# The 8th Conference of the Science Council of Asia (SCA)

# PROCEEDINGS

**May 28-30, 2008**
**Shangri-La Hotel, Qingdao, China**

**Organized by**
**China Association for Science and Technology (CAST)**
**Qingdao Association for Science and Technology (QDAST)**
**Science Council of Japan (SCJ)**

Proceedings of the Eighth Conference of SCA


Published by the Science Council of Japan
7-22-34, Roppongi, Minato-ku, Tokyo 106-8555
Japan

# Contents

# Chairperson’s Summary

# Chairperson's Summary

# The Eighth Conference of the Science Council of Asia (SCA)
# May 28 – 30, 2008
# Qingdao

## I. Organizational Matters

1. The 8th Conference of the Science Council of Asia (SCA) was convened by the China Association for Science and Technology (CAST), Qingdao Municipal People's Government and the Science Council of Japan (SCJ) at Shangri-La Hotel in Qingdao, China, from May 27 to 30, 2008, on the theme "Sustainable Development on Marine Resources and Environment." The conference was held in cooperation with the International Forum on Marine Science and Technology and Economic Development (IFMSTED) 2008 which was held during the same time at Fuxin Hotel in Qingdao. During the conference, two sessions of Management Board Meeting, two sessions of General Assembly and five SCA Joint Project Workshops, as well as the Special Session, "Pop Culture in Asia – Comparison of film Culture -" were held at Shangri-La Hotel. Only the Opening Ceremony was held at Fuxin Hotel in cooperation with IFMSTED 2008.

2. The conference was attended by ten member countries: China, Indonesia, Japan, Republic of Korea, Malaysia, Mongolia, the Philippines, Singapore, Thailand and Viet Nam. As an observer, a representative of the Pacific Science Association (PSA) participated in the conference.

3. The General Assembly and Management Board were chaired by Prof. Feng Changgen, Executive Secretary of the CAST, President of SCA (2007/2008).

## II. Proceedings of the Conference

### A. Management Board Meetings and General Assemblies [May 28, May 30]

4. The joint-statement for "Development" by NASAC (the Network of African Science Academies), IANAS (the InterAmerican Network of Academies of Sciences) and SCA to the G8 on the role of science, technology and innovation in promoting global development was distributed.

5. The 8th SCA Annual Report was approved.

6. Three new SCA Joint Projects were proposed and approved: "Open Data and Knowledge Environment for Innovative Research on Poverty Free and Ecosystem Protection in Asian (ODKE)" proposed by Prof. Liu Chuang (CAS) and Dr. Pakorn Apaphant (GISTDA, Thailand), "Sustainable Water Resources Management in Asia" proposed by Prof. Shinichiro Ohgaki (SCJ) and "Action Plans for Natural Disaster Mitigation" proposed by Prof. Kenji Satake (SCJ).

7. "Current Status of Korean Economy and Desirable Corporate Strategies" was presented by Dr. Dong Ki Kim, National Academy of Sciences (NAS), ROK.

8. Progress Report of "Professional Training Course and Research on Sustainability Science" was presented by Prof. Dr. Mazlin Bin Mokhtar and Dr. Ibrahim Komoo, Institute for Environment and Development (LESTARI), Malaysia.

9. Progress Report of "Space and Lithosphere Environment Changes in Indonesia" was presented by Prof. Kiyofumi Yumoto, Science Council of Japan (SCJ).

10. First Strategic Plan Proposal of the Science Council of Asia (From the End of the 2008 Conference until the 2011 Conference) was unanimously approved.

11. It was approved that Prof. Jisnuson Svasti, President, Science Society of Thailand under the Patronage of His Majesty the King (SST) replaced Prof. Montri Chulavatnatol, Vice President, Thai Academy of Science and Technology (TAST) as Management Board member.

12. New SCA officers were elected among the members of the Management Board. Prof. Hong Wang Jin, Deputy Director of the Agency for Science, Technology and Research (A*STAR), Singapore was elected as President and Prof. Jaime C. Montoya, President of the National Research Council of the Philippines (NRCP) was elected as Vice-President, Prof. Yoichi Muraoka, Member of the SCJ, was elected as Secretary-General / Treasurer.

13. Mr. Andrew Fun, the SCA and the Agency for Science, Technology and Research (A*STAR), Singapore, presented the draft plan of the 9th SCA Conference in Singapore

in 2009. The proposed theme is "Grooming Scientific Talent in Asia." The conference will be organized jointly by SCA and A*STAR from June 17 to 19, 2009.

14. It was confirmed that the Philippines would be the host country for the 10th SCA Conference in 2010 and Mongolia would be the host country for the 11th SCA Conference in 2011.

### B. SCA Joint Project Workshop [May 29]

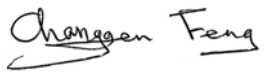
15. The SCA Joint Projects which are in progress; five projects, namely, "Gender," "Water," "Natural Hazards," "Ocean Security in Asia" and "Honeybees" concurrently held individual sessions during the morning and afternoon of May 29. The summaries of each session were reported at General Assembly II; Ms. Wati Hermawati from the LIPI gave a presentation on "Women, Small/Medium Scale Enterprises (SME) and ICT," Prof. Shinichiro Ohgaki from the SCJ gave a presentation on "Sustainable Water Resources Management in Asia," Prof. Kenji Satake from the SCJ gave a presentation on "Action Plans for Natural Disaster Mitigation," Prof. Naoya Okuwaki from the SCJ gave a presentation on "Environmental Security of Oceans in Asia," and Dr. Kiyoshi Kimura from the SCJ gave a presentation on "Development of Bee-keeping using Asian Honeybees."

### C. Special Session [May 29]

16. Special Session: "Pop Culture in Asia – Comparison of Film Culture –" was held in the afternoon of May 29. The summary of the session was also reported at General Assembly II by Prof. Shozo Fujii from the SCJ.

## Officers

**President**



**Feng Changgen (China/CAST)**

**Vice President/President-Elect**

**Hong Wang Jin (Singapore/A*STAR)**

**Immediate Past President**

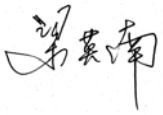
**Ichiro Kanazawa(Japan/SCJ)**

**Secretary General**

**Yoichi Muraoka**

## Member countries

**China**



**Liang Yingnan**

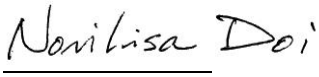
**India**

**(Absent)**

**Indonesia**

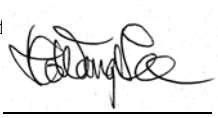
**Lukman Hakim**

**Japan**

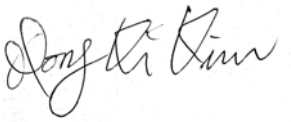


**Norihisa Doi**

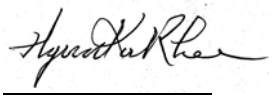
**Republic of Korea**



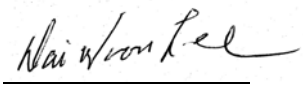
**Ho-Wang Lee**



**Dong Ki Kim**

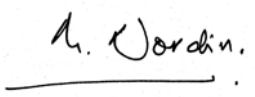


**Hyun-Ku Rhee**

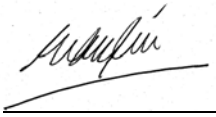


**Dai Woon Lee**

**Malaysia**



**Mohd Nordin Hasan**

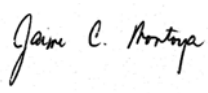


**Mazlin bin Mokhtar**

**Mongolia**

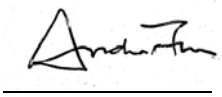
**Norov Altansukh**

**The Philippines**



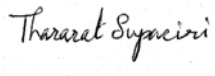
**Jaime C. Montoya**

**Singapore**



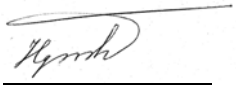
**Andrew Fun**

**Thailand**

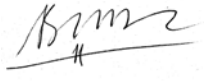


**Thararat Supasiri**

**Vietnam**



**Van Sinh Hoang**



**Thi Bao Hoa Trieu**

# Program

# 8th SCA Conference Program

| May.27(Tue.) | May.28(Wed.) | May.29(Thu.) | May.30(Fri.) |
|---|---|---|---|
| **8:00–**<br>**Registration**<br>[Shangri-La Hotel] | | | **8:30–8:55**<br>**Management Board Ⅱ**<br>**(MB Members only)**<br>[China Hall 1, Shangri-La Hotel] |
| | **9:00–9:30**<br>**Opening Ceremony**<br>[Fuxin Hotel] | **9:00–12:00**<br>**SCA Joint Project Workshop**<br>＊Natural Disasters (Function Room 32)<br>＊Water (Function Room 34)<br>＊Gender (Function Room 35)<br>＊Honey Bee (Function Room 37)<br>**Coffee Break (Function Room 33)**<br>[Shangri-La Hotel] | **9:00–10:30**<br>**General Assembly Ⅱ & Closing Ceremony**<br>＊Report of SCA Joint Project Workshops and Special Session<br>＊Approval of the 1st Strategic Plan of the SCA<br>＊New Officers and members of the MB<br>＊The 1st announcement of the 9th SCA Conference in Singapore<br>＊Reconfirmation of the future conferences<br>＊Closong Remarks (SCA President)<br>[China Hall 1, Shangri-La Hotel] |
| | **9:30–12:00**<br>**Major Topic Reports**<br>**(Keynote Speech)**<br>＊Prof. Masahide Kaeriyama<br>＊Dr. Masaru Kurihara<br>＊Dr. Robert Mrrison, Dr. Zhendi Wang<br>＊Prof. Pan Delu<br>[Fuxin Hotel] | ***9:30–11:45***<br>***Special Reports of the IFMSTED***<br>*[Fuxin Hotel]* | ***9:30–11:45***<br>***Special Reports of the IFMSTED***<br>*[Fuxin Hotel]* |
| | **12:00–14:00**<br>**Lunch Break**<br>[Shangri-La Hotel] | **12:00–14:00**<br>**Lunch Break**<br>[Shangri-La Hotel] | **12:00–14:00**<br>**Special Lunch hosted by CAST**<br>[Huiquan Dynasty Hotel] |
| | ***13:00–17:30***<br>***Special Reports of the IFMSTED***<br>*[Fuxin Hotel]* | | |
| | **14:00–15:15**<br>**Management Board Ⅰ**<br>**(MB Members only)**<br>[Ballroom 1, Shangri-La Hotel] | **14:00–17:00**<br>**SCA Joint Project Workshop**<br>＊Water (Function Room 34)<br>＊Ocean Security<br>(Function Room 32)<br>**Coffee Break (Function Room 33)**<br>[Shangri-La Hotel] | |
| | **15:00–**<br>**Coffee Break**<br>[Foyer, Shangri-La Hotel] | **14:00–17:00**<br>Pop Culture in Asia<br>– Comparison of Film Culture –<br>(Function Room 35)<br>**Coffee Break (Function Room 33)**<br>[Shangri-La Hotel] | |
| | **15:30–17:45**<br>**General Assembly Ⅰ**<br>＊Opening Remarks (SCA President)<br>＊Remarks (SCA Officers)<br>＊Approval of the Annual Report<br>＊Approval of New SCA Joint Projects (CAST, SCJ, SCJ)<br>＊Presentation (Dr. Dong Ki Kim, NAS, ROK)<br>＊Current status of SCA Joint Project (LESTARI, Malaysia)<br>＊Current status of SCA Joint Project (SCJ, Japan)<br>＊1st Strategic Plan Proposal of SCA<br>[Ballroom 1, Shangri-La Hotel] | ***13:00–17:30***<br>***Special Reports of the IFMSTED***<br>*[Fuxin Hotel]* | |
| **17:30–19:30**<br>**Dinner hosted by Prof. Zhou, CAS Academician**<br>**(MB members only)** | **19:00–20:30**<br>**Reception hosted by Qingdao Municipal People's Government**<br>[China Hall 1, Shangri-La Hotel] | **19:30–21:30**<br>**Reception hosted by SCA**<br>[Ballroom 1, Shangri-La Hotel] | |

