

## **Summary of the 2<sup>nd</sup> International Symposium on Strategies for Regional and International Collaboration in Science and Technology**

### **1. Summary**

The 2<sup>nd</sup> International Symposium on Strategies for Regional and International Collaboration in Science and Technology was held at Soukairo-Hall at the National Graduate Institute of Policy Studies on the 16<sup>th</sup> of December, 2010. The meeting was held in order to introduce the challenges and importance of the East Asian Science & Innovation Area, which the Japanese government has been promoting, and various activities of entrepreneurs and social-entrepreneurs who have been working in Asian countries to create innovations for people. The symposium was co-organized by the Takeda Foundation, the Graduate Institute for Policy Studies (GRIPS), the Japan Science and Technology Agency (JST), the Japan International Cooperation Agency (JICA), and the Engineering Academy of Japan, and supported by the Ministry of Education, Culture, Sports, Science and Technology (MEXT), the Ministry of Economy, Trade and Industry (METI), the Cabinet Office, and the Ministry of Foreign Affairs (MOF).

### **Keynote Speech**

The keynote speech was given by Dr. Takashi Shiraishi, the Executive Member of CSTP. He explained the kinds of roles the East Asian Science & Innovation Area will be expected to play in the development of the East Asian Community. He described how the international presence of Japan will relatively decrease in terms of the number of researchers and the amount of investment in science and technology as the population of Japan decreases, and how once developing countries such as Singapore, China and Korea are becoming rivals or partners instead of followers as they rapidly increase the amount of investment in science and technology and expand their research and development activities. He also stated that the restriction of resources, such as environment and energy, water, and foods, will be a significant problem for Asian countries in the future, and Japan's experience and knowledge in these areas represent a high potential to produce business chances. He also stated that 10 or 20 years from now it will not be a

practical choice for Japan to conduct research by itself in fields where large-scale research facilities and equipment are required. He said that the East Asian Science & Innovation Area is expected to provide a common platform to which participating countries bring together their expertise and resources to tackle the above challenges and develop human resources, thus leading to innovation.

### **Panel Discussion 1 East Asian Science & Innovation Area: its Horizon and Hopes**

The first panel discussion, “East Asian Science & Innovation Area: its Horizon and Hopes” was moderated by Dr. Atsushi Sunami, Associate Professor of GRIPS. The panelists included Mr. Masaharu Nakagawa, a member of the House of Representatives from the Democratic Party of Japan and Chair of the Research Commission on Diplomacy and National Security, Mr. Koichi Kato, a member of the House of Representatives from the Liberal Democratic Party, Dr. Mitiko Go, External Executive Director of the Research Organization of Information and Systems, Mr. Yoshio Matsumi, Director of ITOCHU Research Institute of Innovative Technology, and Mr. Tateo Arimoto, Director General of the Research Institute of Science and Technology for Society, JST.

Mr. Nakagawa pointed out that there exists a sensitive problem of harmonization of competition and cooperation even in collaborative research between public institutions of two countries, and stated that in the areas of environment or life sciences, it is important to develop total approaches combining social sciences and technology, since it is necessary to incorporate systems for technological solutions into society as well as develop the technological solutions, and formulate rules that will enable the society to manage the technological solutions.

Mr. Kato recalled that Dr. Osamu Shimomura, an economic advisor to the LDP, said that there was a technology gap between Japan and the US, and that this technology gap pulled the Japanese economy. In the late 1990s, Japan was catching up with the US, and was experiencing low economic growth. Mr. Kato made an effort to establish the Basic Law for Science and Technology in 1997 in order to overcome the low economic growth at that time. He pointed out that Japan

is still suffering from problems derived from the loss of catchup targets, and said that Japan should rather become a country with the best scientific concepts rather than a country whose only strength is manufacturing industry.

Dr. Go took the example of the Biophysical Society of Japan, to which she belongs, and explained that the center of gravity in science is now moving toward Asia because the number of Asian members is now growing, both the quality and quantity of research results are increasing, and academic exchange is quite active in Asia. She thinks it is necessary to develop a society in which women scientists can play active roles in research activities of science and technology because the population of young Japanese men is decreasing, and the percentage of men among science majors is also decreasing. It is almost of waste of human resources if society does not use women with higher educations.

Mr. Matsumi stated that it is essential to achieve the following matters to promote integrated science diplomacy in Asia.

