



Economic and Social Council

Distr.
LIMITED

E/CONF.92/L.10
11 April 2000

ORIGINAL: ENGLISH

FIFTEENTH UNITED NATIONS REGIONAL
CARTOGRAPHIC CONFERENCE FOR
ASIA AND THE PACIFIC
Kuala Lumpur, 11- 14 April 2000
Item 5 of the provisional agenda*

PCGIAP EXECUTIVE REPORT

* E/CONF.92/INF.1

PCGIAP Executive Report
to the
15th United Nations Regional Cartographic Conference
for Asia and the Pacific (UNRCC-AP)
and the
6th meeting the Permanent Committee on GIS Infrastructure
for Asia and the Pacific (PCGIAP)
Kuala Lumpur, 11-14 April 2000

INTRODUCTION

This report from the PCGIAP Executive:

President	Dato' Abdul Majid bin Mohamed	Malaysia
Vice-President	Professor Yang Kai	China
Secretary	Mr Drew Clarke	Australia

covers the three year period since the 14th United Nations Regional Cartographic Conference for Asia and the Pacific and the 3rd meeting of the Permanent Committee on GIS Infrastructure for Asia and the Pacific (PCGIAP) held immediately following, in Bangkok February 1997.

The report documents activities on:

- Resolutions from the 14th United Nations Regional Cartographic Conference for Asia and the Pacific (UNRCC-AP) held in Bangkok February 1997; and
- progress by PCGIAP against its workplans that were amplified and assessed at subsequent PCGIAP annual meetings in 1998 and 1999.

The report also covers the proposed future activities of the Committee following this meeting in Kuala Lumpur.

The Executive offers sincere gratitude to all who assisted the Committee during this period. Special thanks go to the Executive Board Members:

Lt Gen A.K. Ahuja	India
Mr Rudolf W. Matindas	Indonesia
Mr Saeid Noori Bushehri	Iran
Mr Motoyuki Kidokoro	Japan
Mr Jae Joon Huh	Korea
Engr. Mr Isidro S Fajardo	Philippines
COL Nukool Ratanakarn	Thailand
Mr Peter Holland, Australia	Chair, Working Group 2

for their valued contributions.

The efforts of Committee Members are also very much appreciated by the Executive as are the endeavours of Working Group Chairs and personnel who are the arms and legs of the Committee.

THE UNRCC-AP AND THE PCGIAP

The 14th UNRCC-AP developed 20 resolutions a number of which charged the PCGIAP with undertaking activities for the development and implementation of the Asia-Pacific Spatial Data Infrastructure (APSDI).

Following discussions between the United Nations Statistics Division (UNSD) and the PCGIAP, agreement was reached for the 15th UNRCC-AP to be held in Kuala Lumpur and the 6th meeting of PCGIAP to be incorporated within the 15th UNRCC-AP. In consultation with UNSD the meeting has been arranged by the PCGIAP and hosted by Malaysia on behalf of the PCGIAP.

UNSD Director Mr Hermann Habermann recently engaged a GIS expert Mr Amor Laaribi and PCGIAP has been liaising with UNSD on preparations for the 15th UNRCC-AP.

PLANS FOR THE 15TH UNRCC-AP

The main plans for PCGIAP at the 15th UNRCC-AP are to:

- Report on resolutions from the 14th UNRCC-AP and develop resolutions as the framework for UNRCC-AP and PCGIAP activities for the next three years up to the 16th UNRCC-AP in 2003
- Assess progress with PCGIAP workplans and develop workplans up to the 7th PCGIAP meeting in 2001 and for the following two years
- Elect a new PCGIAP Executive, Executive Board and Working Group Chairs up to the 16th UNRCC-AP
- Confirm PCGIAP working group structure and activities and consider the formation of PCGIAP working groups for Cadastre and Geographical Names
- Explore opportunities for further developing relationships between PCGIAP and:
 - International scientific bodies and spatial data coordination bodies
 - ESCAP's Space Technology Applications Section
- Take note of the messages contained in presentations of invited speakers in particular regarding the best use of GIS and its related disciplines in support of sustainable development
- Better determine the GIS and related development needs of PCGIAP member countries to assist them with national spatial data infrastructure development that will in turn contribute to the regional model.