# List of Participants

# List of Participants in the 8th SCA Conference

## *SCA Officers*

Note: * shows Management Board members.

**President**

**Prof. Feng Changgen ***
Executive Secretary, China Association for Science and Technology (CAST)

**Vice President/President-Elect**

**Prof. Hong Wang Jin***
Deputy Director, Agency for Science, Technology and Research (A*STAR)

**Immediate Past President**

**Prof. Ichiro Kanazawa ***
President, Science Council of Japan (SCJ)

**Secretary General/Treasurer**

**Prof. Yoichi Muraoka**
Member, Science Council of Japan (SCJ)

## *Member Organizations*

### 【Representatives】

**China**

**China Association for Science and Technology (CAST)**

**Mr. Liang Yingnan**
Deputy Director General, Department of International Affairs

**India**

**Indian Council of Social Science Research (ICSSR)**
None

**Indonesia**

**Indonesian Institute of Sciences (LIPI)**

**Prof. Lukman Hakim**
Vice Chairman

**Prof. Dr. Rochadi Abdulhadi**
Executive Secretary

**Ministry of National Education**
None

**Japan**

**Science Council of Japan (SCJ)**

**Prof. Norihisa Doi**
Vice President

**Prof. Reiko Kuroda**
Associate Member

**Prof. Masahide Kaeriyama**
Associate Member

**Republic of Korea**

**National Academy of Sciences (NAS)**

**Prof. Ho-Wang Lee** *
Member

**Dr. Dong Ki Kim**
Member

**Dr. Sang Dai Park**
Member

**Korean Academy of Science and Technology (KAST)**

**Prof. Hyun-Ku Rhee**
President

**Prof. Dai Woon Lee**
Vice president

**Prof. Geun Dea**
Head

**Prof. Tae Hyun**
Director

**Malaysia**

**Academy of Sciences Malaysia (ASM)**

**Prof. Mohd. Nordin Hasan** *
Fellow

**Ministry of Science, Technology and Innovation (MOSTI)**
None

**Institute for Environment and Development (LESTARI)**

**Prof. Dr. Mazlin Bin Mokhtar**
Director

**Dr. Ibrahim Komoo**
Vice Chancellor

**Mongolia**

**Mongolian Academy of Sciences (MAS)**

**Prof. Norov Altansukh ***
Vice President

**The Philippines**

**National Research Council of the Philippines (NRCP)**

**Dr. Jaime C. Montoya***
President

**Philippine Social Science Council (PSSC)**
None

**Philippine Association of Marine Science (PAMS)**
None

**Singapore**

**Agency for Sciences, Technology and Research (A*STAR)**

**Mr. Andrew Fun**
Head, International Relations

**Mr. Joshua Woo**
Manager, Corporate Communications

**Thailand**

**Thai Academy of Science and Technology (TAST)**
None

**Science Society of Thailand (SST)**

**Prof. Thararat Supasiri**
Vice President

**Vietnam**

**Ministry of Science and Technology (MOST)**

**Mr. Hoang Van Sinh**
Deputy Director, International Cooperation Department

**Mr. Thi Bao Hoa Trieu**
Member

**Mr. Nguyen Huu Cu.**
Head

**Ministry of Health (MOH)**
None

## *O b s e r v e r s*

## International, Regional or National Organizations

**Pacific Science Association (PSA)**

**Dr. Nancy Davis Lewis**
Secretary General

## *SCA Joint Project*

**China**

**Prof. Liu Chuang**
Professor, Chinese Academy of Sciences

**A/ Prof. Zhang Jian,**
Associate Professor, **China Women's University**

**Prof. Yang Luhui**
Professor, **Shandong University**

**Dr. Shi Fenglian**
Lecturer, **Shandong University**

**Prof. Wang Xiao Chang**
Professor, **Xi'an University of Architecture and Technology**

**Prof. Li Zifu**
Professor, **University of Science and Technology in Beijing**

**Prof. Wang Hanling**
Research Fellow/Professor, **Chinese Academy of Social Sciences**

**Prof. Xue Guifang**
Professor, **Ocean University of China**

**Prof. Tan Ken**
Professor, **Yunann Agricultural University**

## India

**Mr. John C. DeSilva**
President, **Center for Marine Conservation and Ocean Studies**

**Prof. Harsh Gupta**
Raja Ramanna Fellow, **National Geophysical Research Institute**

## Indonesia

**Ms. Sjamsiah Achmad**
Senior Advisor, Gender Equity in S & T, **Indonesian Institute of Sciences (LIPI)**

**Ms. Achie Sudiarti Luhulima**
Senior Advisor, Gender Equity in S & T, **Indonesian Institute of Sciences (LIPI)**

**Ms. Wati Hermawati**
Senior Researcher/ Program Coordinator, RESGEST, **Indonesian Institute of Sciences (LIPI)**

**Dr. Neni Sintawardani**
Head , Bureau for Cooperation and Promotion of Science & Technology, **Indonesian Institute of Sciences (LIPI)**

**Dr. Hery Harjono**
Deputy Chairman for Earth Science, **Indonesian Institute of Sciences (LIPI)**

**Prof. Tjandara Setiadi**
Professor, **Institute of Technology Bandung**

## Japan

**Science Council of Japan (SCJ)**

**Prof. Hiroko Hara**

**Prof. Takako Sodei**

**Prof. Yasuko Muramatsu**

**Prof. Matori Yamamoto**

**Dr. Kumiko Obino**

**Prof. Shinichiro Ohgaki**

**Prof. Tetsuya Kusuda**

**Prof. Naoyuki Funamizu**

**Prof. Kiwao Kadokami**

**A/Prof. Kensuke Fukushi**

**Prof. Kenji Satake**

**Prof. Hirokazu Iemura**

**Prof. Tadao Kuribayashi**

**Prof. Naoya Okuwaki**

**Prof. Atsuko Kanehara**

**Prof. Shigeki Sakamoto**

**Dr. Kiyoshi Kimura**

**Dr. Mikio Yoshiyama**

**Prof. Shozo Fujii**

**A/Prof. Mamie Misawa**

**Prof. Kiyofumi Yumoto**

**Prof. Shuichi Iwata**

**Republic of Korea**

**Dr. Lee Keun Gwan**
Associate Professor, **Seoul National University**

**Dr. Kim Yangsu**
Associate Professor, **Dongguk University**

**Malaysia**

**Dr. Tajul Anuar Bin Jamaluddin**
Associate Professor, **Universiti Kebangsaan Malaysia**

**Philippines**

**Prof. Carolyn Israel Sobritchea**
Professor, **University of the Philippines**

**Ms. Concepcion Garcia Ramilo**
Coordinator, **Association for Progressive Communications Women's Networking Support Programme**

**Singapore**

**Dr. Robert Charles Beckman**
Associate Professor, **National University of Singapore**

**Dr. Uganda Sze Pui Kwan**
Assistant Professor, **Nanyang Technological University**

**Sri Lanka**

**Dr. Ranjith Wasantha Kumara Punchihewa**
Senior Lecturer, **University of Ruhuna**

**Thailand**

**Dr. Chanpen Chanchao**
Assistant Professor, **Chulalongkorn University**

**Dr. Chavalit Ratanatamskul**

Associate Professor, **Chulalongkorn University**

**Dr. Chart Chiemchaisri**
Associate Professor, **Kasetsart University**

**U. S. A.**

**Dr. ChenYanping**
Research Entomologist,
**United States Department of Agriculture, Agricultural Research Service**

# CAST Secretariat

**China Association for Science and Technology (CAST)**

**Mr. Su Xiaojun**
Section chief
Department of International Affairs
**Mr. Qin Jiuyi**
Vice Section Chief
Department of International Affairs
**Ms. Yang Xi**
Program Manager
Department of International Affairs

# SCA Secretariat

**Science Council of Japan (SCJ)**

**Mr. Masatoshi Tsunaki**
Deputy Director-General

**Dr. Keiko Murata**
Director, International Affairs Division
**Mr. Yukihisa Kiho**
Counsellor, International Affairs Division
**Ms. Noriko Nakamura**
Deputy Director, International Affairs Division
**Mr. Hiroaki Hirata**
Section Chief, International Affairs Division

**Ms. Hisako Yoshida**
Section Chief, International Affairs Division
**Ms. Fusae Tamiya**
Staff, International Affairs Division
**Mr. Hideyuki Sakashita**
Staff, International Affairs Division
**Mr. Hiroyuki Iizuka**
Section Chief, Accounting Division

**Mr. Makoto Sayaki**
Section Chief, Accounting Division

# Opening Address
# by
# President of SCA

Opening Address

at

The 8th Conference of the Science Council of Asia (SCA)

Good afternoon, everyone.

First of all, on behalf of the organizer of the conference, China Association for Science and Technology, I'd like to extend my warmest welcome to you all to come to Qingdao, China. Since it is one of the most beautiful seashore cities which won the bid for the Olympic sailing competition, Qingdao owns its charm and attractiveness that impress people all over the world. I hope you can enjoy yourself here everyday.

