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# **Responsibility of NMOs for Sustainable Development**

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## **Paper 2.3**

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## Abstract

The World Summit on Sustainable development (WSSD) was held in Johannesburg in August 2002, ten years after the Earth Summit (UNCED). One of the outcomes of WSSD is the “WSSD Plan of Implementation”, which includes two paragraphs referring to geographic information and global mapping. In response to this, NMOs should contribute within their capacity to sustainable development through global cooperation and collaboration. Global Mapping led by ISCGM was registered as Type2 partnership initiative in WSSD, which is a concrete action for sustainable development in line with “WSSD Plan of Implementation”. ISCGM asks NMOs around the world to contribute to this initiative. This would be a great contribution to sustainable development as well as their responsibility.

## Global Environment and Sustainable Development

Concern on Global Environment Issues, such as global warming, deforestation, and desertification, has become apparent since late 1980s. This seemed to be mainly attributed to human activities, which are magnified by the use of highly advanced science and technology and are overwhelming Earth capacity. In such a background United Nations Conference on Environment and Development (UNCED) was held in Rio de Janeiro, Brazil in 1992.

As a result of UNCED, “Agenda21”, an action program for addressing global environment challenges while continuing to support sustainable economic development, was adopted. This was an epoch-making program in the sense that it made people around the world aware of the importance of “sustainable development”. Now, the concept of “sustainable development” seems to be one of baseline policies on which all nations in the world seek to develop in the 21<sup>st</sup> century. Consequently, national mapping organizations (NMOs) must think about their futures in line with this important concept as well.

Agenda21 includes descriptions on data and information here and there which might guide NMOs. Chapter 40, entitled “Information for Decision Making”, emphasizes the need to strengthen data collection activities and improve the evaluation and analysis of data using new technologies such as geographic information systems.

## WSSD and NMOs

Although Agenda 21 is an action program, it shows us rather general principles or directions. The ways to implement various items described in it are left to nations and people in the world. Through United Nations General Assembly Special Session (UNGASS) held in New York in 1997 five years after UNCED, the World Summit on Sustainable Development (WSSD) was held from August 26 to September 4, 2002, in Johannesburg, South Africa. Main objectives of WSSD were to review the Agenda21 implementation and to make concrete plans of action for sustainable development.

As a result of WSSD, “WSSD Plan of Implementation” was adopted. This document refers to geographic information in the following two paragraphs.

132. Promote the development and wider use of earth observation technologies, including satellite remote sensing, global mapping and geographic information systems, to collect quality data on environmental impacts, land use and land use changes, including through urgent actions at all level to:

- (a) Strengthen cooperation and coordination among global observing systems and research programmes for integrated global observations, taking into account the need for building capacity and sharing of data from ground-based observations, satellite remote sensing and other sources among all countries;
- (b) Develop information systems that make the sharing of valuable data possible, including the active exchange of Earth observation data;
- (c) Encourage initiatives and partnership for global mapping.

133. Support countries, particularly developing countries, in their national efforts to:

- (a) Collect data that are accurate, long-term, consistent and reliable;
- (b) Use satellite and remote-sensing technologies for data collection and further improvement of ground-based observations;
- (c) Access, explore and use geographic information by utilizing the technologies of satellite remote sensing, satellite global positioning, mapping and geographic information systems.

Besides “WSSD Plan of Implementation”, more than 200 voluntary, non-negotiated partnerships/initiatives, aimed at implementing sustainable development, were registered as Type2 partnership initiative during the Summit process. Although Implementation Plan just shows us general guidelines like Agenda21, these Type2 partnerships/initiatives make concrete implementations on items described in “WSSD Plan of Implementation”. In this regard, this is complementary to the outcome of WSSD, and shows us the development in the ten years after UNCED. Global Mapping led by International Steering Committee for Global Mapping (ISCGM) is registered as the initiative implementing paragraph 132 described above.

## Action for Sustainable Development

When NMOs do something for sustainable development, “WSSD Plan of Implementation” and framework of Type2 partnership/initiative are a guideline to move forward. NMOs can start a new initiative for sustainable development in accordance with paragraph 132 and 133 of “WSSD Plan of Implementation”. Or they can join Global Mapping initiative and work actively to attain their objectives. The former might take a long time as is shown later for the case of ISCGM. The latter is an easy way for NMOs to contribute to sustainable development.