UNRCC-AP RESOLUTIONS

Twenty resolutions were passed at the 14th UNRCC-AP in Bangkok February 1997. Resolution 7 - *Monitoring the implementation of Conference Resolutions* was developed to ensure the status of the resolutions from UNRCC-APs could be monitored and the PCGIAP was charged with proposing a system to the United Nations. This item will be covered in the programme for 15th UNRCC-AP under *UNRCC-AP Reports, Resolutions of the 14th UNRCC-AP* where all 14th UNRCC-AP resolutions will be reported on.

The PCGIAP working groups have made considerable progress with their workplans in developing the APSDI. A number of resolutions from 14th UNRCC-AP provided the impetus and basic structure for these workplans and summaries of PCGIAP working group activities are covered in this report.

Following Bangkok Resolution 13 – *Workshop on land rights, land responsibilities and restrictions*, the United Nations and the International Federation of Surveyors (FIG) held the following events in Australia in October 1999:

- The "International Workshop on Land Tenure and Cadastral Infrastructures for Sustainable Development" from which "The Bathurst Declaration on Land Administration for Sustainable Development" was developed; and

- "The International Federation of Surveyors International Conference on Land Tenure and Cadastral Infrastructures for Sustainable Development" in Melbourne which launched the Bathurst Declaration and explored humankind-land relationships in the context of Agenda 21 and the emerging global village. The Conference determined a broad vision and a set of guidelines for legal, technical and institutional cadastral infrastructures and systems to support land management and in particular land administration to ensure sustainable development.

PCGIAP MEETINGS

Annual Meetings

Following the Bangkok meeting in February 1997 PCGIAP held annual Committee meetings in:

- Tehran, Iran March 1998; and
- Beijing, China April 1999.

Reports from the three meetings were distributed to all members and to interested parties and are on the PCGIAP web site. (<http://www.permcom.apgis.gov.au/>)

Tehran, Iran – 28 February - 4 March 1998

The meeting in Tehran was used as an opportunity for the Committee to ensure its directions for the future would be on the right course. The Committee acknowledged the achievements of the PCGIAP and the goodwill and cooperation amongst members and noted recommendations coming from the 14th UNRCC-AP meeting for action by the PCGIAP.

Using a paper on future directions prepared by the Secretary for the Committee four key issues were addressed regarding the future role of the PCGIAP and the recommendations from the 14th UNRCC-AP:

1. participation rates by member countries;
2. design of the work program (and hence of the working groups);
3. availability of resources to pursue the program;
4. functional relationship with the UNRCC-AP.

The amended structure and operations of the PCGIAP were as set out below.

Executive / Secretariat

- oversee the operations of PCGIAP
- finalise, approve and publish the APSDI framework document
- further establish relations with similar international bodies.

Working Group 1 - Regional Geodetic Network

- implement a regional precise geodetic network
- define a regional horizontal geodetic datum
- investigate a regional vertical geodetic datum.

Working Group 2: Regional Fundamental Data

- develop a policy for sharing regional fundamental data
- define and integrate regional fundamental datasets
- identify Asia-Pacific SDI data nodes
- undertake regional GIS application demonstrations.

Development Needs Taskforce

- identify members' NSDI related development needs
- recommend support programs and funding options.

In addition the PCGIAP Statutes were proposed for amendment in consideration of the changes.

Beijing, China – 19-22 April 1999

The Beijing meeting noted the significant progress made by PCGIAP members and working groups with their work plans.

The Committee's key document, a definition of the Asia-Pacific Spatial Data Infrastructure (APSDI) - Publication No.1 produced in October 1998 was tabled. Publication No.1 had been widely distributed and was made available through the PCGIAP Web site.

The PCGIAP Statutes were amended primarily to reflect:

- the changed operational circumstances of the Committee since its inception in 1995 and following the new directions taken at the Tehran meeting in March 1998; and
- a less restrictive approach to replacing members of the Board.

Working Group 1 carried out its second regional geodesy campaign prior to finalising the outcomes in a PCGIAP workshop in Vietnam in July 1999.

Working Group 2 had a successful period with its work towards establishing a policy for sharing data, in the definition of fundamental datasets, and for a regional data directory.

