

Regional Activities on Remote Sensing in Asia

-Presented to Special Session SS-8 on
"How to promote remote sensing in developing countries?"

Shunji Murai
Institute of Industrial Science
University of Tokyo
7-22 Roppongi, Minatoku
Tokyo 106 Japan

ABSTRACT

As the general secretary of Asian Association on Remote Sensing (AARS) since 1981, the author has organized twelve annual base Asian Conference on Remote Sensing (ACRS) up to now. At every ACRS, the author used to organized a special session on "how to promote remote sensing in Asia?" as well as general conference where key representatives from AARS member countries used to exchange their ideas how to promote remote sensing in Asian region. Murai Laboratory conducted by the author has many experiences for international training and cooperations for joint research. The paper summarizes such experiences or discussions with respect to developing countries.

INTRODUCTION

Most developing countries have the following problems.

- a. Lack of budget
- b. Lack of experts
- c. Lack of education and training
- d. Lack of supervisors
- e. Military control
- f. Lack of maps and statistics

Though developing countries are dependent on natural resources, there is few maps to survey the inventory and to follow the change. This is the good reason why remote sensing can play a great role in developing countries.

However remote sensing can become more powerful if it combines with GIS. In this sense, technical transfer or international aid should be offered to developing countries.

1. Technical Transfer

There are many international training courses. But most of them are focused on training of operation with respect to hardware and software. This would be alright for routine jobs. One must note that any existing system should be needed a little modification or additional subsystems. In this sense, training for software development is necessary.

In developing countries, organization of research projects is not well conducted because of less supervisors and less experiences. Therefore technical transfer needs to accompany with supervisorship which is provided from developed countries.

Murai Laboratory has continued to donate a Japanese personal computer set with complimentary softwares to developing countries every year including Thailand, Vietnam, Mongolia and Indonesia until now, together with a Japanese young assistant for supervising and coworking. This is highly appreciated even though the donated money is not so big.

In case of accepting a trainee from a developing country in a developed country, a work plan or research plan should be well prepared together with remote sensing imagery as well as other maps. In my experience, it has been more attractive for the trainee to undertake the training or research with his or her own problem and data.

2. Workshop / Seminar / Symposium

There have been many workshops, seminars and / or symposia organized by international organizations including Asian Association on Remote Sensing (AARS).

Table 1 List of ACRS's

	City, Country	Date	Countries	Participants	Papers
1st	Bangkok, Thailand	1980.11/5-7	12	159	42
2nd	Beijing, China	1981.10/29-11/4	16	167	95
3rd	Dhaka, Bangladesh	1982.12/4-7	17	169	60
4th	Colombo, Sri Lanka	1983.11/10-15	20	187	83
5th	Kathmandu, Nepal	1984.11/15-18	15	171	49
6th	Hyderabad, India	1985.11/21-26	12	342	109
7th	Seoul, Korea	1986.10/23-28	17	136	62
8th	Jakarta, Indonesia	1987.11/23-29	21	226	125
9th	Bangkok, Thailand	1988.11/23-29	30	478	113
10th	Kualalumpur, Malaysia	1989.11/23-29	30	441	87
11th	Guangzhou, China	1990.11/15-21	22	513	162
12th	Singapore	1991.10/30-11/5	28	225	94
13th	Ulanbaatar, Mongolia	1992.10/7-11			
14th	Tehran, Iran	1993.			

Table 1 shows the Asian Conferences on Remote Sensing organized by AARS with respect to date, venue, number of participants and presented papers.

The influences of ACRS are as follows.

- (1) ACRS offers a good chance for Asian scientists to communicate frankly through ACRS and its cultural program, which encourages personal contact and regional cooperation.
- (2) ACRS offers an opportunity for Asian scientists to present technical papers, which stimulates them to improve the quality of research and presentation technique and to exchange technical information.
- (3) ACRS offers a field for Asian scientists to think of Asian unique problems including deforestation, desertification, disaster monitoring, sustainable development, human impacts etc.
- (4) ACRS offers a place for Asian scientists to cwork for common interest, for example publication of the book on " Applications of Remote Sensing in Asia and Oceania " that has been published in October, 1991.