I wish to express my deep gratitude to the secretariat of SCA, the Science Council of Japan, for their continuous contributions to SCA. Whenever a SCA activity carries on, SCJ always works industriously to push forward it. Their efforts help to propel SCA into a more fruitful future.

I also wish to give my sincere thanks to all the SCA member organizations for your endeavors in SCA activities. The SCA conference has been held successfully in 8 countries. The number of joint projects increased every year with wider range of scientific areas and more participation of experts from member organizations. We are glad to see that SCA is right on the track pursuing its goal: "sustainable development: a prosperous, harmonious, and greener Asia."

Finally, I hope that we will work together for three days to have extensive discussion and achieve our goals in the development of SCA and all of Asia. I wish we will have a successful three day meeting.

Prof. Feng Changgen

President, Science Council of Asia (SCA)

Executive Secretary, China Association for Science and Technology (CAST)

# Closing Remarks
# by
# President of SCA

Closing Remarks
at
The 8th Conference of the Science Council of Asia (SCA)
by
Mr. Liang Yingnan, on behalf of President of SCA

Ladies and gentlemen, it's time to close conference, not only the General Assembly but the whole 8th SCA conference as well. How time flies! It's memorable of these three days with you all. In my view, this has been an extraordinary conference, extraordinary in the sense of the complexity of the issued we have been discussing, extraordinary in the wide range of views that have been heard and expressed. I believe we have achieved a great deal. I wish to take this opportunity to express our heartfelt gratitude to all participants again. You raise a lot of meaningful suggestions toward the future of SCA and launch a number of joint projects that will be beneficial to all the people in the Asian. We shall not consider it a closing of a conference but a new start of SCA. I wish SCA will have a more and more brilliant future since the flight will be passed on from one country to another. It's time for Prof. Hong Wang Jin to give his remarks. Please.

Mr. Liang Yingnan
Deputy Director-General, Department of International Affairs,
China Association for Science and Technology (CAST)

# SCA Joint Project Workshop

**These papers are translated from the papers which originally contributed to the August issue of "SCJ Forum" published by the Japan Science Support Foundation.**

# Gender

## Women, Small/Medium Scale Enterprises (SME) and ICT Report

Hiroko Hara, Professor, Josai International University, Associate Member of the Science Council of Japan
Matori Yamamoto, Professor, Hosei University, Member of the Science Council of Japan

### Widely recognized need for ICT

The workshop was chaired by Professor Takako Sodei (Ochanomizu University, SCJ, Japan) and Ms. Sjamsiah Achmad (Indonesian Institute of Sciences, Indonesia), and was organized by Professor Hiroko Hara (Josai International University, SCJ, Japan), Professor Matori Yamamoto (Hosei University, SCJ, Japan). Before the workshop, a tribute was first paid to those who had lost their lives, and words of encouragement were offered to the other victims of the 2008 Sichuan Earthquake in May. It was also pointed out that women, children and the elderly are most vulnerable in disasters, and that the roles of women in the recovery process should be emphasized. ICT,* which is part of the theme for this workshop, plays a considerable role in preparing communities against the risk of disaster, and in putting the reconstruction of sustainable communities into practice.

First, Ms. Sjamsiah Achmad presented the history of the Gender Workshop, as it is commonly known, which is part of the Science Council of Asia (SCA) Joint Project that was officially approved at the 5th SCA Conference in Hanoi, Vietnam in 2005. Although the importance of the role played by ICT in overall development has been widely acknowledged, the question of how much ICT contributes to gender equality and the empowerment of women continues to be a challenge. In order to address challenges of this kind, the workshop was planned on the recognition that a new rights-based approach is needed in the areas of small and medium enterprises (SMEs) and ICT, employing gender and livelihood perspective. Ms. Concepcion (Chat) Garcia Ramilo (APCWNSP, Philippines), and Ms. Wati Hermawati (Indonesian Institute of Sciences, Indonesia) and Ms. Achie S. Luhulima (Indonesian Institute of Sciences, Indonesia) gave an overview of women ICT entrepreneurs in Asia, and made a report on specific case studies. For instance, female entrepreneurs operating weaving enterprises in rural areas of Bhutan have produced business plans utilizing ICT to develop and expand both domestic and international markets. Another example in Indonesia is a virtual shop that uses the Internet to sell flowers. Ms. Kumiko Obino (Interact Japan Inc., SCJ, Japan) has internationally expanded various activities utilizing ICT. She has conducted business by networking with staff scattered across all parts of the world, and has remained faithful to the concept of diversity that is free from age, race and gender discrimination.

Professor Zhang Jian (China Women's University, China) examined the impacts of ICT on the lives of Chinese women, and presented this as an interim report of her ongoing research studies.

Although Chinese women are using ICT almost as frequently as their male counterparts, female users are susceptible to the influence of the traditional image of women on the Internet. Professor Yang Luhui and Dr. Shi Fenglian (Shandong University, China) pointed out that, although there has been considerable progress in the participation of Chinese women in politics and the economy in recent years, there has instead been a sense of regression, and gender equality has not yet been fully realized.

**Resolving negative issues and promoting women's participation**

This workshop highlighted the fact that attention should also be paid to the negative impacts of ICT on the lives of women. Ms. Hermawati and Ms. Luhulima discussed the gender gap in the field of ICT in Indonesia. Ms. Garcia Ramilo reported on new gender gaps that are emerging in the areas of access, knowledge and training in Internet technologies. In her capacity as a commentator, Professor Carolyn I. Sobritchea (University of the Philippines, Philippines) identified the negative aspects of ICT, including human trafficking, prostitution and pornography, and pointed out that most of the victims are women and girls. She argued that measures to eliminate these negative aspects should be taken in collaboration with governments, the international community, the media and so forth. Professor Nancy Lewis (Pacific Science Association, USA) commented that sustained efforts for full gender equality are still needed in Asia. Professor Yasuko Muramatsu (Tokyo Woman's Christian University, SCJ, Japan) commented that the question of how to use ICT in realizing the ideas of gender and development is a challenge for us.

Thirty-five women and men from ten countries participated in the workshop, engaging in exciting and heated discussions from various viewpoints. In conclusion, the effective use of ICT would bring about the empowerment of women and success for new businesses, while contributing to the revitalization of NGOs and women's organizations. However, females, who account for the majority of the poor in Asia, are yet to enjoy equal access to ICT. ICT also negatively influence the lives of women, as in the perpetuation of gender stereotypes and human trafficking. Strong expectations for the Science Council of Asia were expressed regarding its role in resolving these issues and in promoting women's participation in science and technology in Asia.

A workshop "Grooming Scientific Talents in Asia - a Gender Perspective" (working title) is planned for the upcoming 9th SCA Conference to be held in Singapore.

* ICT: information and communication technology

# Water

## "Session for Sustainable Water Resources Management in Asia" Report

Shinichiro Ohgaki, Professor, The University of Tokyo, Member of the Science Council of Japan
Tetsuya Kusuda, Professor, The University of Kitakyushu, Associate Member of the Science Council of Japan

### Introduction

One of the new Science Council of Asia (SCA) Joint Projects officially approved at the 8th SCA Conference in Qingdao was "Sustainable Water Resources Management in Asia," which was proposed by the Science Council of Japan. This session was designed as a session for this new SCA Joint Project, and included the "Management of Sustainable Aquatic Environment" group, which had been active in this designated topic. There were a total of 11 presentations and discussions.

During the first five presentations, the impacts of climate change on water resources in Asia and the impacts of population concentration on urban areas were confirmed, and specific examples of the latest technologies and policies were introduced, including water reuse in urban areas and industrial wastewater treatment, which is particularly important in developing regions for the conservation of water resources.

The last six presentations of this session are the components that make up the designated topic "Management of Sustainable Aquatic Environment." Information useful for individual Asian countries was provided on safe drinking water supply systems, separated and decentralized sewage treatment systems, and water management in river basins.

### Presentation highlights

In "Water Resources Management under Climate Change and Urbanization," Prof. Shinichiro Ohgaki (The University of Tokyo, SCJ, Japan) first confirmed the natural and social vulnerabilities of water resources, before introducing views on adaptation measures for climate change, and wastewater reuse in Japan's agricultural water and municipal water.

In "Sustainable Urban Water Management in Developing Region," Dr. Kensuke Fukushi (The University of Tokyo, SCJ, Japan) introduced new technologies for wastewater treatment, such as membrane bioreactors, and he indicated the potential for building systems for the sustained coexistence of urban and rural areas, such as reusing sludge generated by wastewater treatment in developing countries as fertilizer and sources of energy, and reusing treated water as water for irrigation.

In "The Application of Biological Processes in Several Industrial Wastewater in Indonesia," Professor Tjandra Setiadi (Institut Teknologi Bandung, Indonesia) introduced the present state of the aquatic environment in Indonesia, and indicated that it is important to further disseminate the treatment of industrial wastewater. In particular, he pointed out the effectiveness of anaerobic

biodegradation processes for industrial wastewater, and he indicated the possibilities of producing energy using biogas.

In "Wastewater Treatment and Reuse by Submerged Membrane Bioreactor," Dr. Chavalit Ratanatamskul (Chulalongkorn University, Thailand) reported on the effectiveness of submerged membrane bioreactors for wastewater produced in the textile industry (uses less space, produces less sludge, and can achieve good quality treated water) and on the technical problems to be resolved. He also explained the possibilities for reusing industrial wastewater.

In "Natural and Advanced Treatment Systems for Wastewater Management at Municipal Solid Waste Disposal Sites in Developing Countries," Dr. Chart Chiemchaisri (Kasetsart University, Thailand) introduced his research of applying both a natural treatment system using constructed wetlands and a high-tech membrane bioreactor to the difficult-to-process leachate from municipal solid waste disposal plants. He also indicated the importance of selecting technologies suited to the specific area and of optimal operation management.

In "The Supply System of Safe Drinking Water Using Nanofiltration," Professor Kiwao Kadokami (The University of Kitakyushu, SCJ, Japan) pointed out that, by using nanofiltration membranes developed by him and his associates to filter raw water at a low pressure of about 0.4MPa, it is possible to supply drinking water that is both good-tasting and free from pathogenic microorganisms.

In "Low Cost Composting Toilets for Slum Areas in Asian Countries," Professor Naoyuki Funamizu (Hokkaido University, SCJ, Japan) introduced the composting toilet, which, under the "3 No" motto of no collecting, no mixing and no discarding, hygienically processes raw sewage and moreover recycles it as fertilizer. From studies of toilets set up in Changchun, Nanjing, Xi'an, it was shown that these toilets are practicable. However, it was also pointed out that heating is required in regions with low winter temperatures; and in some regions, systems for operational management will also need to be established, as the role of maintaining the toilets may be tasked entirely to the women of the house.

