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PROMOTION OF GLOBAL MAPPING PROJECT

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Promotion of Global Mapping Project

—Activities of the ISCGM Secretariat and the Japanese Government—

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ABSTRACT

Further promotion of Global Mapping, with the participation of about 147 countries and 15 regions as of July 2006, was clearly supported at the World Summit on Sustainable Development in 2002 and the Earth Observation Summit in 2003-2005. This paper summarizes the activities of the ISCGM secretariat and the Japanese government focusing on Global Mapping (the activities before 2003 are also summarized in the paper submitted to 16th UNRCC-AP (Hoshino et al., 2003)). The main issues are: activities at WSSD processes, cooperation with international partners, Global Mapping Partnership Program, capacity building, Global Mapping Forum, cooperation in data development and ISCGM activities.

1. INTRODUCTION

Global Mapping project is an international collaborative initiative through voluntary participation of national mapping organizations of the world, aiming to develop globally homogeneous geographic data set at the ground resolution of 1km. The Geographical Survey Institute (GSI) of Japan has been hosting the secretariat of the International Steering Committee for Global Mapping (ISCGM) since its establishment in 1996.

Primary objective of the Global Mapping project is to contribute to sustainable development through provision of basic framework geographic dataset. Now (as of May 2006) 162 countries and regions that correspond to 91% of the land area of the Earth are participating in the project. Among them, twenty-two countries' data have been completed and are downloadable through the Internet from the ISCGM website at <http://www.iscgm.org/>.

This paper summarizes the activities of GSI, Ministry of Land, Infrastructure and Transport (MLIT) and other ministries of Government of Japan as well as the activities of ISCGM from the secretariat's point of view, for promoting Global Mapping.

2. ISCGM MEETINGS

ISCGM consists of twenty members (as of July, 2006) who represent national mapping organizations and regional geographic information organizations; namely, Antarctica (SCAR), Australia, Bangladesh, Canada, China, Europe (EuroGeographics), France, India, Iran, Japan,

Kenya, Republic of Korea, Malaysia, Mexico, New Zealand, Niger, South Africa, United Kingdom and United States of America (in alphabetical order). The committee is chaired by Professor D. R. F. Taylor of Carleton University, Canada.

ISCGM has held its meetings nearly once a year at places all around the world. The tenth and eleventh ISCGM meetings were held in Ginowan, Okinawa, Japan in 2003 and in Bangalore, India in 2004, respectively. The twelfth ISCGM meeting took place in Cairo, Egypt in April 2005. Reported and discussed issues include mainly: status of Web portal development, acquisition of Consultative Status in UN, activities of ISCGM in Earth Observation Summit, potential links to other portals and data sets, the Third Global Mapping Seminar in Nairobi, activities of ISCGM on Indian Ocean Tsunami, improvement of Global Map Specifications (in WG2), Global raster data development (in WG4), treatment of commercial use of Global Map (in WG3), report from liaison organizations, current status of the verification of submitted Global Map data and progress report from participating countries. The twelfth meeting resolved many pending issues and made a new starting point although there still remain many issues to further promote and accelerate the development of Global Map.

3. ACTIVITIES AT WSSD AND EOS PROCESSES AND THEIR RESULT

3.1 WSSD (WORLD SUMMIT ON SUSTAINABLE DEVELOPMENT)

Since one of the important outcomes of the project is to achieve sustainable development through wider use of its products for sound decision-making ISCGM actively participated in the World Summit on Sustainable Development (WSSD or Johannesburg Summit) and its preparatory processes. As a result, the adopted *Plan of Implementation of WSSD* emphasizes the necessity for promoting development and wider use of earth observation technologies, including global mapping and calls for encouraging initiatives and partnerships for global mapping. Further, Global Mapping became a registered WSSD Type 2 initiative with the goal of completion of global coverage by the year 2007. Global Mapping was also included in *Koizumi Initiative (Concrete Actions of Japanese Government to be taken for Sustainable Development - Towards Global Sharing)*, which was introduced in a plenary session of WSSD.

