

3. Outcome of Global Mapping Project

3-1. Global Map Data

Global Map data include “Global Map National/Regional Version” developed by National Geospatial Information Authorities (NGIAs) of respective countries and “Global Map Global Version” developed by the secretariat of ISCGM in collaboration with Geospatial Information Authority of Japan (GSI), Chiba University, and NGIAs of respective countries and regions.

(1) Global Map National/Regional version

Global Map National/Regional Version is digital data equivalent to 1:1 million scale or larger one which consist of eight layers in total: four layers of vector data (Transportation, Drainage, Boundaries and Population centers) and four layers of raster data (Elevation, Vegetation, Land cover and Land use).

Global Map data of five countries: Japan, Nepal, Lao P.D.R., Sri Lanka and Thailand were those first released in 2000, complying with Global Map Specifications Version 1. This version applies VPF (Vector Product Format) which was used in 1990s as a format of global data such as VMAP. Further, Global Map data in SHP (Shape) format started to be released as a user-friendly format according to the resolution of the 14th meeting of ISCGM in 2008. As the result, Global Map data complying with Global Map Specifications Version 1 have been released for 76 countries and regions by 2011.

Since VPF format became obsolete as data exchange format for GIS software, Global Map Specifications Version 2 and Global Map Application Schema conforming to GML3.2.1 standardized by ISO/TC211 as ISO19136 (Geography Markup Language: GML3.2.1) were defined for further development and provision of Global Map data. Global Map data developed in line with Global Map Specifications Version 2 was first released in 2010.

Totally, Global Map data (National/Regional) version of 114 countries and eight regions have been released by the conclusion of Global Mapping Project in 2017 (Table 3-1-1).

Table 3-1-1 Released Global Map data (Global Map National/Regional version)

Country/Region	Version 1									Version 2								Website for Release	
	Release year	Transport	Boundary	Drainage	Population Centres	Elevation	Vegetation	Land Cover	Land Use	Release year	Transport	Boundary	Drainage	Population Centres	Elevation	Vegetation	Land Cover		Land Use
Japan	2000	v1	v1	v1	v1	v1	v1	v1	v1	2011	v2	v2	v2	v2					Website of own country
Lao People's Democratic Republic	2000	v1	v1	v1	v1	v1	v1	v1	v1	2013	v2	v2	v2	v2					ISCGM
Democratic Socialist Republic of Sri Lanka	2000	v1	v1	v1	v1	v1	v1	v1	v1	2013	v2	v2	v2	v2					ISCGM
Federal Democratic Republic of Nepal	2000	v1	v1	v1	v1	v1	v1	v1	v1	2016	v2	v2	v2	v2					ISCGM
Kingdom of Thailand	2000	v1	v1	v1	v1	v1	v1	v1	v1	--									ISCGM
Republic of the Philippines	2000	v1		v1	v1	v1	v1	v1	v1	--									ISCGM
People's Republic of Bangladesh	2001	v1	v1	v1	v1					2012	v2	v2	v2	v2					ISCGM
Mongolia	2001	v1	v1	v1	v1	v1	v1	v1	v1	2013	v2	v2	v2	v2					ISCGM
Republic of Colombia	2001	v1	v1	v1	v1	v1	v1	v1	v1	--									ISCGM
Australia	2001	v1	v1	v1	v1	v1	v1	v1	v1	--									Website of own country
Republic of Panama	2002	v1	v1	v1	v1	v1	v1	v1	v1	--									ISCGM
Republic of Kenya	2002	v1	v1	v1	v1	v1	v1	v1	v1	--									ISCGM
Republic of Botswana	2003	v1	v1	v1	v1	v1	v1	v1	v1	2012	v2	v2	v2	v2					ISCGM
Burkina Faso	2003	v1	v1	v1	v1					2013	v2	v2	v2	v2					ISCGM
Kyrgyz Republic	2003	v1	v1	v1	v1	v1	v1	v1	v1	2016	v2	v2	v2	v2					ISCGM
Republic of Kazakhstan	2003	v1	v1	v1	v1	v1	v1	v1	v1	--									ISCGM
United Mexican States	2003	v1	v1	v1	v1	v1	v1	v1	v1	--									ISCGM
Republic of the Union of Myanmar	2003	v1	v1	v1	v1	v1	v1	v1	v1	--									ISCGM
Kingdom of Swaziland	2004	v1	v1	v1	v1	v1	v1	v1	v1	2016	v2	v2	v2	v2					ISCGM
Independent State of Samoa	2004	v1	v1	v1	v1	v1	v1	v1	v1	--									ISCGM
Islamic Republic of Iran	2005	v1	v1	v1	v1	v1	v1	v1	v1	2013	v2	v2	v2	v2					ISCGM
Former Yugoslav Republic of Macedonia	2006	v1	v1	v1	v1	v1	v1	v1	v1	2011	v2	v2	v2	v2					ISCGM/EGM
Hashemite Kingdom of Jordan	2006	v1	v1	v1	v1	v1	v1	v1	v1	2012	v2	v2	v2	v2					ISCGM
Republic of Latvia	2006	v1	v1	v1		v1	v1	v1	v1	2012	v2	v2	v2						ISCGM/EGM
Tristan da Cunha	2006	v1	v1	v1	v1	v1				--									ISCGM
Argentine Republic	2006	v1	v1	v1	v1					--									ISCGM
Antarctica	2006	v1	v1	v1	v1					--									ISCGM
Republic of Lebanon	2007	v1	v1	v1	v1					2012	v2	v2	v2	v2					ISCGM
Federative Republic of Brazil	2007	v1	v1	v1	v1	v1				--									ISCGM
Malaysia	2007	v1	v1	v1	v1	v1	v1	v1	v1	2012	v2	v2	v2						ISCGM
Kingdom of Bahrain	2007	v1	v1	v1	v1	v1			v1	2012	v2	v2	v2	v2					ISCGM
Republic of Niger	2007	v1	v1	v1	v1					2013	v2	v2	v2	v2					ISCGM