In "Development of Ecological Sanitation Projects in Urban Areas," Professor Li Zifu (University of Science and Technology Beijing, China) reported that separation toilets, which collect feces and urine separately, and which have been adopted in Germany and Sweden, were installed in the Beijing 2008 Olympic Village. A technique was adopted whereby, after collecting the feces and urine separately, the feces is dehydrated, composted and turned into fertilizer; the urine is turned directly into fertilizer; and other miscellaneous wastewater is reused following an aerobic sewage treatment that utilizes membranes.

In "Research Activities on Sustainable Sanitation in LIPI," Dr. Neni Sintawardani (Indonesian Institute of Sciences (LIPI), Indonesia) reported the results of surveying the reactions of students at an Islamic secondary school after installing integrated composting toilets that treat raw sewage. On the whole, the toilets were favorably received by the students, and this indicated that they could be

installed even in Islamic countries. However, instances were also reported of feelings of resistance being exhibited based on the common practice of washing with water.

In "Design of a District Water and Wastewater System under the Concepts of DESAR (Decentralized Sanitation and Reuse) and Water Metabolism," Professor Wang Xiaochang (Xi'an University of Architecture and Technology, China) expanded on the concept of decentralized sewage treatment and reuse, and explained the proposal for a sustainable district water system which: (a) allows for a separate collection system that can be installed in urban areas, (b) avoids the long-distance transfer of wastewater and treated water, (c) enables treated water to be reused close to where it originates, and (d) enables the supply of clean water, the collection and treatment of effluent, and the reuse of treated water. Wang also introduced plans to apply this system to a new urban area in Xi'an.

In "Difficulties in Integrated River Basin Management," Professor Tetsuya Kusuda (The University of Kitakyushu, SCJ, Japan) summarized the difficulties that must be overcome when attempting to manage events related to water in an integrated manner, including the securing of water resources in river basins, allocation, use and reuse, disaster damage prevention, ecosystem conservation, and scenery. Kusuda also proposed specific ways of dealing with these events. In developing countries, in almost all cases, maximizing revenue is set as a water management target for the development of river basins, and for this reason, agricultural water is often transferred to industrial water. It was pointed out therefore that, in addition to securing employment for the subsequently displaced farmers and education for retraining agricultural workers into factory workers, outlets to sell the manufactured industrial goods will inevitably need to be secured, and the food-sufficiency ratio to be maintained will need to be clarified. Further, given that international markets will be involved when the manufactured products are exported, since the issue of river basins extends to other countries, close attention will need to be paid when determining the scope of consideration.

**Recommendations from the session**

After hearing these presentations, at the end of the session, the recommendations of the session were decided. These recommendations were announced on the final day of the SCA conference, and the Joint Project made a request to the SCA member countries for comments on the recommendations from experts in each respective country.

Following are the recommendations that were drawn up in Qingdao.

(1) Recognizing the great impact of climate change and urbanization on aquatic environment and water resources in Asian countries, we have to design adaptation strategies in order to counter these impacts. To this end, the following action may be taken:

a. To develop flexible water systems

b. To develop flexible scientific based actions

c. To make a closer collaboration between climate, hydrology, and water researchers

d. To create regional/global databases of hydrologic variables

e. To find more effective transfer of knowledge and information

(2) Recognizing the current state of urban water resources in Asian countries, the following measures against urbanization may be taken:

a. To continue and intensify the acquisition of scientific knowledge and technological development

b. To establish better water governance through more sensible water allocation, more efficient water use, and demand management

c. To emphasize the development of novel approaches using leading technologies

d. To include protection policies for aquatic ecosystems and natural habitat

(3) We would like to recommend:

a. To develop technological measures against vulnerability (flood, drought, water pollution, eco-system) in water systems as well as institutional measures on Asian situations

b. To develop and strengthen collaboration between various academic fields and international institutions

c. To establish the network on sustainable environment and water resources management in Asia

Through the individual presentations and discussion, and through drawing up the recommendations of the session, this session has proven to be extremely worthwhile, with the latest information from each country on the present and future issues for water resources management in Asia being exchanged in a detailed yet broad manner. I would like to thank the presenters and all concerned for their cooperation. In particular, I would like to express my appreciation to Professor Naoyuki Funamizu of Hokkaido University, Associate Professor Kensuke Fukushi of the University of Tokyo, and researcher, Dr. Tran Viet Nga for their considerable assistance in the preparation and running of this session.

# Natural Disasters

## Workshop on Natural Disasters Report

Kenji Satake, Professor, The University of Tokyo, Associate Member of the Science Council of Japan

### A topic in which Japan should take leadership

Natural disasters are a common issue shared by every Asian country. The death toll in the cyclone that hit Myanmar on May 2-3 and in the earthquake that struck the Sichuan Province in China on May 12 each exceeded several tens of thousands. During the 8th Science Council of Asia (SCA) Conference, which was held in Qingdao, China, May 27-30, a proposal was put forward at the General Assembly on May 28 to renew the Joint Project on natural disasters. On May 29, a workshop on natural disasters was held, and the report on this workshop was made at the General Assembly on May 30. Furthermore, the statement released by the Japan Geoscience Union on May 28 on the cyclone in Myanmar and the earthquake in China was also presented.

At the 5th SCA Conference in 2005, which was held just after the 2004 Great Sumatra Earthquake and Indian Ocean Tsunami, a joint project on natural disasters was proposed and approved by the SCA. In the course of this joint project, an international symposium was held in December 2005, the discussions at this symposium were summarized and published in March 2006 in the SCA report entitled "Natural Hazard Reduction: Recommendations for International Collaboration," and this report was submitted at the 6th SCA Conference in 2006. Subsequently, at the 7th SCA Conference in 2007, a workshop was held (see SCJ Forum, September 2007), focused on "Policies for the Creation a Safe and Secure Society in the light of Increasing Natural Disasters around the World" (see SCJ Forum, November 2007) which had been discussed the previous year by the Special Task Committee on Disaster Mitigation under Global Changes of Natural and Social Environment in the Science Council of Japan.

Given that natural disasters are an important topic for which Japan should take leadership at the Science Council of Asia, during the 8th Conference, Action Plans for Natural Disaster Mitigation was proposed as a new joint project, and a workshop was held. During the workshop, topics were presented by five participants from Japan, India, Indonesia and Malaysia, and discussions were held, primarily on policy recommendations. In addition to the above countries, there were also participants from such countries as the Philippines, Mongolia and Vietnam, but unfortunately, there were no local participants from China as they were busy responding to the earthquake in Sichuan.

During the workshop, first, Dr. Hirokazu Iemura (Kinki Polytechnic College, Professor Emeritus at Kyoto University, SCJ, Japan) reported that he had conducted damage survey and questionnaire following the 2004 Great Sumatra Earthquake and Tsunami, and that his recommendations included the development of a tsunami warning system, coastal design for the prevention of tsunami damage, establishment of a center for research into tsunami disasters,

establishment of a museum or resource center on earthquakes and tsunami, establishment of memorial poles showing the heights of tsunami, and international collaboration. Dr. Iemura conveyed that many of these recommendations were already being implemented in Indonesia thanks to the cooperation provided by various countries of the world. Furthermore, he also made a number of general recommendations for mitigating the damage caused by earthquakes, including the development of a global-scale disaster monitoring system, the estimation and mapping of hazards and risks, and the acceptance of structural design standards based on required performance.

Professor Harsh Gupta (National Geophysical Research Institute, India) recommended the following as being necessary to mitigate the damage caused by earthquakes: introduction and enhancement of seismographs and GPS monitoring networks, establishment of damage projections and architectural standards, continuation and expansion of the Global Seismic Hazard Assessment Program (GSHAP) which was implemented during the 1990s, seismic retrofitting of houses, earthquake evacuation drills, and the adoption of tsunami warning systems. Professor Gupta also presented a number of successful examples, including research in India on reservoir triggered earthquakes, and cyclone warning and evacuation systems.

On the topic of building a society resilient to disasters, Dr. Hery Harjono (Indonesian Institute of Sciences) emphasized the importance of transferring scientific results to society, and his recommendations included: the promotion of research on natural disasters, informing scientific research results to policy makers, public education and community preparedness for disasters, appealing to private enterprises (insurance industry, etc.) for cooperation, and international collaboration. Dr. Harjono also reported that a tsunami warning system based on the Indonesian Meteorological and Geophysical Agency's seismic network will begin operating in November, and that community religious leaders play a significant role in disaster prevention education in local communities in Indonesia.

Dr. Tajul Anuar Bin Jamaluddin (Universiti Kebangsaan Malaysia) introduced Malaysia's policies and implementation programs for the mitigation of tsunami disasters, and listed a number of more general recommendations, including: the improvement of knowledge on geohazards (earthquakes, volcanic eruptions, landslides, etc.), the enhancement of disaster awareness and responsive capacity, coordination in various fields and at various levels, and preparedness. It used to be thought that natural disasters did not strike in Malaysia, but that perception changed with the 2004 Great Sumatra Earthquake. Dr. Jamaluddin described the efforts to propose and realize policies in response to this.

Finally, Professor Kenji Satake (Earthquake Research Institute, The University of Tokyo, SCJ, Japan) used real examples, such as the 2004 Asian Tsunami and the 2008 Sichuan Earthquake, to discuss the importance of: continuing and developing basic observation, investigation and research; interdisciplinary collaboration, such as between the fields of physical science, engineering, the humanities and social science;

international collaboration; the exchange of views between scientists and policymakers; and the publicizing of scientific results to the general public.

**Action plans for the reduction of earthquake and tsunami hazards**

Based on these presented topics and discussions, the following measures were given as action plans for mitigating earthquake and tsunami disasters in Asia:

1. Strive for the early detection of earthquake, tsunami warnings, and the early estimation of earthquake damage, through the establishment and maintenance of seismic and geodetic monitoring networks.
2. Assess future seismic hazards and risks, reflect these in damage scenarios, urban planning and damage mitigation, and promote earthquake insurance.
3. Establish the multilevel seismic performance required for structures (including the effects of long-period motion on high-rise buildings), introduce new earthquake standards based on this, foster social consensus for complying with these standards, and seismically retrofit any existing unqualified structures as quickly as possible.
4. In terms of preparation for disasters, conduct education and emergency drills for residents, enhance science education, clarify the division of roles and cooperation among national and local governments, communities and NGOs, and strengthen lines of communication between these relevant groups.
5. In terms of basic research, estimate long-term seismic probabilities based on the development of paleoseismology, conduct research for short-term predictions, and promote multidisciplinary and interdisciplinary research.
6. Further promote international collaboration and information exchange.

