

Survey Department in the Forum of International Activities: A Brief Overview

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Abstract

The scope of work of the Survey Department, Nepal is also related to Agenda 21 of Rio de Janeiro Earth Summit. In order to support this Agenda, the Department has joined the number of International Organizations as a member and participated in the forum of the activities organized by these organizations. Besides, the department has participated in the activities organized by some of the other institutions in which it is not a member. Therefore, the aim of this paper is to provide some views on the membership details and related activities of those organizations with which Survey Department, Nepal is actively involved. The role of the department in the forum has also been discussed.

1. Introduction

United Nations Conference on Environment and Development organized the "EARTH SUMMIT" on June 3-14, 1992 in Rio de Janeiro, Brazil. Representatives from 180 countries with 108 Heads of Government participated the Summit. The participants gathered to discuss many environmental and development problems facing the world. In this summit, Agenda 21 - a programme of action for sustainable development worldwide, the Rio Declaration on Environment and Development, and the statement of principles for the sustainable management of forests were adopted by consensus. Eight chapters of the plan relates to the necessity to provide geographic information.

Agenda 21 stands as a comprehensive blueprint for action to be taken globally by governments, United Nations organizations, development agencies, non-governmental organizations and independent sector groups, in every area in which human activity impacts on environment. It is believed that no nation can achieve sustainable development on its own, so global partnership is being sought for the cause. Guided by the philosophy, Survey Department is trying to participate in international programmes as much as possible to contribute in its own way to fulfill partially the objectives of Agenda 21, besides having its own problems and constraints.

In this connection, Survey Department presently is directly involved in a few regional and international organizations as an active member and trying to participate in few other international programmes of the organizations in which the department is not a member at all. This certainly improved the status of the department in broadening its scope and helped to direct the activities towards sustainable development. The following paragraphs will deal with the organizations in which the department is involved in the programmes of these organizations.

2. SAARC Networking Arrangement on Cartography (SNAC)

With the realization of common problems of SAARC countries, i.e. Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka, especially on environmental degradation and unplanned land and other natural resources, it was felt that in order to overcome these issues, updated and appropriate geographical information in the form of maps/data become necessary. Therefore, a thought was evolved to have a meeting of the heads of surveying and mapping organization of the member countries of SAARC.

Since the subject area belongs to the scope of SAARC Technical Committee on Science and Technology, the 12th SAARC Technical Meeting held on September 6-7, 1994 in Kathmandu gave permission to conduct the First SAARC Technical Meeting on Cartography in Kathmandu. Accordingly, His Majesty's Government, Ministry of Foreign Affairs, Royal Nepal Academy of Science and Technology and Survey Department of Nepal organized first meeting jointly in Kathmandu from March 14-15, 1995. Twenty one delegates from Bangladesh, India, Nepal, Pakistan and Sri Lanka participated the meeting.

During the two days of deliberations, SAARC Networking Arrangement on Cartography (SNAC) was constituted in order to pursue further for common benefit of the SAARC member countries. The heads of the National Survey and Mapping organization of the member countries will represent respective countries to the SNAC. The Director General of Survey Department, Nepal shall lead the SNAC until the next meeting as Chairperson to coordinate the activities of the Arrangement.

Some of the major activities identified in the meeting were as follows:

- Prepare a SAARC Directory on Cartography education and training
- Compile an inventory of atlas, maps and digital database at the resolution which can be made available by the country to the member countries
- Circulate periodicals and journals among the member countries
- Exchange experts and technicians
- Conduct workshop/ seminars/ conferences
- Share knowledge on technology and experiences
- Launch collaborative projects to strengthen the geodetic network of the region

In the context of SNAC, Survey Department, Nepal should review its progress on the activities mentioned above and should act accordingly. Furthermore, the department should take initiative to arrange the second meeting in one of the member countries of SAARC.

3. Asian Association on Remote Sensing (AARS)

Asian Association on Remote Sensing (AARS) was born on April 25, 1980 in San Jose, Costa Rica. The name of the association was formalized during the second conference held in Beijing, China in 1981, whereas the first conference was held in Bangkok, Thailand in 1980. Professor Shunji Murai is leading the association. The prime aim of the association is to organize an Asian Conference on Remote Sensing (ACRS) every year in one of the Asian countries in Asian style as it is termed. The purpose is to create a forum where agencies from Asia or otherwise related to remote sensing, leading remote sensing practitioners and researchers meet to exchange views and experiences. Due to advanced development in high resolution and hyper spectral imaging, its field of application is widening everyday even in Asian countries.