- 1) Developing young human resources with a high capacity for international collaboration
- 2) Strengthening human networks with Asian youths who can understand Japan and become friends with Japanese
- 3) Promoting science diplomacy in Asia through Japan-US cooperation
- 4) Building cooperative relations between the private sector and governments when promoting international cooperation in areas of social infrastructure and clean energy
- 5) Helping and nurturing ventures and small and medium size enterprises (SMEs) from the point of promoting innovation and entrepreneurship

Mr. Arimoto from JST pointed out that international collaboration by Japanese is like independently selling a unit item loose or by the piece, whether it is a scientific product or business activities. There is no systematic approach to international collaboration by Japanese. He stressed that it is essential to develop a conceptual power that enables the systemization of individual collaborative activities and build networks. He also stated that Japanese need the power to create new visions and concepts, and that discussions about the Asia Research Area will provide a great

opportunity to change the mindset of Japan.

### **Panel Discussion 2 Toward the co-creation of regional innovation in Asia**

The panelists included Mr. Tran Minh Quang, a graduate student of Shibaura Institute of Technology, Mr. Deven Arora, President of ICONASIA, Ltd., Ms. Chanuri Kahaduwaarachchi Perera, Director of the Global Business Development Division of A-Wing International Company, Ltd., Dr. Makoto Murase, Director of People for Rainwater, an NPO, and Mr. Katsuhiko Harada, a senior staff writer in the Economic Commentary Department, Editorial Bureau, of Nikkei Incorporated. The moderator was Professor Takashi Watanabe from the Shibaura Institute of Technology.

Mr. Quang pointed out that traffic jams can be a serious problem in developing countries as well as in developed countries. Monitoring systems with cameras have been used in developed countries, but they are expensive. Instead of camera monitoring systems, he proposes a new system for monitoring traffic jams using the cellular phones of drivers. In his system, traffic information is collected with the GPS function of each cellular phone and sent to a traffic control center where the collected information is processed, and fed back to drivers.

Mr. Arora pointed out that Japan's SMEs have very high levels of technology and expertise, but they have a problem with continuing their technologies to the next generation because of a lack of successors. He also pointed out that the technologies of Japan's SMEs have a high possibility of playing vital roles in Asia, especially in Thailand and India. He is hoping that he can help to transfer the technologies of Japan's SMEs to India.

Ms. Chanuri of A-Wing International explained that the majority of people who do not have access to electricity or to stable energy sources live in Asia, and environmentally friendly and sustainably available wind turbines can be an effective solution for the problem. A-Wing International follows four basic rules when introducing wind turbines into local communities.

- 1) Products and technologies should be simple and easy to handle.
- 2) They should be environmentally friendly.
- 3) They should pose no threat to the local culture.

4) Products should be able to be manufactured locally using local materials and local labor.

Dr. Murase explained that the majority of rainfall in Japan during the rainy season comes from India or the western Pacific area, and, ironically, those are areas where there is little access to drinking water. One of the major reasons for the lack of drinking water is that the local wells are contaminated with Arsenic from ground water. Dr. Murase has been promoting the use of rainwater stored in water tanks for drinking. He stressed that it is important to incorporate rainwater systems into local society in cooperation with local NPOs and the use of microcredit. One-sided aid does not work in a sustainable way.

The fifth speaker was Mr. Harada from Nikkei Shimbun. He described four cases of international cooperation and made the following comments: all four cases involved combinations of technology, knowledge, design and passion; all activities were border-less; they worked together with various partners including NGOs, governments, and private enterprises. He also introduced his experience on the study tour of social entrepreneurs in China and Korea, and stated that the activities of social entrepreneurs in both countries extend to areas of population, food, gender, disparities, education, and security, as well as economic and environmental issues.