Global Mapping is just an initiative to develop a globally homogeneous geographic data set at ground resolution of 1km through cooperation among NMOs around the world. Through this initiative, however, they can place efforts to establish National Spatial Data Infrastructure (NSDI) within a global framework, and can relate closer with government organizations in others fields, such as environment, space technology and development. These domestic and international partnerships would make NMOs invaluable and help them to survive in 21<sup>st</sup> century.

Global Mapping goes quite well in terms of participation and data development. As of 10 June, 2003, 129 NMOs around the world participated in this project and Global Map data developed by 12 NMOs are available at the ISCGM Web site and those by 31 NMOs are under preparation to put on the Internet. Data use of Global Map, however, is not so great as expected. This might result from the fact that the total area where the Global Maps are available is only 9% of the total land area of the Earth.

Global Mapping Forum, which aims to get together data producers and users and to provide an opportunity to exchange information and views on Global Map, started in 1997, and the 4<sup>th</sup> one is to be held from 12 to 14 July in Okinawa, Japan. In addition, it is essential that each NMO participating in Global Mapping makes every effort to further enhance the use of Global Map domestically and internationally. Land use/cover data of the Global Map are expected to be used for the estimation of exhaustion and absorption of carbon dioxide due to forest and land use change. The Global Map is also expected to be used for master planning on infrastructure, regional development, or large-scale disaster mitigation. These areas are not the fields of NMOs, but only through interacting people in those fields, the Global Map will be used effectively and be more valuable. Through such effort, NMO would be more stable and promising.

## Experience by ISCGM

In this chapter, the history of ISCGM will be reviewed so that NMOs who plan to start a new initiative may advance faster and more effectively.

### 1991: Prototype of the Global Map

Geographical Survey Institute of Japan (GSI) organized a domestic committee in 1990 to discuss the role of the surveying and mapping communities in global environmental issues. The committee made the report "Watching the Earth", which points out that one of the GSI's most urgent tasks is the production of a global environmental basic map of 1:1 million scale both digital and analog forms. This is exactly the prototype of the Global Map.

### 1992: Formalization of Global Mapping project

Ministry of Construction of Japan (MOC, now MLIT (Ministry of Land, Infrastructure, and Transport) due to reorganization of ministries which took place in 2001) formalized this idea as Global Mapping project, which is a project to prepare global geographic information covering the entire Earth land area in the scale of 1:1 million or ground resolution of one kilometer with consistent standards through international cooperation.

### 1992-1994: Proposals at the International Conferences

- a. Thirteenth Asian Conference on Remote Sensing (Oct., 1992)
- b. Working Group Meeting of the Committee on Earth Observation Satellite (Oct., 1992)
- c. Fifth UNRCC for the Americas (Jan., 1993)

- d. Petit Forum on Global Mapping (Mar., 1993)
- e. Thirteenth UNRCC for Asia and the Pacific (May, 1994)

#### **1993-1994: Detailed Planning of Global Mapping in Japan**

- a. Roundtable Committee on Global Mapping chaired by Dr. J. Kondo.
- b. Working Group for the Committee chaired by Dr. Y. Honda.
- c. Research Committee on Global Mapping chaired by Dr. S. Tsuru.

#### **1994-1996: International Conference on Global Mapping**

- a. The First International Workshop on Global Mapping in Izumo, Japan (Nov., 1994)

*The workshop resolved that Global Map development should proceed with a goal of completion by the year 2000.*

- b. Cambridge Conference for National Mapping Organizations (Jul., 1995)
- c. The Second International Workshop on Global Mapping in Tsukuba, Japan (Feb., 1996)

*International Steering Committee for Global Mapping (ISCGM) was established. The First Meeting of the ISCGM.*

#### **1996-1998: Call for Participation with United Nations**

- a. Interregional Seminar on Global Mapping for the Implementation of Multinational Environmental Agreements in Santa Barbara, USA (Nov., 1996)