In AARS there are three types of membership namely Ordinary Membership, Associate Membership and Sustaining Membership. Ordinary membership is given to the organization related to surveying, mapping and remote sensing disciplines of Asia and the Pacific regions. Associate Membership is given to the professionals from other parts of the world and Sustaining Membership to the companies related with the concerned field and at present the number of members in the category of ordinary, associate and sustaining are 24, 8 and 12 respectively.

From the historical record, it appeared that the National Remote Sensing Centre, Department of Forest, Ministry of Forest and Soil Conservation, Nepal have been participating the annual conference since the 3rd conference held in Bangladesh on 1982. The association awarded the membership of AARS to the Centre in the 3rd ACRS. The Centre organized the 5th conference in Nepal. Then, from the 19th ACRS, which was held in Hong Kong on 1999, Survey Department, Nepal, has been participating the conference regularly. In this Conference, the membership was transferred from Department of Forest to Survey Department. The department convened the 23rd ACRS in Kathmandu in 2002, to commemorate the International Year of the Mountain 2002, declared by United Nations. The Conference was organized jointly by Survey Department, Nepal and AARS on November 25-29, 2002.

Being an active member of the association, the Department should therefore have regular participation in the conferences organized by the Association in future as well to enhance its activities in remote sensing.

4. Permanent Committee on GIS Infrastructure for Asia and the Pacific (PCGIAP)

At the 13th United Nations Regional Cartographic Conference for Asia and the Pacific held in Beijing, China May 1994, the resolution 16 was adopted to form a Permanent Regional GIS Infrastructure Committee. Pursuant to the Resolution, Permanent Committee on GIS Infrastructure for Asia and the Pacific (PCGIAP) has been formally established at the inaugural formation meeting held in Kuala Lumpur, Malaysia on July 12-14, 1995. The PCGIAP operates under, and reports to, the UN Regional Cartographic Conference for Asia and the Pacific.

The aim of the Committee is to maximize the social and environmental benefits of geographic information in accordance with Agenda 21 by providing a forum for nations from Asia and the Pacific to:

- a. Cooperate in the development of a regional geographic information infrastructure
- b. Contribute to the development of the global geographic information infrastructure
- c. Share experiences and consult on matters of common interest; and
- d. Participate in any other forum of activity such as education training and technology transfer.

The membership of the PCGIAP consists of the directorates of national survey and mapping organizations or equivalent national agencies. At present, there are 55 member nations from Asia and the Pacific as advised by the United Nations. Each nation nominates a single representative to the PCGIAP. Survey Department is also the member of Permanent Committee on GIS Infrastructure for Asia and the Pacific (PCGIAP) representing the country since the establishment of the committee.

The mandate, its scope of work and the activities are based on the Statutes of the Permanent Committee on GIS Infrastructure for the Asia and the Pacific, May 1999. Recently, on 16th UN Regional Cartographic Conference for Asia and the Pacific, Japan, 2003, articles No. 6 and 10 have been amended. Accordingly, in Article 6 among the linking of other relevant UN programs and international bodies, EUROGI and CERCO was replaced by EUROGI and **EUROGEOGRAPHICS** and in Article 10, the provision of number of members in the Executive Board Members have been increased from seven to **nine** members.

At present, the following Working Groups of PCGIAP are constituted to undertake projects in pursuit of the PCGIAP aims and objectives and to prepare recommendations and its report to UNRCC-AP by PCGIAP as per its mandate:

- Working Group 1: Regional Geodesy
- Working Group 2: Fundamental Data
- Working Group 3: Cadastre
- Working Group 4: Institutional Strengthening

These working Groups organize meetings and workshops to discuss and to prepare reports on their operational areas as per the requirements.

5. International Steering Committee for Global Mapping (ISCGM)

The Ministry of Construction, Geographical Survey Institute (GSI), Japan has proposed a plan for a Global Mapping Project to the international communities. The objective of the Global Mapping is to provide a biological and geographical database useful for both global environmental studies and large scale regional development planning. The spatial resolution of the Global map database is 1 km x 1 km that corresponds to a scale of 1:1M for printed maps. The information content of the database are Geomorphologic Data such as terrain elevation, watershed and geomorphologic unit boundary, environmental data such as vegetation, hydrology and land use and geographical data such as rivers, coast lines and administrative boundaries. So, the Global Map is defined as "*a group of global geographic data sets of known and verified quality, with consistent specifications, which will be open to the public*". Global Map is considered as a common asset of mankind, and will be distributed worldwide at marginal cost. In order to implement this project, International Steering Committee for Global Mapping (ISCGM) was constituted.