The Taskforce circulated a questionnaire to all 55 PCGIAP member countries seeking information on national survey, mapping and GIS programmes. As well they have carried out other activities such as direct visits and a workshop to help determine appropriate development needs projects of member countries.

The work of PCGIAP was seen a demonstration of the capacity to take a lead role in the region and to further coordinate its activities with other like bodies around the world such as GSDI and Global Mapping for mutual benefit.

Progress towards the realisation of the future directions proposed in Tehran was most encouraging.

Executive Board Meetings

Board meetings have been held in conjunction with annual meetings in Tehran and Beijing. Additional Board meetings were held as follows:

- Japan hosted a meeting in Kobe November 1997 in conjunction with a meeting of the International Steering Committee for Global Mapping (ISCGM)
- Immediately preceding the 3rd Global Spatial Data Infrastructure Conference (GSDI3) Australia hosted a meeting in Canberra November 1998
- Australia also hosted a meeting immediately following the "The International Federation of Surveyors International Conference on Land Tenure and Cadastral Infrastructures for Sustainable Development" in Melbourne, October 1999.

At each meeting the Board assessed progress of the Committee's work and its working groups and provided guidance with their workplans. In addition the Board addressed items such as the definition of the Asia-Pacific Spatial Data Infrastructure, collaboration with other international SDI initiatives, and preparation for the 15th UNRCC-AP.

MAIN ACHIEVEMENTS OF PCGIAP

The main achievements of the Committee over the past three years are included below.

PCGIAP Executive/Secretariat

- Oversee the operations of PCGIAP and its working groups
- Publish the APSDI framework document - a definition of the Asia-Pacific Spatial Data Infrastructure (APSDI), Publication No.1, October 1998
- Represent PCGIAP at related international forums such as meetings of the International Steering Committee for Global Mapping (ISCGM) and GSDI Conferences
- Publish PCGIAP papers and present them at international SDI conferences
- Establish relations with similar international bodies for mutual benefit.

PCGIAP Working Groups

Working Group 1 - Regional Geodetic Network

The PCGIAP Regional Geodetic Network Working Group undertook a regional geodetic campaign in 1997 comprising VLBI, DORIS, SLR and GPS and a follow-on GPS campaign was carried out in November 1998. The 1997 campaign was held in close cooperation with APSG for VLBI and WPLTN for SLR, and with Geodesysea for GPS in 1998.

A further campaign was conducted in 1999 to extend GPS connections to the geodetic networks in individual countries unable to participate in the 1998 campaign, such as the Pacific nations, and to enhance the connection of local vertical datums to sea level. This work will be further extended in a 2000 campaign.

Up to seventeen countries contributed data and shared the technology. Results of the campaigns were presented at a regional geodesy workshop in Canberra in July 1998 and at a second workshop hosted by Vietnam in July 1999. A workshop to present the results of the 1999 campaign is planned in Mongolia in August 2000 and will address the development of transformation parameters and vertical datum unification strategies.

The definition of the regional horizontal datum is now complete with the agreement by PCGIAP at the 1999 meeting in Beijing that the ITRF reference frame and GRS80 ellipsoid will be used as the regional horizontal datum. PCGIAP also agreed that the values from the 1997 campaign should be used as the interim datum points for key permanent sites pending the development of site velocities in future campaigns.

Working Group 2 - Regional Fundamental Data

The PCGIAP Working Group 2 - Regional Fundamental Data (WG2) was formed at the 4th PCGIAP meeting in Tehran, Iran in February 1998 to build upon work done by the previous Working Group 4 - *Legislation and Administrative Arrangements for the Acquisition and Sharing of Spatial Data*. Working Group 4 had collated information from a questionnaire to member countries that proved valuable in beginning to appreciate the extent of the variety of issues, good practice in and between countries, and barriers to sharing data.