## **Comments**

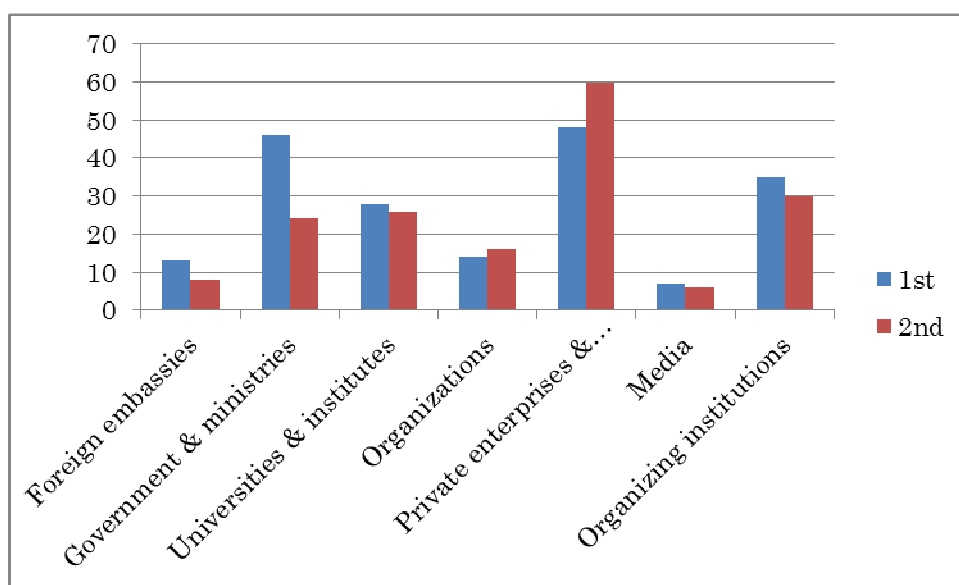
As a review of the symposium, Professor Kiyoshi Kurokawa of GRIPS, also a Council Member of the Takeda Foundation, made some comments. He stated that the past era dominated by the Cold War, the Japan-US Security Treaty, and the mass production of goods on the supply side, has ended. The world is now a one-market economy. Everybody is concerned with poverty, and consider BOP (bottom of pyramid, vast majority of low income layer) businesses. In this new era, it is impossible to know what local people want without living in local societies. Young people should go abroad and live in local communities. The parent generation should invest in their offspring and encourage them to go into the greater world.

## **2. Evaluation of the Symposium**

### **2.1 Participants**

The symposium participants included 24 officers from the government and relevant ministries (14.1%), 42 people from universities, research institutes and

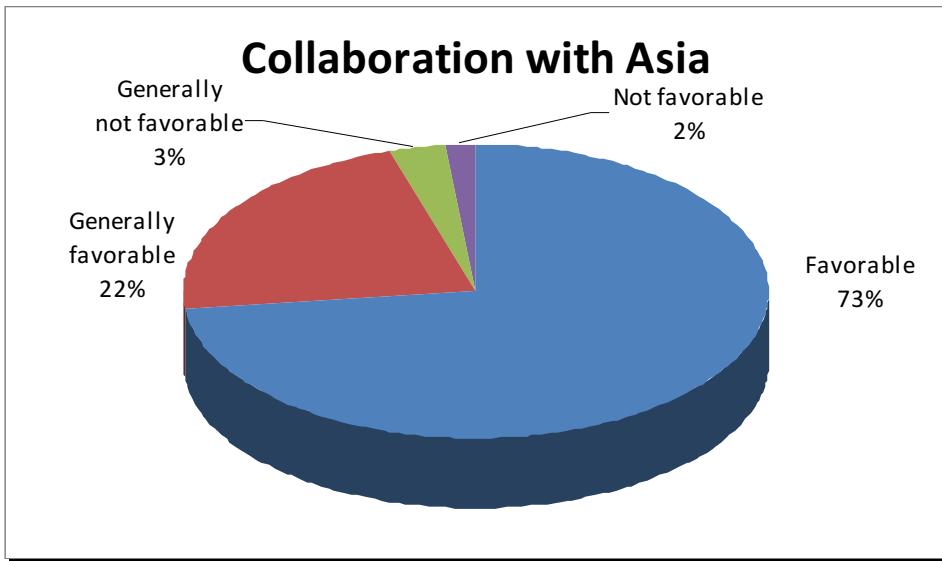
non-profits organizations (24.7%), 60 individuals and business people from private enterprises (35.3%), 8 officials from foreign embassies (4.7%), and 6 reporters from the media (3.5%). The total number of participants was 170 including 30 people from the organizing institutions. The total number of participants decreased by 21 as compared with the former symposium held last May, but the number of non-government participants increased both in number and ratio, which satisfies the original purpose of appealing to the general people of society.



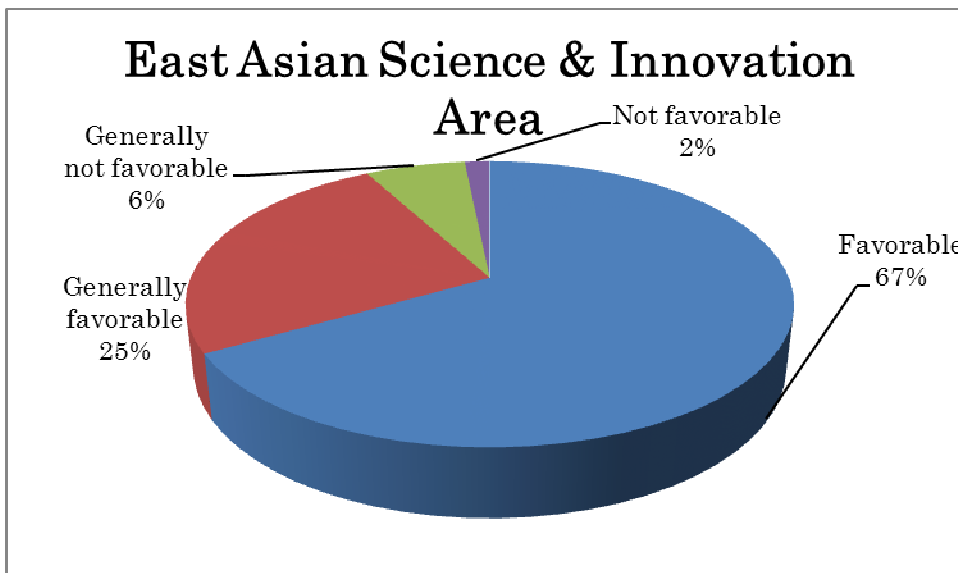
## 2.2 Results of questionnaire analysis