3.2 EOS (EARTH OBSERVATION SUMMIT)

Development of global geographic framework data is indispensable not only to cope with global environmental problems, but also to integrate various earth observation data. Integration of various earth observation data with other data (i.e. social data) is essential for enhancing their value to cope with various problems, in which geographic framework data are expected to play a vital role as glue.

Therefore ISCGM actively participated in Group on Earth Observation (GEO), and witnessed the adoption of "The Global Earth Observation System of Systems(GEOSS)" 10-Year Implementation Plan at the Third Earth Observation Summit held in Brussels, Belgium, in February 2005. Accordingly, ISCGM and its members participated in GEO-I meeting in May 2005 and GEO-II meeting in December 2005 focusing on the value of Global Map as a basis of integration of both earth observation data and socio-economic data.

4. COOPERATION WITH PARTNERSHIP INITIATIVES

ISCGM has established liaison status and cooperative relationships with other relevant organizations and initiatives, such as SCAR, EuroGeographics, UN Cartographic Section, UNECACODI-GEO, UNEP/DEWA, UNU, GSDI, ICA, ISO/TC211, ISPRS, PAIGH, PCGIAP, PCIDEA and Digital Earth. To achieve the goal effectively and efficiently, further enhancement of cooperation and collaboration as well as increasing the number of partners will be necessary.

As an example, the partnership between ISCGM and Global Spatial Data Infrastructure (GSDI) is introduced. GSDI addresses “coordinated actions of nations and organizations that promote awareness and implementation of complementary policies, common standards and effective mechanisms for the development and availability of interoperable digital geographic data and technologies to support decision making at all scales for multiple purposes.” It holds its conference nearly every year. Recent ISCGM meetings share the same venues and occasion with GSDI conferences to facilitate the participation in both meetings. This conference arrangement raise awareness of Global Mapping among GSDI community as the framework data development activity at global scale. It is recognized that cooperation between ISCGM and GSDI is mutually beneficial and ISCGM is participating in the GSDI Association as an ex-officio member.

5. GLOBAL MAPPING PARTNERSHIP PROGRAM AND GLOBAL MAPPING SEMINAR

5.1 GLOBAL MAPPING PARTNERSHIP PROGRAM (GMPP)

Ministry of Land, Infrastructure and Transport (MLIT), Government of Japan started the "Global Mapping Partnership Program (GMPP)" from FY2002. GMPP aims to further strengthen partnerships to promote Global Mapping activities. The comprehensive partnership between developing countries and developed countries, Global Mapping project and other sister initiatives, and data providers and users are included.

To realize the above purposes, GMPP includes following activities:

- 1) Holding international workshops for Global Mapping (meetings of participating countries);
- 2) Holding seminars for technical transfer to developing countries;
- 3) Dispatching experts to developing countries for technical transfer.

GMPP has currently three main focus areas.

- 1) Promotion of Global Mapping activities in Africa is considered important. Since some of African countries have not participated in the Global Mapping project yet, it is crucial to enroll them in the Global Mapping project to achieve whole GM coverage of Africa while supporting them technically.
- 2) Coordination with sister SDI initiatives is required to efficiently implement Global Mapping activities to avoid overlaps and gaps of data development.
- 3) Since enhanced dialogues between data providers and data user bring user-oriented perspectives to Global Mapping implementation, the Program aims to invite representatives of users (both actual and potential) of Global Map data to its activities.

GMPP is planned to continue its activities till 2007 at least, which will be the target year of the

global coverage of Global Map, as pledged at WSSD in 2002.

5.2 GLOBAL MAPPING SEMINAR IN NAIROBI, DAKAR

Among the activities of GMPP implemented to date, Global Mapping Seminars are the most remarkable ones, because they are the valuable technical transfer opportunities for Global Mapping in Africa. So far, Global Mapping seminar was held in Nairobi, Kenya(2002, 2003, 2004) and Dakar, Senegal(2005). Next Seminar will be held in Dakar in Nov.2006. The outline of the Seminars were as follows.