This body of work has been carried on and expanded by WG2 into a PCGIAP draft policy on sharing fundamental data. Comments from countries implementing a spatial

data infrastructure (Australia, USA, NZ, Canada, EUROGI) and from all PCGIAP members were incorporated into the PCGIAP policy. The draft policy can be found at: <http://www.permcom.apgis.gov.au/new-wgs/wg2/policy/policy.htm>

Other work conducted by WG2 includes the development and distribution of a technical questionnaire on regional fundamental datasets, to PCGIAP members. This questionnaire examined many issues including, member countries' production of fundamental data, the hardware used and barriers to sharing data. It supplemented a PCGIAP Taskforce questionnaire on GIS and related development needs. Seventeen of 55 member nations responded to the WG2 technical questionnaire, and analysis has been carried out for reporting during the Conference.

A pilot project on Administrative Boundaries has commenced comprising nine countries - Sri Lanka, India, Nepal, Bhutan, China, Mongolia, North Korea, South Korea and Japan. This project is a means of identifying issues associated with regional fundamental dataset creation within the APSDI - what is available, formats, structure and how this matches with Global Map specification.

Research on similar SDI projects elsewhere around the world - particularly the MEGRIN topographic prototype (PETIT) and administrative boundaries datasets - have shown there are many useful lessons the PCGIAP can learn from the European experience.

A discussion paper on how an APSDI Data Node would be established and how it would operate has been circulated. A draft reference model for an APSDI Data Node has also been developed. Contact points within China, Iran, Japan and Australia for a prototype Data Node network have been identified. Further work on a demonstration model is underway.

Further information on WG2 activities can be found at: <http://www.permcom.apgis.gov.au/new-wgs/new-wg2.htm>

Development Needs Taskforce

PCGIAP established the Taskforce to identify needs and seek funding options for members' GIS and related development and to improve participation of member countries in PCGIAP activities.

The Taskforce was divided into four sub-regions mainly because of the geographical diversity of the region, and each sub-region is chaired as follows: SE Asia - Malaysia; North Asia - Japan; West Asia - Iran; Oceania/Pacific - Australia.

As a first step in identifying GIS or SDI development needs the Taskforce designed a questionnaire in order to collect institutional and other SDI data of its members. The questionnaire was circulated by Taskforce members to all PCGIAP members in their sub-region and 33 responses out of 55 were received.

As well the sub-regions have undertaken other activities such as direct visits and conducted a Pacific area workshop that helped identify the issues for appropriate development needs projects. At the Pacific workshop the PCGIAP Pacific Group was formed to represent the special and unique interests of the 19 Pacific island member countries.

The PCGIAP Taskforce conducted a workshop in Canberra in September 1999 to analyse the responses to the questionnaire. A draft report from this workshop collated

analyses and presented initial outcomes for consideration by the Executive Board and the draft has been developed into a report for presentation at 15th UNRCC-AP and 6th PCGIAP meeting.

The main points emerging from an analysis of the questionnaire survey were:

- Countries that are either not participating in the PCGIAP or participating infrequently would prefer closer involvement by attending meetings and joining in working group activities
- The majority of countries in the region require SDI development support.

PERSONNEL

There have been a number of personnel changes to the Board and to country representation over the three years. Changes in the Board include:

- New Zealand was Secretary up to February 1997 at which time Australia took on this role. Mr Drew Clarke replaced Mr Brendan Godfrey as the Australian Secretary to the Committee in November 1997. New Zealand resigned from the Board in October 1998 and India was welcomed as a Board Member in April 1999.
- Mr Kunio Nonomura retired as Director-General of Japan's Geographical Survey Institute in 1999 and the new Director-General is Mr Motoyuki Kidokoro who replaced Mr Nonomura on the Board.
- In 1999 Thailand reverted back to representation on the Committee and Board through the Royal Thai Survey Department by Colonel Nukool Ratanakarn.
- The Philippines' representative and Board member Mr Jose Solis resigned as Administrator of NAMRIA in 1997 as did his replacement BGen Liberato Manuel two years later and this position is now filled by Engr. Mr Isidro S Fajardo.
- Mr Abbas Rajabifard resigned as Board Member for Iran at the commencement of doctoral studies at The University of Melbourne, Australia in 1999 and was replaced by Mr Saeid Noori Bushehri.
- Mr Kim Won-Ik retired as Director General of Korea's National Geography Institute in 1999 and Mr Mr Jae Joon HUH is his replacement on the Board.
- The Board welcomed Australia's Mr Peter Holland, Chair of Working Group 2 as an ex-officio Board Member in 1999.