Questionnaires about the symposium were delivered to participants and 66 answered copies were collected, which accounts for 47% of participants excluding people from organizing institutions. The questionnaire asked participants if they agreed with a scientific collaboration with Asia as explained in the keynote speech by Dr. Shiraishi and discussed in Panel discussion 1, “East Asian Science & Innovation Area: its Horizon and Hopes”. Seventy-three percent of the respondents answered favorably, and 22 % generally favorably, indicating that 95 % of respondents felt more or less favorably about scientific collaboration with Asia. Comments from those who are against scientific collaboration with Asia included that Japan’s technological know-how would be stolen, and that there is a deep technological disparity between Japan and Asia, and Japan should not collaborate

with Asia but with the US and European countries.



Sixty-seven percent of the respondents answered favorable concerning the creation of the East Asian Science & Innovation Area, and 25% were generally favorable, resulting in 92 % of respondents being favorable concerning the creation of the Area.



Comments from those who are against the creation of the Area are as follows.

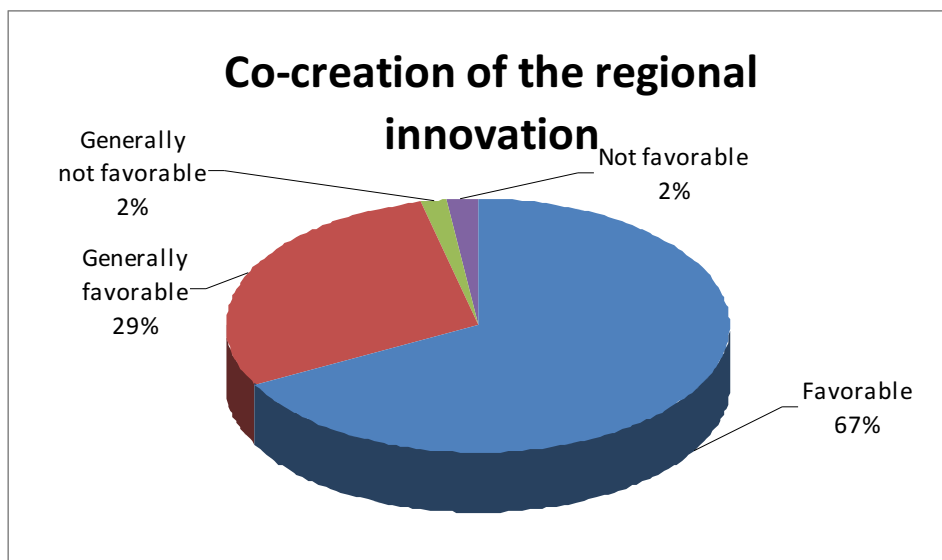
- 1) Japan does not have to offer its own technology, since Japan has been financially supporting developing countries.

- 2) Democracy is not well developed in Asia.
- 3) Japan should nurture diplomatic professionals before promoting scientific collaboration with Asia.

Most of the respondents felt favorably about collaboration with Asia and the creation of the Area, and the following are their comments.

- 1) Japan can not achieve economic growth without help from Asian human resources, because the population of Japan is decreasing.
- 2) Japan alone can not drive technological development in all areas.
- 3) Collaboration with Asia will strengthen Japan's presence in the international society.

As for the co-creation of regional innovation in Asia, 67 % of the respondents were favorable, and 29% were generally favorable, resulting that 96% of the respondents were more or less favorable.



As the analysis of the questionnaires shows, most of the respondents were favorable about collaboration with Asia and the creation of the East Asian Science & Innovation Area, and the purpose of the symposium to promote the importance of the collaboration with Asia to Japanese society has been largely achieved. However, the challenge of increasing the number of participants, especially young participants, remains for the next symposium.



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