Participants will be assigned to write up the details for each of these measures, and these will be compiled prior to the 9th SCA Conference in 2009.

# Ocean security in Asia

## “Ocean security in Asia” Report

Tadao Kuribayashi, Professor Emeritus, Keio University, Associate Member of the Science Council of Japan
Naoya Okuwaki, Professor, The University of Tokyo, Associate Member of the Science Council of Japan

### Project purpose

The concept of “ocean security” as used in this workshop is not confined to “security” in its traditional sense. It also encompasses much broader issues, such as the sustainable use and conservation of ocean resources, the protection and conservation of the marine environment, the safety of ship navigation and associated support, the acquisition of the best marine scientific knowledge, the dissemination and promotion of marine education, and the prevention of piracy, maritime terrorism and other crimes on the sea, etc. Security in this sense aims to realize “good ocean governance” for the purposes, including such elements as sustainability and optimal use of the ocean, integrated and eco-system based ocean management and international cooperation measures. Through the adoption of the 200-mile exclusive economic zone (EEZ) system, the United Nations Convention on the Law of the Sea (UNCLOS), which took effect in 1994, overcame the former dualism of the high seas and territorial waters, and it established sovereign rights of coastal states and strengthened the exclusive jurisdiction with respect to vast waters, but, at the same time, it expanded and enhanced the responsibilities of coastal states with respect to their use of the ocean.

Establishing frameworks of international collaboration in every ocean related matter and problem area is essential for coastal states to fulfill these responsibilities in Asian seas. This is for a number of reasons. First, Asian seas have, geographically, a characteristic as a “semi-enclosed seas,” and, they have an extremely close connectiion and nity, including for living and other resources that are present; Notwithstanding, it is also the legal fact that they are divided articicially by maritime boundaries which make the Asian seas as the patchwork of jurisdictions of coastal states. Second, Asian seas are intimately connected with the lives of the people living on land territories of coastal states, and so the issues of conservation of marine resources and protection of marine environment directly affect the domestic governance of those states. Third, ensuring the safety of ship navigation has urgent importance, economically, politically and otherwise, for all coastal states, but such navigation may sometimes pose various risks to the states facing Asian seas, especially the coastal states. Fourth, in cases where a coastal state does not have sufficient capacity to enforce the law at sea, the safety of ship navigation is undermined by maritime crime conducted in coastal waters, which may cause significant risk for coastal and other states in conserving and protecting living resoureces and environment.

Based on a fundamental recognition of the above, the aim of this project is to promote international collaboration for the purpose of acknowledging Asian seas as "seas of peace and cooperation"; and as such, views have been continuously exchanged, primarily between researchers from various coastal states who specialize in the laws of the sea and in ocean policy. In particular, this project aims to create a shared awareness of the issues that are currently occurring in Asian seas, to discuss the direction in which the problems should be, or need to be, resolved, and for participants to return to their own countries with this information, and to link it to the creation of political will among the law-makers, government officials and peoples in the public.

As far as Japan is concerned, last year, the Basic Act on Oceans Policy was enacted, and based on this, the Basic Plan on Ocean Policy was formulated. The "comprehensive and general governance of the oceans," which cuts across various government branches and agencies, has been centrally incorporated into this plan. Further, it could be argued that, as a backstay for this governance, in order to achieve this in Asian seas, it will become increasingly more important to build systems of collaboration between researchers in the laws of the sea and in the ocean policies of Asian coastal states.

**Outcomes of the workshop in Qingdao**

The focus of workshop in this session was on the issue of "Building Cooperative Scheme for the Protection of Environment in Asian Seas." At the outset, there was an explanation by the chairman, Professor Tadao Kuribayashi (Keio University, SCJ, Japan), on the objectives of this workshop. This was followed in the first half by general discussion, and in the second half, by discussion on the progress of cooperative schemes in the Straits of Malacca and Singapore and in the South China Sea. First, Professor Atsuko Kanehara (Rikkyo University, SCJ, Japan) pointed to the recent change in the primacy of flag-state jurisdiction, and indicated the importance of moving forward with the building of cooperation schemes while cautiously ensuring their compatibility with the laws of the sea and the UNCLOS frameworks ("Environmental Protection of the Ocean and Flag-state Jurisdiction"). Next, Professor Hanling Wang (Chinese Academy of Social Sciences) presented a report that emphasizes the need for adopting an ecosystem-based approach to ocean management into international law ("Ecosystem-based Management of the Oceans and International Law"). Professor Keun-Gwan Lee (Seoul National University, Republic of Korea) provided comments on both reports, and stressed the need of replacing the principle of "freedom of the high seas" into the principle of "fair and equitable use of the high seas." During the second half of the workshop, to begin with, Professor Robert Beckman (National University of Singapore) illustrated the efforts achieved thusfar for environmental protection in the Straits of Malacca and Singapore, and described the construction of cooperative schemes between the littoral states and Japan, China and the Republic of Korea, in particular with regard to navigation support facilities ("International Cooperation to Enhance Environmental Protection in the Straits of Malacca and

Singapore"). Commenting on Professor Beckman's presentation, Professor Shigeki Sakamoto (Kobe University, SCJ, Japan) raised arguments regarding the details of the obligation for cooperation between littoral states and user states under the UNCLOS regime governing international straits. Next, Professor Guifang Xue (Ocean University of Qingdao) ("Environmental Challenge in Maritime Transport of the South China Sea") and Dr. John C. DeSilva (Centre for Marine Conservation and Ocean Studies, India) ("Conflict Management and Environmental Cooperation in the South China Sea") each reported on the environmental protection and navigational issues in the South China Sea. Their discussions included the importance of establishing cross-border points of view and the establishment of responsible shipping in the implementation of multilateral treaties on the marine environment. Finally, Professor Naoya Okuwaki (The University of Tokyo, SCJ, Japan) pulled together the above discussions. He suggested that, because problems of marine environment concern both the use of territorial waters and human activiteis on land (for example, land-based pollution, the issues of invasive species are caused mostly by importing of live marine products, and piracy (armed robbery at sea) has some important relations to the vulnerable public order of littoral states, etc.), when building marine-related cooperative schemes, we need to proceed with utmost caution to coordinate the maritime jurisdictions of coastal states with domestic jurisdictions as an integral part of the sovereignty of those states. At the same time, he evaluated the building of cooperative schemes in the Straits of Malacca and Singapore and in the South China Sea, and the consensus for conflict avoidance mechanisms as a first step in confidence-building that will enable cooperative schemes based on an integrated land-sea perspective.

**Looking to the future**

This project has provided an opportunity for experts in the law of the sea and ocean policy to exchange views and ideas on a regular basis for the purpose of establishing "ocean security in Asia" while focusing on the hot issues regarding the Asian seas. At first, Professor Kuribayashi strived singlehandedly, indicating that the activities of the Science Council of Asia also cover the fields of social science, and in particular, international law aspects. Then, at the 7$^{th}$ SCA Conference in Okinawa (2007) and the 8$^{th}$ SCA Conference in Qingdao (2008), we were able to secure a small number of participants from Japan and five participants from other Asian countries. Had the quota of foreign invitees been indicated a little earlier, we could have been able to invite more participants from other countries, such as Vietnam, Malaysia and the Philippines.

Advancing education and research in this field through exchange with young researchers in international and law of the sea wherever the workshop is being hosted is another objectives of this project. And so it is also unfortunate that we were unable to invite a few graduate students from the Ocean University of Qingdao due to the heightened security on account of the President of the Republic of Korea happening to be staying at the same hotel as the venue for our workshop.

# Honeybee

**"Utilizing honeybee genetic resources in Asia: Honeybee workshop" Report**

Kiyoshi Kimura, Senior Researcher, National Agriculture and Food Research Organization, Associate Member of the Science Council of Japan
Mikio Yoshiyama, Researcher, National Agriculture and Food Research Organization, Associate Member of the Science Council of Japan

**Background**

Apiculture not only provides an important sweetening agent in the way of honey, it also plays an important role of pollination. In the United States alone, pollination of agricultural produce by honeybees is estimated to be worth 14.6 billion dollars. Most crop production in the US is reliant on honeybee pollination, and so the phenomenon which occurred in 2006, where honeybee colonies suddenly disappeared (colony collapse disorder (CCD)), has nearly driven the US into a panic. Apart from just the agricultural sector, honeybees are also known as being the most important carriers of pollen in ecosystems. On the other hand, honeybees are exploited in foraging for nectar and pollinating crops, and the fact is that most honeybees are under a lot of stress. For this reason, it is purported that, if production systems are continued as they are, then disease will cause honeybee colonies to decline by 35% worldwide. Therefore, conquering bee diseases is an issue of the highest order that needs to be resolved, not only for apiculture, but also for world agriculture.

Based on this importance, honeybees were selected to be the subject of a genome project, and their entire base sequence was decoded in 2005. Honeybees were the third insect to be decoded, behind fruit fly and the malaria mosquito, and the project truly demonstrates just how important honeybees are. This complete base sequence has given honeybee researchers an invaluable tool. Understanding the resistance gene cluster is particularly crucial in conquering a disease, and so this tool has enabled a large number of gene sequences to be defined relatively simply.

*Apis cerana* (Asian honeybee) can be found in various parts of Asia. Compared to *Apis mellifera* (European honeybee), which is commonly used in beekeeping, the ability of *Apis cerana* to produce honey is by no means as great, but it does have many advantages. In particular, *Apis cerana* is resistant to a number of diseases, and compared to *Apis mellifera*, it is gentler and hardly ever causes sting injuries. On account of these characteristics, there has long been a desire to transfer the useful traits of *Apis cerana* to *Apis mellifera*, and even now, *Apis cerana* is highly valued as a genetic resource of the future. Unfortunately, though, these two species are reproductively isolated, and there has been little light shed on the genetic background for controlling these traits. Nevertheless, the genome project has made gene expression analysis for *Apis mellifera* easier, and using that information, gene expression analysis for *Apis cerana* is now also possible. Using the traits of *Apis*

*cerana* to improve *Apis mellifera* has also moved from the realm of impossibility.

**Project purpose**

A number of groups have begun analyzing *Apis cerana* genes using the genetic information of *Apis mellifera*. However each of the groups is independent, and their objectives are not necessarily the same. Thus, our plan was for each of the groups to collaborate, to assign the research, and to conduct expression analyses of *Apis cerana* in a comprehensive manner. The ultimate objective is to share the information that is derived and to build an effective database. In order to achieve this objective, we applied for honeybee research to become an SCA Joint Project, and it was officially approved as one at the 7th SCA Conference in Okinawa, Japan in 2007.