As it is impossible for the author to review all symposia which were held in Asia, the author will make comments only to those major symposia in which the author participated in these four years.

(1) The 16th ISPRS Congress, Kyoto, Japan, July 1988

The Congress has been held in Asia for the first time with a big impact on Asian scientists to have communicated with the most advanced researchers and academicians as well as to have had opportunities of highly advanced exhibits. The author as the Congress Director is still now proud of the success of the Congress. In conjunction with ISPRS, Mongolia, Nepal and Vietnam joined ISPRS membership through AARS activities. It would be a good example of contribution of the regional member's activity to ISPRS.

(2) IAF Congress, Bangalore, India, October 1988

The author was invited as one of four key note lecturers at the opening session as well as the Chairman of the session on the International Remote Sensing Coordination Activities representing ISPRS too. It was nice to have met key scientists in remote sensing and/or global change monitoring who used to be not much involved in ISPRS activity for example, Prof. U.R.Rao, Director of ISRO, India, Dr. I. Rasool, NASA, USA and Dr. F.B.Henderson III, Geosat Committee, USA.

Frankly speaking the sessions and the papers on remote sensing presented at IAF Congress are not very much active nor interesting. However personal channels should be kept for future cooperation with ISPRS.

Two big countries in Asia; India and China have better demonstrated their space activities at IAF Congress than at ISPRS. This is the reason why ISPRS did not invite remote sensing scientists but mainly surveyors and photogrammetrists to ISPRS Congress because of single membership.

**(3) The 9th ACRS, Bangkok, Thailand
November, 1988**

The conference was one of the most exciting and active symposia held in Asia mainly because the Her Royal Highness the Thai Princess Maha Chakri Sirindhorn participated in the ACRS for four days as the opening speaker as well as one of the speakers of technical paper. The number of participants was 473 from 30 countries and 113 papers were presented.

Thailand has demonstrated her activities in remote sensing in receiving satellite data of Landsat, SPOT and MOS-1 and in promoting applications to deforestation, disaster monitoring, shrimp farm development, soil erosion and so on. Thailand is a sort of center in international cooperation or aid by Asian Institute of Technology (AIT), UN/ESCAP, Mekon Committee, JICA, CEDA, ITC etc.

Tremendous improvement in computer hardware and scientific research budget has been recognized in Thailand in these ten years.

**(4) IEEE Image Processing Symposium,
Singapore, September 1989**

The author was invited as the chairman of the technical session on "Applications of Image and Signal Processing" and as a co-speaker with the graduate student who presented a technical paper on "Automated DTM Generation from Topographic Maps." As the symposium was fully organized by a commercialized conference company, the atmosphere was very business-like. Though there were a few interesting topics or papers, useful channels with ISPRS were not recognized. Remote sensing and machine vision at this IEEE symposium were very weak.

**(5) The 10th ACRS, Kuala Lumpur,
Malaysia, November 1989**

AARS has celebrated the 10th anniversary with 441 participants from 30 countries and 87 papers. At the General Conference, Iran was admitted as an ordinary member of AARS.

Malaysia had just established Malaysian Centre for Remote Sensing (MACRES) under the Ministry of Science, Technology and Environment as well as under the sponsorship of Canada International Development Agency.

It would be a result of ACRS that the quality of papers and posters becomes progress because the several best speakers and the two or three best poster presentations used to be awarded at each ACRS.

**(6) ERIM Symposium, Bangkok, Thailand,
April 1990**

In spite of the well known founder of remote sensing in the world, ERIM symposium held in Bangkok was not successful in the number of participants and the quality of papers. The reasons are very expensive registration fee (500 US Dollars) for Asian people, ill selection of invited papers with less quality or outdated topics, too much political comments and so on. A kind of "American Show" organized by ERIM in the past would not be working well in future.