1) Global Mapping Seminar in NAIROBI

"Third Global Mapping Seminar in Nairobi" was held at Regional Center for Mapping of Resources for Development (RCMRD) on 8-11 November 2004 attended by 19 specialists from 17 African countries,. The objectives of the seminar were to further enlighten the Global Mapping project and to improve technology for the Global Mapping in African region through lectures related to policy and technological perspectives and policy for the use of Global Map data.

Organizers of the Third Seminar in Nairobi: MLIT, ISCGM, RCMRD

Supporting organizations: Survey of Kenya (SOK), Kenya Institute of Surveying and Mapping (KISM), Japan International Cooperation Agency (JICA)

Countries of the participants: Botswana, Chad, Democratic Republic of Congo, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Mozambique, Seychelles, Sudan, Swaziland, Tanzania, Uganda, Zambia, Zanzibar and Zimbabwe.

2)Global Mapping Seminar in Dakar

"First Global Mapping Seminar in Dakar" was held at Direction des Travaux Géographiques et Cartographiques(DTGC) on 21-22 November 2005 attended by 8 specialists from 5 African countries. The objectives of the seminar were to raise awareness of the significance of Global Mapping project and to enhance project participation and to exchange information among NMOs in West Africa.

Organizers of the First Seminar in Dakar: MLIT, ISCGM, DTGC

Supporting organizations: JICA

Countries of the participants: Gambia, Mali, Mauritania, Morocco and Senegal

6. CAPACITY BUILDING FOR DEVELOPING GLOBAL MAP

GSI has been conducting JICA group training courses on Global Mapping-Contribution to Global Mapping Development by GIS. The lecturers of this course are specialists in environmental, cartographic and surveying fields. Since 2004, this course aims at capacity building to promote Global Mapping project through transferring technologies of remote sensing and Geographic Information Systems (GIS). The course is composed of lectures, field trips and practices. It is about two-and-half month long course attended by 6-8 participants every year.

The objective of the practice is to develop the prototype of the Global Map data of the

participants' countries using the source data they bring from their countries. Because the practice is conducted by the technical contact persons of the secretariat of ISCGM, this practice helps to enhance mutual communication between the developers and the secretariat. The members of the secretariat of ISCGM conduct lectures and practices also in other JICA training courses held in GSI and this helps to raise awareness and disseminate understanding on the importance of the Global Mapping.

7. GLOBAL MAPPING FORUM

In November 1996, the United Nations held "The International Seminar on Global Mapping for Implementation of Multinational Environmental Agreements" under joint auspices of the University of California, Santa Barbara and GSI. Participants of the seminar adopted the *Santa Barbara Statement* that included promotion of Global Mapping under international cooperation and creation of Global Mapping Forum to exchange views and information between users and providers of the Global Map.

Based on this statement, GSI and ISCGM organized "Global Mapping Forums" in Gifu, Japan in November 1997, in Sioux Falls, United States in June 1998 and in Hiroshima, Japan in November 2000, Okinawa, Japan in July 2003.

At Global Mapping Forum 2003 in Ginowan, Okinawa, Japan, over 200 participants from 41 countries and 7 international organizations participated to discuss the progress of Global Map and to make plans for the future.

Contents of the Okinawa Declaration on Global Map are as follows:

Over 200 participants from 41 countries and 7 international organizations met in the City of Ginowan, Okinawa, Japan, at Global Mapping Forum 2003 to discuss the progress of Global Map and to make plans for the future. The participants adopted the following statement at the closing session of the Forum on the 14th of July 2003.

- 1) Recalling that during the Earth Summit in 1992, the nations of the world committed to the vision of globally sustainable development and adopted a plan of action – Agenda 21
- 2) Recalling also that in 1994, the idea of the International Steering Committee for Global Mapping (ISCGM) was introduced in Izumo, Japan, to create, through technical cooperation, a digital map of the world, a Global Map, by the year 2000, to support the implementation of Agenda 21, and ISCGM was formally established in 1996
- 3) Recalling further that a statement was made at Global Mapping Forum 2000 in Hiroshima, Japan, celebrating the release of Global Map Version 1 and restating the willingness to cooperate with nations and organizations for the creation, maintenance, and promotion of Global Map
- 4) Recalling furthermore that the need for Global Map and the activities of ISCGM were recognized and supported at the World Summit on Sustainable Development in Johannesburg, South Africa, in August 2002 and recorded in the official documents of the Summit, where ISCGM was recognized as a type two implementing agency

We strongly support the goal of ISCGM to develop a global map for the entire land surface of the earth. We express our gratitude to 130 countries which have already committed themselves to the development and maintenance of Global Map.