**Workshop report**

This session was the first opportunity to hold a workshop since participating in the joint project. As such, we took the opportunity to summarize the current problems concerning *Apis mellifera*, to have respective experts make presentations on the differences between *Apis cerana* and *Apis mellifera* and on the advantages of *Apis cerana*, and to share a common understanding.

1. Dr. Kiyoshi Kimura (National Agriculture and Food Research Organization, SCJ, Japan) presented a summary of the joint project. In particular, he emphasized how important the cooperation between Asian countries is for promoting the project.

2. Dr. Ranjith Wasantha Kumara Punchihewa (University of Ruhuna, Sri Lanka) summarized the merits of *Apis cerana*. In particular, he explained how profitable beekeeping is for farmers in developing countries like Sri Lanka as a means of earning a secondary cash income. He also outlined the advantages of *Apis cerana* over *Apis mellifera*. Further, he introduced an inexpensive system for breeding *Apis cerana*.

3. Dr. Chen Yanping (United States Department of Agriculture, Agricultural Research Service, USA), a specialist in insect viruses, summarized the viral diseases of *Apis mellifera*. In particular, she talked about the infection routes of these diseases based on her own empirical data. She also reported on the current state of research into the causes of CCD, a disorder which is currently affecting the US.

4. Dr. Mikio Yoshiyama (National Agriculture and Food Research Organization, SCJ, Japan) reviewed the innate immunity system of honeybees. In particular, he talked in detail about immune mechanisms and bacterial infections.

5. Prof. Tan Ken (Yunnan Agricultural University, China) used two examples to talk about differences between *Apis cerana* and *Apis mellifera*. The first distinction is that the sensitivity of the two species to the pheromone secreted by a queen is dramatically

different. The other distinction concerns the variation in the defensive behavior toward hornets, a natural enemy of the honeybee. These differences between the species can be seen in various traits, and Tan confirmed the need to properly put this information into database form.

6. Dr. Chanpen Chanchao (Chulalongkorn University, Thailand) summarized apicultural produce such as honey, royal jelly, propolis and bee venoms. She emphasized that the constituents of these products vary greatly among honeybee species.

## Conclusion

Apiculture is by no means large among agricultural industries. However, it is an industry that has the potential to generate significant profits without massive investments of land or capital. On the other hand, for poor people, it is an industry that allows them to earn a valuable secondary income with almost no initial investment. Furthermore, as mentioned earlier, honeybees have an extremely important part to play as pollinators in ecosystems. We believe that this joint project will aid in the further development of these kinds of honeybee industries in Asia. Moreover, there are many countries that are not equipped to conduct genetic research. Our hope is that by implementing this joint project, it will help in gaining further financial support.

# Special Session

# Pop Culture in Asia
# - Comparison of Film Culture -

## SCA Special Session － Pop Culture in Asia－

Shozo Fujii, Professor, The University of Tokyo, Member of the Science Council of Japan

**“Comparison of Film Culture”: An unprecedented trial in cultural studies**

Eight years have passed since the Science Council of Asia (SCA) was established at the proposal of the Science Council of Japan for the promotion of collaborative academic research in Asia. Ever since the First Conference in Thailand in 2001, conferences have been held every year with member countries taking it in turn to host them. Last year’s conference was held in Japan, this year in China, and next year’s Ninth Conference will be held in Singapore.

At previous conferences, joint project workshops have been conducted on such topics as water, gender, ocean security, natural disasters and honeybees. At this Eighth Conference, a workshop entitled “Pop Culture in Asia - Comparison of Film Culture” (hereinafter “Comparison of Film Culture”) was held as a special session. If we exclude the “gender” workshop, this has been the first trial workshop in cultural studies.

In Asia at present, a diverse range of pop culture from different countries has become incredibly popular beyond their respective national boundaries, including Indian films, Korean television dramas, Chinese martial arts (great swordsmen) novels and Japanese anime. This has played an important role in fellow Asians understanding each other. This kind of emotional interaction between Asians would be an important research topic for the SCA. Based on this belief I planned a new workshop with the support of Section I of SCJ and with the understanding of the Subcommittee on SCA in SCJ.

Due to budgetary constraints, the subject of the research was narrowed down to films, and restricted to the three host countries of last year’s, this year’s and next year’s SCA Conferences. A researcher from Korea with a strong interest in films produced in each of these three countries kindly assumed the role of commentator.

Then, with the cooperation of Dr. Mamie Misawa (Nihon University, SCJ, Japan), who wields a ready pen in writing film reviews under the pseudonym “Konayuki Mamire” as a leading Japanese researcher on the history of films produced in Chinese-speaking countries, the following workshop was planned and implemented for the Eighth SCA Conference.

Chairperson: Dr. Mamie Misawa

Presenters and titles

(a) Mr. Wang Zhongyi (Chief Editor, “People China,” Beijing, China)

“Japanese films in China”

(b) Dr. Uganda Kwan (Assistant Professor, Division of Chinese, Nanyang Technological University, Singapore)

"Chinese films in Singapore"

(c)Prof. Shozo Fujii (The University of Tokyo, SCJ, Japan)

"Singaporean films in Japan"

Commentator:

Dr. Kim Yangsu (Associate Professor, Dongguk University, Republic of Korea)

(The report and paper are in Chinese, and the discussion is in Chinese and English.)

Mr. Wang is a leading Chinese researcher on Japanese films. Drawing from his own experiences from his boyhood days, Mr. Wang traced the history of the reception of Japanese films in the People's Republic of China from both a production aspect and a social aspect. He then analyzed the changes of the image of Japanese people in Chinese films, before concluding with a talk on the trend of Chinese-Japanese coproduced films. However, the paper was read by the chairperson, as Mr. Wang had put off participating at the conference in Qingdao in order to lead a special media service on the Great Sichuan Earthquake as the chief editor of People China.

Dr. Kwan raised the issue of using the concept of nation in the categorization of films. She suggested that Singaporean films cannot be discussed without touching on their relationship with Hong Kong films, and she discussed the connection between the search for identity and the orientation towards internationalization for both.

Professor Fujii first talked about the reproduction process of Singaporean films during the 1990s, before reporting on the energetic style of directors Eric Khoo and Jack Neo in the Japanese media and at film festivals. While referring to the "family issues" in Singaporean novels, Professor Fujii considered the point that, in Singapore, where one-party control has continued for more than 40 years since its independence in 1965, movies have portrayed ailing families as a metaphor for the state.

Dr. Kim raised questions from the Korean perspective with regard to the three presentations, namely the report by a China researcher on the acceptance of Japanese films in China, the report by a Singaporean researcher on the acceptance of Chinese and Hong Kong films in Singapore, and the report by a Japanese researcher on the acceptance of Singaporean films in Japan.

Finally Dr. Misawa summarized, stating: "The three reports have depicted a China → Singapore → Japan → China circle of border-crossing and acceptance of films. This has painted us an exceptionally concrete image of the long historical background to the reciprocal traffic of popular culture in Asia, and of just how profoundly each other's societies have been influenced … More in-depth discussions are needed on 'Pop Culture in Asia' as a truly contemporary issue."

**Desire for the Special Session to be continued at the next conference**

As I have also indicated in the annex to this issue, "Impressions of the Eighth Science Council of Asia Conference," it had been planned that 20 Chinese literature and Japanese language graduate

students from the local Ocean University of Qingdao would participate in this “Comparison of Film Culture” workshop, but instead, we were compelled to cancel their participation on account of the excessive security by the Qingdao Municipal People’s Government.

Even so, Dr. Kwan expressed an extremely strong enthusiasm for this workshop to be continued at the Ninth Conference in Singapore next year, and proposed a workshop or symposium at which local students and residents could participate, based on a joint project with two local universities, the Nanyang Technological University and the National University of Singapore. All participants at this workshop (excluding Dr. Kim, Dr. Kwan, Dr. Misawa and Professor Fujii, there were two general participants who remained until the end of the workshop, the SCA members from Korea and Singapore) strongly approved this proposal, and the Special Session was closed.

# First Strategic Plan of SCA

First Strategic Plan of the Science Council of Asia
(From the End of the 2008 Conference until the 2011 Conference)
30th MAY 2008

Based on the Seventh Science Council of Asia Conference's Joint Statement, The Future of the SCA (hereafter "Future of the SCA"), the SCA shall establish a strategic plan for the SCA activity, as described below, for the three years from the end of the 2008 Conference until the 2011 Conference (hereafter "Duration of the First Strategic Plan") to more effectively achieve the purposes in I below.

I Objectives of the SCA (according to 2. of the Statutes of the Science Council of Asia)

1 To provide scientists in all fields, including cultural and social as well as natural sciences and technology, a collaborative platform for promoting scientific exchange and cooperation in Asia for the improvement of human society.

2 To develop and promote a holistic vision by integrating the emerging advances in science and technology with Asian wisdom, values and heritage, focusing on sustainable development and improvement in quality of life.

II Initiatives to Date

Following the First Conference of the Science Council of Asia, held in Bangkok, Thailand in 2001 under the theme of "Urgent Agenda for Asian Sustainability through Science and Technology," there have been a total of eight conferences up to the conference in May 2008 in Qingdao, China on the theme of "Sustainable Development on Marine Resources and Environment." In line with the objectives in the aforementioned I, beneficial discussion and recommendations from a scientific standpoint have been offered on various important issues encompassing Asia. In addition, member organizations have collaborated to launch a large number of joint research projects.

Among them, "Sustainability Science in Asia" issued its final report in June 2005. The projects "A Comparative Study of the Research Conditions of Women Scientists and the Present States of Women's/Gender Studies' in Asian Countries Towards the Sustainable Development," as well as "Recommendation for International Collaboration on Natural Hazard Reduction" each issued interim reports in March 2006. These reports presented highly useful recommendations not only for member organizations, but also for Asia and in turn, the world.

At the Seventh Conference held in Okinawa, Japan in June 2007, two joint statements were adopted on the themes of “Energy and Environment” and “The Future of the SCA.” As part of the “Concrete Action for the Future of the SCA,” the latter states, “We adopt a three-year strategic plan for the SCA activity and aim to resolve at the Eighth Conference in China next year.”

## III Principles of Activity for the Duration of the First Strategic Plan

During the Duration of the First Strategic Plan and based on the initiatives undertaken to date in the aforementioned II, the SCA fully recognizes the increasing gravity of a variety of major issues that encompass our world today, including climate change, energy, poverty and infectious diseases. We shall actively develop our activities in order to fulfill our role as an international scientific society representing Asia, selecting for targeted examination pressing issues in Asia that are closely connected to these global issues and offering befitting intellectual integration as well as intellectual recommendations.