The primary purpose of this Committee is to examine measures that concerned national, regional and international organizations can take to foster the development of Global Mapping in order to facilitate the implementation of global agreements and conventions for environmental protection as well as the mitigation of natural disasters and to encourage economic growth within the context of sustainable development.

The expectation of ISCGM is to have complete Global Map coverage by 2007 to provide a spatial framework to facilitate the actions of the countries of the world both individually and collectively to conserve the fragile world societies more viable and sustainable for future generation through global change monitoring and environmental analysis. So, the Global Map is used to protect the global environment in the 21st century.

Global Map data are produced mainly by National mapping Organizations participating in Global Mapping project under international cooperation. However, depending upon the capabilities and available resources of the organizations, the following three types of Membership exists in this committee:

Category A: The organizations which produce data not only of their own, but also of other countries based on materials developed on their own or those provided by ISCGM

Category B: The organizations that produce only data of their own countries

Category C: The organizations that do not produce the data by themselves, but provide ISCGM with information such as administrative boundaries and recent version of paper maps needed for data production, and or validation.

HMG, Council of Ministers sanctioned HMG Survey Department to apply for the membership of this committee on 2056/03/10 and ISCGM awarded membership to Survey Department for the category B. At present, 130 countries of the world, including Nepal, are participating in the Global Mapping programme and 20 more countries are in a state of consideration for participating in this programme.

The recent programme of the Committee is to prepare a digital database of the member country at the resolution of 1: 1 000 000. Although, Nepal is in the Category B member, it was not in a state to prepare such database due to lack of technology, human resources and financial resources. So, GSI, Japan assisted to prepare the global mapping database for Nepal. The basic document used to prepare the database are 1 : 500 000 scale maps of development regions administrative maps published by Survey Department of Nepal and the population census map of 1991 published by Central Bureau of Statistics of Nepal.

The Global Map data of six countries including Nepal was released by ISCGM as a version 1.0 on November 28, 2000. By July 12, 2003, the data of 17 countries has been released. The data is available in website <http://www.iscgm.org>. The Secretariat of ISCGM will attempt to make Global Map more easily available on the World Wide Web to facilitate linkages with other global data sets.

At present, Survey Department has a capability to build the digital database and it has established the National Topographic Data Base using topographical base maps at the scale of 1:25 000 and 1:50 000 prepared during the period of 1989-2000. Furthermore, Central Bureau of Statistics of Nepal has published the population census data of 2001. So the global mapping database of the country could be updated or replaced by using newly developed database and information.

6. International Federation of Surveyors (FIG),

The aim of Federation Internationale des Geometres or International Federation of Surveyors (FIG), mentioned in the FIG work plan 2000-2003 (No. 20) is as follows:

"To be the premier international non-governmental organization that represents the interests of Surveyors and users of surveying services in all countries in the world. It is a federation of member associations all of whom seek excellence in the services that they deliver."

More than 100 countries are represented in FIG in the following four categories of members

- Member Associations: national associations representing one or more of the disciplines of surveying
- Affiliates: groups of surveyors or organizations undertaking professional activities but not fulfilling the criteria for member associations
- Corporate Members: organizations, institutions or agencies which provide commercial services related to the profession of surveyor
- Academic Members: organizations, institutions or agencies, which promote education or research in one of the disciplines of surveying.

In order to achieve the aim, FIG regularly organizes events such as conference/workshop/meeting etc. In some of these events the officials or ex-officials of Survey Department participated and they shared their experiences from the events with the officials of the department. In 2002, the department realized that the time has come to affiliate the department with FIG to give its exposure in international communities of the field concern. Accordingly, a three member team led by Mr. Ananta Raj Pandey, Secretary, Ministry of Land Reform and Management participated XXII FIG Congress which was held in Washington D.C. from April 22-27, 2002. In the general assembly, Mr. Babu Ram Acharya, Director General, Survey Department, Nepal applied for the membership of FIG and President, Dr. Robert N. Foster of FIG on April 23, 2002, awarded an Affiliate Membership of FIG to the department. It was approved by HMG (Hon. State Minister level) on 2059/1/29 (May 12 2002).