At the same time, we recognize the need to further strengthen coordination with the users of Global Map concerned with sustainable development in a variety of application situations. To this end, we will develop new methods to make Global Map more easily available on the World Wide Web, and to facilitate linkages with other global data sets.

We also call on all those countries not yet committed to Global Map to join and help make Global Map a truly global map of the world.

We greatly appreciate the hospitality of the citizens of Okinawa Prefecture. We reconfirm the importance of sustaining and respecting the splendor of the global environment symbolized by the magnificence of the Islands of Okinawa.

By having complete Global Map coverage by 2007 we will provide a spatial framework to facilitate the actions of the countries of the world both individually and collectively to conserve our fragile environment and make the development of our societies more viable and sustainable for future generations. We acknowledge with thanks the support and leadership of the Government of Japan in this respect.

8. SUPPORT FOR DEVELOPING GLOBAL MAP OF OTHER COUNTRIES BY JAPAN AS A "LEVEL A" PARTICIPATING COUNTRY IN GLOBAL MAPPING

There are three levels of participation, i.e. Level A, B and C in the Global Mapping project depending on the economic and technical conditions of different countries. Japan participates in the project as Level A country. We develop data of Japan as well as taking a role of developing data of Level C countries in cooperation with National Mapping Organizations (NMOs) of the countries which do not have the capacity to produce data by themselves.

To this end, GSI started a data development scheme in 1998 for developing countries mainly in Asia and the Pacific region. Under the scheme GSI produces Global Map data using geographical information such as paper maps provided by relevant countries. So far, Global Map data of the following countries have been developed: Thailand, Philippines, Vietnam and Kazakhstan in 1998; Mongolia Kyrgyz and Bangladesh in 1999; Laos and Nepal in 2000; Myanmar and Sudan in 2001; Senegal and Liberia in 2002; Republic of Congo, Honduras and Swaziland in 2003; and Armenia, Azerbaijan, Bolivia, Oman and Tajikistan in 2005.

9. Issues to be addressed for the future Global Mapping

The ISCGM recognizes following issues and that need be addressed for further implementation of Global Mapping:

- a) Revision of the specification and format of Global Map (to be discussed in Working Group 2 of ISCGM);
- b) Issues about commercial use such as licence agreement (to be discussed in Working group 3 of ISCGM);

c) Global land cover data development in a unified manner by international cooperation of NMOs under ISCGM initiatives (GLCNMO: Global Land Cover by National Mapping Organizations) (being implemented by Working group 4).

d) Cooperation for the utilization of high-resolution remotely sensed data for Global Mapping purpose; and

e) Development of Global Mapping portal site to facilitate the use of Global Map and other data sets together to address issues of sustainable development, urgent disaster recovery, among other applications.

REFERENCE

Yoshihisa Hoshino, Hiromichi Maruyama, Hiroshi Masaharu, Mitsuo Iwase, Toru Nagayama, Otohiko Shimizu and Hidenori Fujimura (2003): Promotion of Global Mapping Project - Activities of the ISCGM Secretariat and Japanese Government -, Paper submitted to the 16th United Nations Regional Cartographic Conference for Asia and the Pacific, Okinawa, Japan, United Nations.

WEB SITES

Agenda 21	http://www.un.org/esa/sustdev/agenda21.htm
Global Mapping and ISCGM	http://www.iscgm.org
GSDI	http://www.gsdi.org/
WSSD (Official website by UN)	http://www.johannesburgsummit.org/
Group on Earth Observations	http://earthobservations.org/