## IV Main Activities for the Duration of the First Strategic Plan

Based on I to III above, the main activities of the SCA for the Duration of the First Strategic Plan shall be as follows.

1 Holding of conferences and other meetings, etc.

(1) Conferences shall be held in Singapore in 2009, in the Philippines in 2010, and in Mongolia in 2011.

(2) At each conference, the host country shall take the lead in striving for adoption of a joint statement of the SCA based on the theme of the conference.

2 Further Promotion of Joint Research Projects

(1) Based on “The Future of the SCA,” we shall continue to actively launch new joint research projects on themes that are urgent issues in Asian countries, namely energy, climate change, innovation, information, agriculture, food, natural disasters, biodiversity, and the functional enhancement of member organizations in Asia. The Management Board shall lead selection of new joint research projects, with one or two themes adopted annually by a resolution of the General Assembly based on “The Future of the SCA.” Reports shall be provided to persons affiliated with governments and academia, the media and other relevant parties of each country.

(2) Based on "The Future of the SCA," new joint research projects in (1) above shall make reports every two years to the General Assembly, and other ongoing projects shall in principle make reports annually to the General Assembly.

(3) In principle, new joint research projects in (1) above as well as ongoing research projects in (2) above shall submit a final report and conclude the project within three years of the project launch.

3 Recommendations on Activity Results to Policy Decision Makers in Each Country

Member organizations shall endeavor to make appropriate reports and recommendations on SCA results during the Duration of the First Strategic Plan to the policy decision makers of each country.

4 Examination of New SCA Framework

The 2011 Conference will mark the 11th Conference since the inception of the SCA. Each member country will have hosted one Conference and the Duration of the First Strategic Plan will come to a close, representing a juncture for the current organization and its governance as per its financial foundation and other matters. Following the 2011 Conference, however, expectations of the SCA and its role will only grow. To satisfactorily meet these expectations as an international scientific organization representing Asia, reinforcement and reform of our organization and framework, including our financial foundation will be essential.

Therefore, we shall begin examination of the new framework necessary for the SCA to achieve further development. We shall reach an agreement at the 2011 Conference, if possible. In order to conduct this examination, the SCA shall establish the "New Framework Examination Committee" (tentative name) in 2008 under the Management Board, according to 9. (1) of the Statutes of the SCA. Furthermore, this committee shall also examine ways to use economic assistance from public and private institutions, based on "The Future of the SCA."

5 Enhanced International Collaboration

The SCA shall strive to establish various cooperative frameworks with other international organizations, including the ICSU Regional Office for Asia and the Pacific.

6 Review of the First Strategic Plan

Results of the First Strategic Plan shall be announced at the 2010 Conference and the status of progress and other issues shall be discussed.

## V Division of Roles for the Duration of the First Strategic Plan

For the SCA to efficiently and effectively conduct the activities listed in IV above, each organization shall sufficiently fulfill the roles described below in coordination with the Secretariat.

### 1 Roles of the Chairing Country (Host country of the next conference)

Take responsibility in preparing appropriate theme proposals, program proposals and statement proposals for the conference.

### 2 Roles of the Committee under the Managing Board

The New Framework Examination Committee shall compile its examination results before the end of 2009. The committee shall submit a report to the Management Board. The committee shall also take responsibility in collecting the relevant information and ensuring its provision to member organizations.

### 3 Roles of the Management Board

The Management Board shall receive report from the committee on their examination results mentioned in 2 above and promptly create a Management Board proposal. The Management Board shall submit a resolution at the 2010 Conference for the new framework and aim to reach a determination on these resolutions at the 2011 Conference.

### 4 Roles of Member Organizations Other than 1-3 Above

Member organizations other than those included in 1-3 above shall reconfirm the objectives of the SCA and actively undertake activities positively based on the First Strategic Plan.

# The Eighth Annual Report

# The Eighth Annual Report
# from the SCA (Science Council of Asia) Management Board

May 28, 2008

According to Item 3 of Article 8 of the SCA Statutes, the Management Board submits an annual report on SCA. This eighth Annual Report covers the period between June 14, 2007 (opening day of the 7th SCA Conference in Okinawa) and May 26, 2008.

1. The outlines of the 7th SCA Conference were as follows;

1) Date/Venue: June 14-16, 2007, Okinawa Convention Center, Okinawa, Japan
Organized by: Science Council of Japan (SCJ)
* The SCA/PSA Joint Symposium was organized by the Science Council of Asia (SCA), the Pacific Science Association (PSA) and the Japan Science and Technology (JST) on June 16, 2007.

Main theme: "Energy and Environment"
Participants: About 550 participants including the General Assembly of SCA, Work shops of the SCA Joint Project and the SCA/PSA Joint Symposium from 9 member countries (India and Mongolia were absent) and 5 major international, regional and national scientific organizations as observers

2) On June 14, at General Assembly I, three new SCA Joint Projects listed below were proposed and approved.
i "Genomics-based Comparative Analyses of Gene Expression of Wild Asian Honeybees for Improving European Domestic Honeybees" proposed by Dr. Kiyoshi Kimura, National Agriculture and Food Research Organization, Japan
ii "Space and Lithosphere Environment changes for Asia" Proposed by Prof. Kiyofumi Yumoto, Kyushu University, Japan
iii "Institutional Design of Global Information Commons for Asia" proposed by Prof. Shuichi Iwata, The University of Tokyo, Japan

3) On June 14, at General Assembly I, Prof. Mazlin Bin Mokhtar from the Institute for Environment and Development (LESTARI), Malaysia, gave a presentation of

currently progress on "Sustainability Science for Sustainability Governance: A Study on Science – Governance Symbioses."

4) On June 15, four SCA Joint Project Workshops were held as follows;

i A Comparative Study of the Research Conditions of Women Scientists, Gender Issues in S & T, and the Present Conditions of Women's/Gender Studies in Asian Countries Towards the Human Centered Sustainable Development

ii Management of Sustainable Aquatic Environment

iii Natural Disasters

iv Security of Ocean in Asia

5) On June 15, the 7th SCA Conference Joint Statements on "Energy and Environment" and "the Future of the SCA" were unanimously adopted.

6) On June 16, the SCA/PSA Joint Symposium was held under the theme "Energy and Environment."

At the Opening Ceremony of SCA/PSA Joint Symposium, special address was delivered by His Imperial Highness Prince Akishino.

Following the special address, two keynote speeches were given by Dr. Rajendra Pachauri, Chairman of the Intergovernmental Panel on Climate Changes (IPCC) – "The Challenge of Climate Change : Dealing with Energy and Environment Policy", and Prof. Leo Tan, President of the Singapore National Academy of Science – "The environment: A global snapshot of some issue with perspectives from Singapore".

Following the keynote speeches, three panel discussion sessions were held as follows;

i Panel Discussion Session A: on "Energy and Environment"

ii Panel Discussion Session B: on "Education and Environment"

iii Panel Discussion Session C: on "Water Resources"

2. Activities after the 7th SCA Conference were as follows;

1) On behalf of Dr. Kiyoshi Kurokawa, the former President of the SCJ and the member of Committee of Peers for RCEs, Dr. Fumiko Kasuga, a member of the SCJ attended the Ubuntu Committee of Peers for RCEs on August 6, 2007. She also attended the International RCE Conference 2007 on August 7, 2007. Both were held in Penang, Malaysia.

2) In January 2008, Prof. Yoichi Muraoka, a member of the SCJ, Secretary General / Treasurer of the SCA has succeeded Dr. Kiyoshi Kurokawa, the former President of SCJ as a member of Ubuntu Committee of Peers for RCEs.

3) In March 2008, the Proceedings of the 7th SCA Conference were printed and distributed to the SCA member organizations.

4) In March 2008, two reports on Gender Workshops were printed.

i SCA Joint Project Workshop (Gender): A Comparative Study of the Research Conditions of Women Scientists, Gender Issues in S & T, and the present Conditions of Women's/Gender Studies in Asian Countries towards Human Centered Sustainable Development – Focused on Gender and Sustainable Development – April 17, 2006, New Delhi, India

ii SCA Joint Project Workshop (Gender): A Comparative Study of the Research Conditions of Women Scientists, Gender Issues in S & T, and the present Conditions of Women's/Gender Studies in Asian Countries towards Human Centered Sustainable Development – Focused on Academic Pursuit and Family Life – June 15, 2007, Okinawa, Japan

5) Preparatory meetings for the 8th SCA Conference were held as follows;

i Preparatory meeting on "Natural Disasters" were held on January 22-24, 2008, in Phuket, Thailand, in cooperation with the International Symposium on the Restoration Program from Giant Earthquakes and Tsunamis.
8 participants from 4 countries (India, Indonesia, Japan, Malaysia) attended the meeting.

ii Preparatory meeting on "Space Lithosphere Environment" were held on February 29 and March 1, 2008, in Sagamihara, Japan, in cooperation with "International Workshop on Seismo - Electromagnetic Observation Satellite"
60 participants from 10 countries (China, India, Indonesia, Japan, Philippines, Singapore, Taiwan, Russia, Ukraine, U. S.A.) attended the meeting.

iii Preparatory meeting on “Sustainable Water Resources Management in Asia” were held on March 10-11, 2008, in Bangkok, Thailand, in cooperation with “Asia Science and Technology Seminar in Thailand”
10 participants from 10 countries (Bangladesh, Indonesia, Japan, Philippines, Singapore, Thailand) attended the meeting.

6) The Management Board decided to endorse international symposiums as follows;

i “International Workshop on Seismo-Electromagnetic Phenomena: Recent Progress” hosted by Japan Society for the Promotion of Science (JSPS) , November 6-7, 2007, Bandung, Indonesia

ii “International Symposium on the Restoration Program from Giant Earthquakes and Tsunamis” hosted by Earthquake Research Institute, the University of Tokyo, National Institute of Advanced Industrial Science and Technology (AIST), Disaster Prevention Research Forum and Japan Society for the Promotion Science), January 22-24, 2008, Phuket, Thailand

iii “Asia Science and Technology Seminar in Thailand” hosted by Japan Science and Technology Agency (JST), March 10-11, 2008, Bangkok, Thailand

7) The joint-statement for “Development”, through the suggestive discussions in the G8+5 Academies’ Meeting in Tokyo, was completed in April by the inter-academic organizations concerning to the issues. Prof. Feng Changgen, as the President of SCA, put his signature on the joint-statement, with the cosignatories of NASAC (the Network of African Science Academies) and IANAS (the InterAmerican Network of Academies of Sciences). The statement is to be distributed to the TICAD IV (The Forth Tokyo International Conference on African Development) and other relevant opportunities.