*Santa Barbara Statement (SBS) including recommendation of creation of a Global Mapping Forum is adopted.*

- b. The Fourteenth UNRCC for Asia and the Pacific in Bangkok, Thailand (Feb., 1997)
- c. The Sixth UNRCC for the Americas in New York, USA (Jun., 1997)
- d. The Fifth Meeting of Commission on Sustainable Development (CSD5) (Apr., 1997) and Nineteenth Special Session of the United Nations General Assembly (UNGASS) (Jun., 1997)

*SBS was submitted jointly by Japan and USA, and the adopted document at UNGASS includes a paragraph that states the necessity of Global Mapping.*

- e. The Second Meeting of GSDI in Chapel Hill, USA (Nov., 1997)
- f. Global Mapping Forum '97 in Gifu, Japan (Nov., 1997)
- g. Global Mapping Forum '98 in Sioux Falls, USA (Jun., 1998)
- h. Call for Participation with United Nations

*Prof. Estes, former chair of the ISCGM, sent the letter calling for participation in Global Mapping to NMOs around the world with the recommendation letter of Mr. H. Habermann, Director of UN Statistic Division.*

- i. GSDI3 in Canberra, Australia (Nov., 1998)
- j. ISCGM5 in Canberra, Australia (Nov., 1998)

*ISCGM adopted Global Map Specifications.*

**1998-2000: Implementation**

- a. Cambridge Conference (Jul., 1999)
- b. ISCGM6 in Cambridge in UK (Jul., 1999)
- c. ISCGM7 and GSDI4 in Cape Town, South Africa (Mar., 2000)
- d. Global Mapping Forum 2000 in Hiroshima, Japan (Nov., 2000)

*The first release of the Global Map of five countries.*

**2001-2002: Towards WSSD**

- a. ISCGM8 and GSDI5 in Cartagena, Columbia (Mar., 2001)
- b. CSD9 in New York (Apr., 2001)
- c. Regional Preparatory Committee Meeting for North-East Asia in Beijing, China (Jul., 2001)
- d. Regional Preparatory Committee Meeting for Asia and the Pacific in Phnom Penh, Cambodia (Nov., 2001)
- e. The Second Meeting of the Preparatory Committee (PrepCom2) in New York (Jan., 2002)
- f. PrepCom3 in New York (Mar., 2002)
- g. PrepCom4 in Bali, Indonesia (May, 2002)
- h. WSSD in Johannesburg in South Africa (Aug., 2002)

*Global Mapping is included in the adopted document "WSSD Plan of Implementation." Global Mapping is registered as Type2 partnership initiative.*

- i. ISCGM9 and GSDI6 in Budapest, Hungary (Sep., 2002)

**Towards 2007**

In the registration of Type2 partnership initiative, ISCGM has expressed its plan to complete global land area coverage of the Global Map by the year 2007 under partnerships with NMOs, relevant academic societies and international organizations. ISCGM also plans to update land use/cover and vegetation layers of the Global Map taking full advantage of remotely sensed data because these layers reflect the environmental situation very well. ISCGM asks NMOs around the world to work with to attain this goal. That will be a great contribution to sustainable development as well as responsibility of them.

**References**

- Maruyama, Hiromichi (1998): History of Activities for Getting International Agreement on the Development of the Global Map, Bulletin of the Geographical Survey Institute, 44, 63-90.
- Masaharu, Hiroshi and Akiyama, Minoru (2003): Publicity Activities of Global Mapping at Johannesburg Summit and Outcomes of the Summit, Bulletin of the Geographical Survey Institute, 49, 59-69

## Web sites

ISCGM <http://www.iscgm.org>

WSSD Plan of Implementation

[http://www.un.org/esa/sustdev/documents/WSSD\\_POI\\_PD/English/POIToc.htm](http://www.un.org/esa/sustdev/documents/WSSD_POI_PD/English/POIToc.htm)

Johannesburg Summit (Official homepage by UN) <http://www.johannesburgsummit.org>

Type2 Partnerships/Initiatives <http://www.un.org/esa/sustdev/partnerships/Information.htm>