

TA-INSTITUTION

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Limits of Past Practices and Possible Future Institutionalization of TA in Japan

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Even though Technology Assessment (TA) has not been institutionalized in Japan, there have been many TA practices since the idea of TA was introduced from the US in the late 1960's. This article analyzes the nature and limits of those TA practices; then, the current discussion about the TA and the possible future institutionalization of TA in Japan is introduced. This article is based on the project "Innovation and Institutionalization of Technology Assessment in Japan: Dealing with Nanotechnologies" (2007–2011) sponsored by the Research Institute for Science and Technology for Society (RISTEX).

1 Past Practices of TA in Japan

1.1 Early Experiments

In November 1969, a mission from the Japan Techno-Economics Society (JATES) visited the US and brought back a novel term TA. After the mission came back, the Eight-Members Committee established in 1970 placed TA on the agenda, explaining that the reconsideration of the development of science and technology was a top priority to solve urgent problems such as global environmental issues (Yoshizawa 2009).

The Planning Bureau of the Science and Technology Agency (STA) began to research on TA in 1970 and mentioned about TA in 1970 White Paper published in April 1971. The 1973 Science and Technology White Paper stated, "TA (...) seeks to examine and evaluate technology from many aspects beforehand, including its benefits and undesirable impacts, the technological as well as economic potential, and the socie-

ty's viewpoint." This text clearly indicates wider social impacts TA will focus.

In addition to abstract discussion, the Planning Bureau established in April 1971 an expert committee and started case studies of TA to develop methodologies of TA. Concrete areas chosen were pesticide, high-rise building and computer aided intelligence. For example, TA on pesticide has broader focus on various social aspects. But this was the case study for the development of the methodology, and experimental feedback to the decision making or the agenda setting on agriculture was not undertaken.

The STA also experimented TA methods in the policy areas under the STA jurisdiction in 1973. But the Planning Bureau was fearful of the resistance from bureaus in charge of specific areas such as nuclear policy and space policy. So the five bureaus in the STA independently conducted self assessment TA in 1973 to perform accountability for the individual bureaus' own projects from narrow focus. One member of the Planning Bureau admits that there was no serious mood in the bureau because of the missing link between TA exercises and policymaking.

As those in the bureau realized the limitation of such sectional TA activities, an official once lobbied for the establishment of a parliamentary TA organization like the US Office of Technology Assessment (OTA). The official lobbied some Diet members during 1977-78, but these members had never in mind that the Diet undertakes TA activities.

The Ministry of International Trade and Industry (MITI) also launched an in-house TA study group in May 1971 and started with a TA case study. At the same time, a MITI's Advisory Committee for Industrial Structure reported that "it is necessary to place TA in the total system in the industrial policy". In March 1973, MITI informed that they would conduct TA on as many as possible R&D projects. MITI had a will to use TA in the administration of R&D projects. One of the interesting attempts was the TA related to the Sunshine Project. But as no feedback mechanism was established at that time, the TA report, which was interesting as an analysis, was not used effectively.

1.2 New Attempts of Participatory TA since 2000

In Japan around the year 2000, public concern over food safety arose as a variety of issues associated with food emerged. The handling of BSE, in particular, incurred public distrust of governments. At that time, participatory TA, such as the consensus conference developed by Denmark, drew interest as a tool for improving communication. Using Danish practice as a model, consensus conferences were held for GM foods at national and local levels in Japan (Shiroyama et al. 2010).

At the national level, the “Society for Techno-innovation in Agriculture, Forestry, and Fisheries” (STAFF) under the “Ministry of Agriculture, Forest and Fishery” (MAFF) held the consensus conference on GM crops in 2000. This was conducted by STAFF under the project of “Research Responding to the Citizen’s Proposal.” The purpose was to obtain people’s concerns and suggestions through the consensus conference and promote the necessary research. The final result was presented to the MAFF and the Ministry of Health, Labor and Welfare (MHLW). Following the inputs, the monitoring research program of GM crops was introduced in 2001.

But compared to the wideness of perspectives presented in the final report including benefits, environmental impacts, health impacts, industrial structure and international relations, the scope of social impacts which can be dealt with under the institutional framework was very limited.

Another interesting case of participatory TA on GM is the consensus conference by the Hokkaido Government. With the proposed review of the ordinance regarding GM in Hokkaido (an ordinance preventing cross-cultivation (involving the growing of GM crops in open environment)), the purpose of the consensus conference was to gain an understanding of the general public opinion and reflect the discussion on the topic in the review process.

2 Reasons for the Lack of Institutionalization

As the cases above show, even though there were many individual attempts of TA practices, those

were never institutionalized in Japan. There seem to be several reasons for that.

First reason is the weak interests of Diet members. When a STA official lobbied the Diet members for the establishment of parliamentary TA organization in 1970’s, they did not have interests in TA. The situation changed in the 1990’s. In June 1994, the Science and Technology and Policy Association was set up involving around 150 bipartisan Diet members. The association attempted to submit a bill for the establishment of a parliamentary TA organization in 1995 and 1997. But after several meetings, the association finally dissolved in 2002 without the legislation of a parliamentary TA (Yoshizawa 2009). The bipartisan group played a very important role for the establishment of Science and Technology Basic Law in 1995. But the importance of parliamentary TA seemed to be lower compared to the importance of Science and Technology Basic Law in the bargain between politicians and bureaucrats.