# Joint Statement to the G8 on Global Development

# Joint statement by the Network of African Science Academies (NASAC), the Inter-American Network of Academies of Sciences (IANAS) and the Science Council of Asia (SCA) to the G8 on the role of science, technology and innovation in promoting global development.

**On the occasion of the G8 Summit in Hokkaido, Japan, 7–9 July 2008, we, the members of the Network of African Science Academies (NASAC), the Inter-American Network of Academies of Sciences (IANAS) and the Science Council of Asia (SCA), submit the following statement to the leaders of the G8+5 countries on the role of science, technology and innovation in promoting global development, fostering human welfare and reducing global poverty as called for in the Millennium Development Goals (MDGs).**

Recent global economic growth has been placed at risk by turbulence in financial markets. Yet, between 1998 and 2007, global gross domestic product (GDP) more than doubled. Between 2004 and 2007, it increased at an annual rate of nearly 4 percent. Moreover, for one of the few times in history, economic growth in the developing world exceeded economic growth in the developed world.

Sub-Saharan Africa, the world's poorest region, has actively participated in and benefited from these recent trends. Between 2000 and 2003, sub-Saharan Africa's GDP rose 3.7 percent annually. Between 2004 and 2006, the region's annual growth in GDP accelerated to 5.6 percent a year, and in 2007 GDP growth reached 6 percent. This represents the most sustained period of economic growth in sub-Saharan Africa in more than three decades.

This good news nevertheless does not hide the troubling news coming out of Africa. More than 40 percent of Africans live in extreme poverty. More than 70 percent live on less than US$2 a day. Some 26 million Africans are infected with HIV, and an estimated 2.5 million die of AIDS each year. More than 40 percent of Africans do not have access to safe drinking water. More than 70 percent do not have access to electricity. According to recent assessments made by the United Nations, no country in Africa is likely to meet all of the eight MDGs by the 2015 target date, and many African countries are unlikely to meet any of the MDGs by this time.

Differences in social and economic well-being between the least developed countries (LDCs) – most notably in Africa – and the rest of the world not only persist but also threaten to become larger. This growing disparity between rich and poor manifests itself in a variety of ways: between countries, within countries, by gender, and among workers.

The disparities are due partly to historical circumstances and partly to misguided economic policies that have resulted in weak institutions and rendered a large number of less privileged countries unattractive places for investment. But the disparities are also due to another factor: massive differences in the ability to generate, master and utilize science, technology and innovation.

One of the most critical issues that the global community faces is to continue to foster GDP growth and, at the same time, to make growth and human welfare more equitable. Building broad-based capacity in science, technology and innovation is fundamental to addressing these issues.

Over the past quarter century, we have moved from a world believed to have an unlimited bounty of resources to one where we must confront the reality of limited resources. Experts agree that people living in arid regions will have to compete for limited supplies of safe drinking water, and that current oil supplies (at least at affordable prices) may be exhausted by mid-century. Moreover, the spectre of global warming, largely generated by the burning of fossil fuels, may pose the greatest environmental challenge in the history of humankind.

Another critical issue facing the global community is how to foster policies that result in the sustainable use of natural resources, on which long-term social and economic well-being depends.

**We therefore call upon the G8+5 countries to partner with developing countries to achieve our common goals of poverty reduction and wealth creation by fostering international collaboration in science, technology and innovation. Specifically, we propose devising a 10-year action plan that would lay the groundwork for sustainable and equitable global economic growth. We are proposing that the plan, devised in consultation with experts largely drawn from academies of science, focus on the following critical issues:**

Promoting quality education for all. There is no better way to foster equality of economic opportunity than to provide all citizens with an excellent education. Education nurtures the skills required for independent analysis and decision-making. Scientific education, moreover, should be a life-long endeavour. We therefore urge increased support for interactive science centres and laboratories to help make the world of science more accessible to both children and adults, especially in developing countries.

Building sustainable capacity in science, technology and innovation. It is essential for each country to develop a critical mass of interdisciplinary problem-solving scientists, technologists and entrepreneurs who possess both scientific expertise and an appreciation of societal and developmental problems. This will require the establishment of world-class research universities capable of attracting the brightest students and setting global standards of excellence for the entire university system. We are requesting G8+5 countries to help fund the establishment of international research centres of excellence in developing countries staffed by local scientists who can collaborate as full partners in projects to be jointly executed by the international scientific community.

Adapting existing technologies to meet critical local social and economic needs, and investing in new technologies to address real-life problems. The pathway to development followed by Brazil, China, India and other emerging economies has focused on developing a well-educated workforce capable of mastering existing technologies and adapting these technologies to meet the critical social and economic challenges faced by their societies. This is a pathway to development that should be followed by other developing countries. There is also a need to increase national and international investments in cutting-edge science and technologies, especially technologies that can stimulate economic growth. These technologies include information and communication technologies, biotechnologies, environmental technologies and nanotechnologies.

Making science, technology and innovation integral parts of national development plans, and devising programmes to foster closer ties between the natural and social sciences and the public and private sectors. Scientific communities in developing countries, and especially in LDCs, have too often functioned in a vacuum separated from their societies. Special efforts should be made to design national research plans that are relevant to national needs and contribute to economic growth. These plans should promote interdisciplinary research and engage the private sector to work closely with government and universities .

Promoting the role of science academies. Academies of science have played a critical role in global development, especially in providing independent expert advice to governments concerning science-related issues. These institutions should continue to become actively engaged in national and global initiatives for sustainable development. It is essential that national governments give science academies the resources and independence that they need to play this vital role. To ensure that science, technology and innovation become an integral part of each country's strategy for sustainable growth, science academies must participate in the design and implementation of national development plans.

The Network of African Science Academies (NASAC), located in Nairobi, Kenya, is comprised of 13 merit-based science academies in Africa.

The InterAmerican Network of Academies of Sciences (IANAS), located in Rio de Janeiro, Brazil, consists of 14 merit-based science academies in the Americas.

The Science Council of Asia (SCA), located in Tokyo, Japan, is comprised of 19 scientific organizations in Asia. Each network dedicated to promoting science-based sustainable development.

# First Announcement of the 9th SCA Conference in Singapore


## Proposed Theme for 9th SCA Conference

# "Grooming Scientific Talent in Asia"

- Science is international. People are brought closer through ease of communicate enabled by technology. Information is free-flowing as cities are modernized and societies become cosmopolitan. Talent is becoming international as people becomes mobile and crosses borders frequently.

- Asia faces the challenge to groom and keep its best talent. At the same time, we want to make Asia the best place to be for Science, Technology and Research. We want to attract the best from the world to come to Asia, the fastest growing region.

## Proposed Theme for 9th SCA Conference

# "Grooming Scientific Talent in Asia"

UNIQUELY Singapore

- Singapore is a fine model on how its people is developed to its fullest. The country provides world-class infrastructure such as telecommunication networks . A fifth of Singapore's population are expatriates and migrant workers, being employed by one of the 7000+ multi-national companies on the island nation.
- The Conference may review strategies adopted by Asian countries to groom, attract and retain talent. Participants will discuss the challenges faced by each economies in educating and developing the next generation of S&T talent, at the same time, increasing the interaction and collaboration between Asian countries.

## 9th SCA Conference - Singapore 17-19 June 2009

# Proposed Programme

**Mon 16 June 09**
Arrival of Delegates & Registration

**Tuesday 17 June 09**
Opening Ceremony
*(Tentative GOH – Chairman A*STAR Mr Lim Chuan Poh)*
Management Board Meeting I / General Assembly I
Reception hosted by A*STAR

**Wednesday 18 June 09**
SCA Joint Workshop / Special Sessions
Reception hosted by SCA

**Thursday 19 June 09**
Management Board Meeting II
General Assembly II
Closing Ceremony

## 9th SCA Conference - Singapore 17-19 June 2009

# Conference Venues

Meetings Venues:

Biopolis
The Biomedical Hub of Asia

furionopolis

Suntec SINGAPORE
Asia's Convention City

Proposed Accommodations:

Swissotel

MANDARIN ORIENTAL SINGAPORE

HOTEL 81

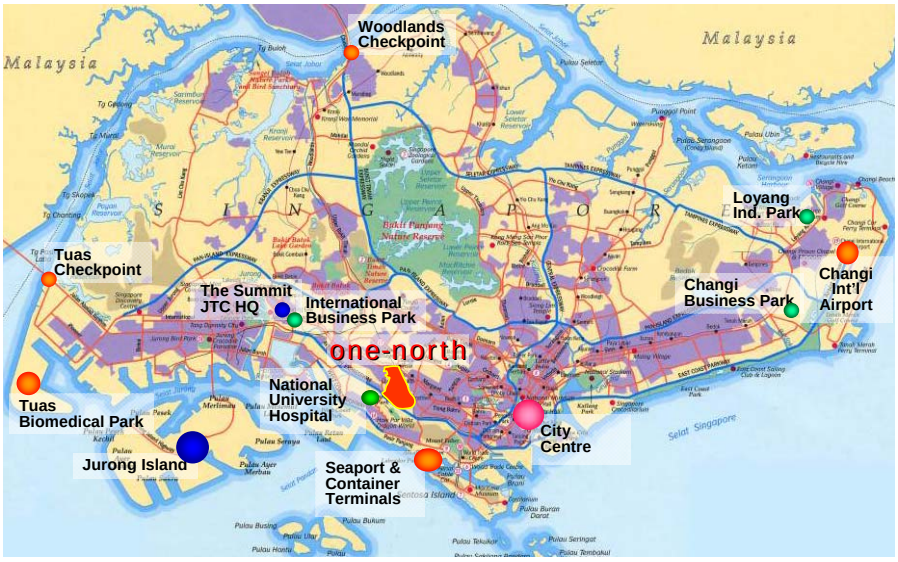
MARINA MANDARIN
MANAGED BY MERITUS SINGAPORE
滨华大酒店

Fragrance Hotel Singapore

THE RITZ-CARLTON, MILLENIA SINGAPORE

## 9th SCA Conference - Singapore 17-19 June 2009

# Locations of Conference Venues




See you in Singapore!
9th Science Council of Asia Conference
Tuesday 17th to Thursday 19th June 2009
Contact:
andrew_fun@a-star.edu.sg
Joshua_woo@a-star.edu.sg
Science Council of Asia
SINGAPORE
Agency for Science, Technology and Research