to use, and are more actively involved in environmental protection and prevention of global warming
3. Society where people have begun to cope with various disasters brought about by environmental changes
4. Society where working styles incorporating IT are the norms

Source: “Contribution of Science and Technology to Future Society,” National Institute of Science and Technology Policy

Specifically, some examples raised include artificial organs using human cells or tissues created from iPS cells (may be widespread around 2033¹), diagnostic methods for risks of acquiring diseases through genome data (may be widespread around 2023), home energy management system using home communication network (may be widespread around 2019), operation of a disaster prevention and reduction structure constructed by local residents and administrative agencies to provide information and educate people on disaster risks (may be widespread around 2020), virtual office systems to reduce the number of current real office workers by half (may be widespread around 2025). If all these examples come true, we can expect a society that connects S&T with our daily lives even closer than today.

¹ “Widespread” in the survey means “widely used in Japan.”