Second reason is the methodological problem. Japanese early TA activities in 1970’s were based on the engineering concept of “total system”, which is to be represented as a single explicit, self-contained entity encompassing a variety of actors’ values (Yoshizawa 2009). But because of its orientation toward quantification and integration of values based on one dimension, it is likely that some issues are dismissed or intentionally left out of consideration, and it overlooks the possibility of different ways of perceiving issues. This narrow focus on strict scientific methodological orientation results in the uselessness in of the actual policy context which requires the consideration of wider social contexts.

Third reason is the lack of feedback mechanism. One of the important issues emerged from various TA practices in Japan is the issue of “appropriate distance”, that is the issue of to what degree the conclusions of the TA should be linked to policy making. In the case of the STAFF consensus conference, the MAFF, who was taking a risk by funding a study with no clear outcome known in advance, wanted to avoid incidences of policies being restricted by the results of the conference. The Hokkaido consensus conference had the possibility of having an influence in the policy making process. But, there can be a pos-

sibility that range of social impacts would be narrowed down because of the direct link to policy making (Shiroyama et al. 2010).

3 Current Discussion and Possible Future Institutionalization of TA in Japan

After the change of administration which took power in September 2009, science and technology policy, together with global warming policy, are among the priority areas; and TA re-emerged on policy agenda.

Japan's Ministry of Education, Culture, Sports, Science and Technology (MEXT) has emphasized the importance of guidelines to "promote efforts for attaining wide-ranging citizen consensus based on technology assessment when making policy decisions" in "Moving toward a Comprehensive Science and Technology Strategy Looking at Japan in the Medium and Long Term (Interim Report): Important Policies following the Third Term Science and Technology Basic Plan" (December 25, 2009). Also, the "New Growth Strategy (Basic Policies)" (December 30, 2009) clearly expresses a posture of support for strategic problem-solving innovations such as measures to counter Japan's low birth rate and aging population and to curb global warming using science and technology innovation. For such strategic problem-solving innovations, TA can be a tool.

It seems to be necessary to establish specialized bodies for TA appropriate to Japan's political and social conditions. These kinds of TA agencies and activities will maintain a certain distance from the actual formulation of strategy for problem-solving innovations, but they can contribute to the process by making connections between technology and society where they had previously been seen as separate.

There seem to be four possible future scenarios for TA institutionalization in Japan. It is important to notice that those multiple schemas may coexist.

3.1 Institutionalization of a TA Body at the Government Level

If an institution is to be established in a body of the Japanese government, options can be broadly

divided into establishment either within the Diet or within an administrative agency. As part of amendments to the Diet Law, the establishment of a TA body in Japan could be considered along with measures to strengthen the research function of the legislature. Unlike the 1990s, when a bill to establish a parliamentary bureau was considered, currently understanding and interest in TA is increasing along with interest in the Diet Library's function as a knowledge base of society. And the present situation seems to offer an opportunity for change because there is interest in strengthening the role of politicians against the role of bureaucrats after the change of administration in September 2009. The US and West European countries offer many examples of bipartisan management of TA. In Japan as well, the Science and Technology Basic Act and the Act on Strengthening Research and Development Capabilities were promoted across party lines, and the strengthening of a bipartisan base for investigative capabilities in the field of science and technology policy is both necessary and possible.

If such an institution is created within a national-level administrative agency, the Cabinet Office may be seen as the most appropriate location. However, a substantial degree of autonomy from the direct formulation of strategy is necessary. To attain a high level of institutional autonomy, it would also be possible to establish a "special organization" under the jurisdiction of the Cabinet Office, similar to the present-day Science Council of Japan. TA carried out in such a way could be used as a basis for the establishment of overall policy strategy by the National Strategy Bureau and the Science and Technology Strategy Headquarter now discussed in government.

3.2 Establishment of a Framework for Funding TA Activities

Institutionalization would be achieved through government creation of a Cabinet-level framework to fund TA activities, across ministerial jurisdictions, which would ensure a variety of viewpoints. Then the implementation of these activities can be entrusted to different bodies. Because TA should be a routine activity, it would also be essential to use evaluation criteria for funds allocation that

are different from those used for research and development, which place importance on newness. This institutionalization is similar to the method of providing funds equaling a fixed percentage of research and development costs for research into ethical, legal, and social implications (ELSI), as with the United States' "21st Century Nanotechnology Research and Development Act". Autonomous institutions, such as the Science Council of Japan, universities, research centers, and NPOs are considered possible organizations for implementing such TA programs. The existence of organizations practicing diverse TA would be useful in presenting a wide range of viewpoints to the public through a variety of channels.

3.3 Institutionalization through the Initiatives of Individual Research and Development Organizations

Institutionalization through the bottom up initiatives of public and private research centers engaged in technological development is also possible. In this case, TA would be conducted in a form not necessarily relying on direct government financing. On the other hand, in these kinds of voluntary TA activities on the part of private organizations and technological development bodies, it is necessary to secure a degree of independence, which is needed to ensure a breadth of perspective that includes the interests of the general public. It is important to secure the autonomy of TA activities through such means as securing a fixed amount of funding from public agencies and acquiring diversified funding sources.

3.4 International Institutionalization

The institutionalization of TA can be carried out at the international as well as domestic level in Japan. For example, as the relative importance of research and development activities in China and the Asian region as a whole increases, the establishment of an Asian TA center as one part of building an Asian research region would be important in terms of Japan taking a leadership position in research and development activities.

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