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The Council for Science and Technology Policy has identified the reinforcement of international cooperation in science and technology as one of the crucial policy issues. The Council has further pointed out that the international contribution to work on environmental problems and related subjects is also an important issue for science and technology policy in terms of furthering innovation.

In the times ahead, Japan should take this new perspective of "science and technology diplomacy", a perspective that seeks to capitalize these areas in diplomacy. By doing so, and by reinforcing these activities, Japan should realize its position as an open country while seeking to contribute to innovation in the world. It is of particular importance that Japan makes use of its science and technology capabilities to the greatest extent in order to positively and continuously tackle worldwide issues involved in realizing a sustainable society. This will enhance Japan's "Soft Power" while also linking research cooperation and technology cooperation to foreign policy, all of which are important objectives.

Taking this conceptual approach, Japan's science and technology diplomacy should be augmented in the following directions:

1. The Current State of International Cooperation on Science and Technology

(1) Science and technology provide a foundation for the nation's existence. At the same time, they also hold the key to the realization of a sustainable society that all of humankind faces. It is a fact, however, as pointed out in the interim report on Innovation 25 strategy, that Japan's activities in science and technology have been lacking in the kind of strength required to contribute by delivering research results for the benefit of the world.

In order to do so, Japan must change its traditional mind-set, and place a new emphasis on making use of the country's superior strengths in science and technology to take the initiative in resolving worldwide issues that face the human race. Japan must determine how it should act as a leader among nations and put the

country's strength to work in the global community.

- (2) Academic exchange among researchers has also been widely practiced up to now, although it has not necessarily been exploited systematically nor advantageously as a part of national foreign policy. There is no question that joint research across national borders conducted on the basis of common interests among researchers should be encouraged. What is necessary, however, in research cooperation on the environment, water management, and infectious disease, and other activities addressing problems of that kind, is the strategic perspective.

2. Specific Issues to be Addressed

- (1) Strengthen Science and Technology Cooperation with Developing Countries, Particularly in Africa

Efforts should be made, using official development assistance (ODA), to create local mutual networks by developing the higher education and research institutions that will form the local bases for cooperation aimed at joint research and human resource development, and by providing research facilities and equipment. In conjunction with these efforts, an Overseas Science and Technology Cooperation Corps (provisional name) for the implementation of cooperation in developing countries will be founded, in order to coherently conduct advanced joint research and human resources development in the recipient countries. Such activities could conceivably include projects to address environmental, water, and infectious disease problems that are closely related to the maintenance of human life and health, economic development, and the preservation of ecosystems, particularly in Africa. It will be necessary to work out how to use ODA for such science and technology cooperation projects.

- (2) Disseminate and Demonstrate Japan's Superior Environmental Technology to the World

Japan will actively provide the fruits of its superior environmental technology to the developing countries according to their need. For example, satellite imagery from advanced earth observation satellites could be provided to China, India, and other countries in Asia, as well as to countries in Africa. Data from the Earth Simulator could be provided to forecast changes in climate and water conditions in regions around the world 100 years into the future. Support could also be provided for local demonstrations of Japan's world-class technology in such fields as the environment, energy, and water. This would be done with the participation of industry at the most suitable locations. In ways such as these, Japan can actively deliver its technology to the world.

- (3) Foster World Environmental Leaders

The government of Japan will take the initiative to make it possible for young people from Asia and other parts of the world to study Japan's environmental technology and policy. This will enable the young people to help realize environmentally harmonious economies and sustainable societies in their own countries and to take

action in the world. To this end, the government will take initiative in having the ministries and agencies concerned to cooperate with academia and industry inside and outside Japan to establish and implement programs to develop those environmental leaders. Such programs will include the acquisition of academic degrees as well as actual experience in laboratories and other research settings. Implementation should also take into account how these activities are to interface with existing student exchange programs and technical cooperation programs.

(4) Strengthen Cooperation in Advanced Science and Technology Fields

Research activities conducted at universities and public research institutions in Japan should be opened up to participants from overseas. Then science and technology cooperation can be actively promoted through partnership with the world's top intellectual leaders and other varied forms of diversity. Particular efforts should be made to actively open up advanced research facilities to overseas participation and joint utilization in order to facilitate the acceptance and dispatch of researchers and promote joint research.

Joint research and related activities should be promoted in such high-tech fields as nanotechnology and biotechnology through industry-academia collaboration beyond national borders.

(5) Reinforce Networks for Science and Technology Cooperation

The functionality of overseas diplomatic missions with regard to foreign policy for science and technology should be significantly strengthened, with a focus on the developing countries. This would involve activities by researchers and related personnel, the reinforcement of networks with partner countries, and so on. Active use should also be made of overseas centers belonging to universities and other research institutions.

3. Future Activities

(1) Steps should be taken to realize the above plans with an eye to the G8 Summit that will be held in Japan in 2008. Such action should also make reference to movements toward joint policy proposals by G8 academies. Opportunities of various kinds should be used as the occasion arises to present these plans to the world and work toward a consensus. In addition to the above plans, consideration should also be given to the establishment of research support programs for the realization of sustainable societies through multilateral cooperation.

(2) In order for the ministries concerned to act as one in addressing this endeavor, it will be necessary to establish a coordinating committee with members from those ministries concerned, including the Ministry of Foreign Affairs. The Council for Science and Technology Policy will provide follow-up on the matters studied by the committee of concerned ministries from time to time, and work to make the committee's policies and measures into concrete form.