In order to support the FIG Congress the following Ten Commissions are constituted and in each of these Commissions one person from Survey Department is also commissioned to participate in the activities of respective Commissions:

Commission 1: Professional Standards and Practice

Commission 2: Professional Education

Commission 3: Spatial Information Management

Commission 4: Hydrography

Commission 5: Positioning and Measurement

Commission 6: Engineering Surveys

Commission 7: Cadastre and Land Management

Commission 8: Spatial Planning and Development

Commission 9: Valuation and the Management of Real Estate

Commission 10: Construction Economics and Management

Now, Survey Department has additional responsibility to keep pace with the activities of FIG. Therefore, the department should contribute to achieve its goal and should manage for the participation of events of FIG as much as possible so that the department could gain maximum experiences from it and for furthering development in surveying and mapping activities in Nepal.

7. Group on Earth Observation

The goal of the Earth Observation is to develop an implementation plan to achieve the following objectives:

- a. Move toward a comprehensive, coordinated and sustained Earth Observation System if Systems
- b. Address developing countries capacity building needs
- c. Improve the world wide reporting and archiving of data

In this context, Earth Observation Summit I was held in Washington D.C. on July 31, 2003 where an *ad hoc* intergovernmental Groups on Earth Observation (GEO) was established and also established the following 5 Subgroups

- i. User requirements and outreach
- ii. Data Utilization
- iii. Architecture
- iv. Capacity building
- v. International cooperation

Nepal applied for the membership of Geo as per the decision of His Majesty's Government dated 06/12/11 and the membership was awarded to Nepal by GEO-4 meeting, which was held in Tokyo, Japan on April 22-23, 2004. At present, there are 48 member countries and 29 international organizations.

The major tasks of Geo, at present, are to give guidance for establishing Global Earth Observations System of Systems and to draft 10 year implementation plan before the Earth Observation Summit III to be hosted by the European Union in early 2005 in Brussels.

8. Some other Organizations

Besides the abovementioned activities, Survey Department is also participating in the activities of the following organizations though not regularly but as and when possible:

United Nations Regional Cartographic Conference for Asia and the Pacific (UNRCC-AP), International Society for Photogrammetry and Remote Sensing (ISPRS), Map Asia, Cambridge Conference, etc.

9. Why the Participation?

The basic reasons for the department to participate in these international events are obvious and could be listed as follows:

- To report the present status of the department in the field of Geoinformatics
- To give exposure of the department in international communities of its existence
- To make acquaintance with the recent developments in its working areas
- To gain experiences to fulfill its responsibilities when the task is assign
- To share knowledge with experts, professionals, individuals
- To develop confidence to face with the foreign counterparts
- To widen the scope of the department.
- To evaluate the status of the department with respect to other related organizations in the world.

10. What are the Results?

The results from the participation of international activities could be evaluated in terms of quantity and outcomes. Every year, numbers of international activities are organized in different parts of the world. It is not possible to have participation in each and every event and it is not necessary also but there should be

participation, at least, on the events organized by the organizations in which the Department is the member. However, due to some unavoidable circumstances, it is sometimes not possible to participate even in such activities. The department always tries to participate in as many programmes as possible.

The major outcomes by participation of the programmes are number of officials from the department got opportunity to gain experiences by sharing the knowledge with the professionals from other parts of the world and helped to introduce new feasible technologies in the department. So, the department expanded its scope of work when it felt appropriate. The participant submits the detail report of the event along with the Proceedings, other important documents and some brochures of the different organizations to the Director General. In case, the Director General participates the event, he has to submit the report to the Secretary, Ministry of Land Reform and Management; however, a copy of the report is available in the Department. The interested officials from the Department could update and enhance their knowledge by studying these documents.

11. What are the Roles?

The main roles of the department after the participation of an international event are as follows:

- Study the resolutions and future programmes of the event
- Identify and select the technologies which are suitable to the country and which can be implemented with its own resources.
- Implement the activities that are necessary to fulfill to support the programme of the event that are decided by the concerned forum. Then, report the progress in the following programme of the related event.

12. Conclusion

In the present context of globalization, Survey Department should expose itself to the international communities. This will help in reorganizing its activities and to remain at par with the technology trends. So far, the Department has direct affiliation with five international organizations. The progress from the participation of the events of these organizations is quite satisfactory; however, more participation is expected by optimizing its existing resources.

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