Representing PCGIAP Mr Holland was elected Chair of the GSDI Steering Committee from November 1998 (GSDI3) to March 2000 (GSDI4). During that period the Committee worked closely with Mr Holland in the GSDI initiative.

Changes to country member representation have been included on the membership list in the PCGIAP web site.

PROMOTION AND PUBLICITY

The following items have supported the activities of the PCGIAP during the period:

- Production in October 1998 and wide distribution of Publication No.1 - a definition of the Asia-Pacific Spatial Data Infrastructure (APSDI) and placing it on the PCGIAP web site. The Committee continues to welcome comments on the definition of the APSDI.
- Production and wide distribution of a glossy brochure about the Committee in April 1999 which is the primary hardcopy promotional material about the Committee and

the brochure is also available on the PCGIAP web site. It may be subject to amendment following the 15th UNRCC-AP / 6th PCGIAP meeting.

- PCGIAP input from a regional perspective to the USA Federal Geographic Data Committee (FGDC) survey on National Spatial Data Infrastructures (NSDIs), that was conducted by Dr Harlan Onsrud.
- Arranging and hosting GSDI3 in Canberra November 1998.
- Establishment of a comprehensive web site through which PCGIAP receives considerable promotion - <http://www.permcom.apgis.gov.au/>.
The site includes:
 - PCGIAP meeting and working group reports
 - Member country contact details
 - PCGIAP Statutes
 - Resolutions of UNRCC-APs
 - Templates that enable PCGIAP Members to report on their national surveying, mapping and GIS activities, and on changes to member contact details
 - Links to related sites, such as GSDI Conferences, United Nations activities, Global Mapping and the ISO/TC211 site
 - Technical papers on PCGIAP activities.
 The Secretariat maintains and updates the web site which has been receiving around 125 hits per week in 2000.

PCGIAP representatives had a number of papers on PCGIAP activities published or presented at various conferences and seminars, including:

- *Recent Activities of the Permanent Committee on GIS Infrastructure for Asia and the Pacific* - GIS Asia Pacific Conference, Jakarta October 1997.
- *The Contribution of the Permanent Committee on GIS Infrastructure for Asia and the Pacific to a Global Spatial Data Infrastructure* - Global Spatial Data Infrastructure Conference Chapel Hill, North Carolina, October 1997. The paper also featured in the December 1997 edition of *Cartography, the Journal of the Mapping Sciences Institute, Australia*. This journal was distributed to all Permanent Committee Members in December 1997.
- *The development of a spatial data infrastructure in the Asia-Pacific region with special reference to Australia* - SDI 98 Conference - Ottawa, June 1998.
- *Activities of the Permanent Committee on GIS Infrastructure for Asia and the Pacific* - GIS User, June 1998.
- *The Permanent Committee on GIS Infrastructure for Asia and the Pacific and the Pacific Island Nations* - South Pacific Applied Geoscience Commission (SOPAC) Science, Technology and Resources (STAR) Session, Nadi Fiji, October 1999.

FUTURE ACTIVITIES OF THE PCGIAP

The outgoing Executive sees the following as primary activities over the next three years to the 16th UNRCC-AP.

- Continue with workplans of PCGIAP working groups in the fields of geodesy and fundamental data and advance the pursuit of donor funds for GIS/SDI development needs of member countries in support of sustainable development for individual nations and across the region
- Given formation of PCGIAP working groups for Cadastre and Geographical Names the Committee will aim to incorporate their activities into the development of the regional infrastructure

- Further develop relationships between PCGIAP and international scientific bodies and spatial data coordination bodies
- Promote PCGIAP initiatives and contribute to global SDI initiatives
- Develop a collaborative relationship with ESCAP's Space Technology Applications Section and where appropriate incorporate elements of Phase 2 of the UN ESCAP Regional Space Applications Program (RESAP2) into the regional infrastructure
- Maintain and enhance the PCGIAP web site including the system for monitoring UNRCC-AP resolutions
- Assist Japan in preparations for the 7th PCGIAP meeting to be held in Japan in 2001.

The above activities will significantly enhance development of the Asia-Pacific Spatial Data Infrastructure (APSDI) and bring it closer to full implementation.

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