**(7) ISPRS Com.IV Symposium, Tsukuba,
Japan, May 1990**

The first interim symposium of ISPRS commission was held in Tsukuba Scientific City, the intelligent center of Japanese governmental research organizations. The main topics were integration of remote sensing and GIS, 3D GIS, global DEM, digital mapping and so on. The symposium was not very much exciting but interesting with 3D GIS and global DEM. The number of participants was 228 from 29 countries and 93 papers were presented. It should be reported that Japanese younger scientists were well trained in organizing the international symposium and in presenting technical papers in English. This is a result from the experience of Kyoto ISPRS Congress.

**(8) ISPRS Com.III Symposium, Wuhan,
China, May 1990**

The timing of the symposium was very difficult in about one year after the Tian An Men demonstration, which resulted in not many participants from foreign countries (115 participants from 24 countries) as well as not many papers (40 papers). However the quality of presented papers was so high, for example, GIS theory, image matching, artificial intelligent, aerial triangulation with GPS.

The Wuhan Technical University of Survey and Mapping (WTUSM) has demonstrated the participants its high academic standard of education and research in photogrammetry and remote sensing. It should be noted that Professor Wang Zhizhuo was celebrated his completion of publishing a wonderful book on "Principles of Photogrammetry" (English version) during the symposium.

(9) The 11th ACRS, Guangzhou, China, November 1990

The conference was the biggest in the number of participants (513 participants) from 22 countries and the number of papers (162 papers). As Guangzhou used to be somewhat home town of Chinese who are living in South East Asia and is the best place to eat, the conference was somehow exciting and enjoyable. The Zhongshan University hosted the conference very well including dinner party on a boat, sport matches by the participants and bus tour to Zhaoqing, through which individual communication was developed with friendship.

(10) Symposium on Joint Research, Bangkok, Thailand, February 1991

The symposium was co-organized by Science and Technology Agency (STA), Japan and NRC, Thailand for the joint research projects on the enhancement and applications of remote sensing technology between ASEAN countries and Japan. It was a Japanese contribution to ASEAN countries to promote researches in remote sensing on joint base.

Though the researches were not well defined, communications between ASEAN countries and Japan were promoted in personal exchange and technical transfer.

(11) The 12th ACRS, Singapore, October/November, 1991

Because the governmental subsidise could not be available in Singapore, all expenditures were paid from the incomes of registration, commercial exhibits and contribution. It was the first ACRS that has been supported by herself. The number of participants was not many as the last two conferences that is, 225 participants from 28 countries because of less number from Singapore. This symposium was a kind of symbol that many industries and remote sensing organizations tried to continue the symposium in a way of Asian tradition as the past ACRS's were, by paying money in various ways.

(12) IGU Seminar, Delhi, India, December 1991

The University of Delhi hosted the IGU seminar with a focus on global environmental map and mountain hazard particularly of the Himalaya. It was interesting to have met some key members of IGU workshop on Global Environmental Map, for example, Prof. Nikita F. Glazovsky, Deputy Minister of Ecology and Natural Resources, (USSR at the time), Prof. Roger E. Kasperson, Clark University, USA, Dr. Alexandar Drozdov, Institute of Geography, (USSR), Prof. John B. Thones, Univ. of London, U.K. and Prof. R.B. Singh, Univ. of Delhi, India.

The crisis of the Himalaya with deforestation, over population, highland development and land slides was realized by the participants through the five day field trip to the Himalaya.

Summary

Asia is said to be the most prosperous region in economy and technology for the 21st century as well as the most serious region in the human pressures due to the population explosion. In this sense, topics and subjects in remote sensing and GIS in relation with Asian region would be good targets in research and application.

Though the bi-lateral relation between Asian countries and Western countries used to be strong in education, training and/or technical transfer, the research is not yet well promoted with less budget, less researcher and less supervisor. The author thinks that the promotion of research in Asia is a key goal for the 21st century.

The author also hopes that Asian countries such as India, China, Japan, Thailand etc. should contribute to ISPRS activities, just like to AARS activities.