Country/Region	Version 1									Version 2								Website for Release	
	Release year	Transport	Boundary	Drainage	Population Centres	Elevation	Vegetation	Land Cover	Land Use	Release year	Transport	Boundary	Drainage	Population Centres	Elevation	Vegetation	Land Cover		Land Use
Oriental Republic of Uruguay	2007	v1	v1	v1	v1		v1			2013	v2	v2	v2	v2					ISCGM
Commonwealth of Dominica	2007	v1	v1	v1	v1	v1				2013	v2	v2	v2	v2					ISCGM
Kingdom of Saudi Arabia	2007	v1	v1	v1	v1	v1	v1	v1	v1	2013	v2	v2	v2	v2					ISCGM
Canada	2007	v2	v2	v2	v2					2013	v2	v2	v2	v2					Website of own country
New Zealand	2007	v1	v1	v1	v1	v1			v1	2014	v2	v2	v2	v2					ISCGM
Republic of Cuba	2007	v1	v1	v1	v1	v1	v1	v1	v1	2016	v2	v2	v2	v2					ISCGM
Republic of South Africa	2007	v1	v1	v1	v1	v1	v1	v1	v1	2016	v2	v2	v2	v2					ISCGM
People's Democratic Republic of Algeria	2007	v1	v1	v1	v1	v1	v1	v1	v1	2016	v2	v2	v2	v2					ISCGM
India	2007	v1	v1	v1	v1					2016	v2	v2	v2	v2					ISCGM
Socialist Republic of Viet Nam	2007	v1	v1	v1	v1	v1	v1	v1	v1	2016	v2	v2	v2	v2	v2	v2	v2	v2	ISCGM
Republic of Ghana	2007	v1	v1	v1	v1	v1	v1	v1	v1	--									ISCGM
Republic of Singapore	2007	v1	v1	v1	v1					--									ISCGM
Republic of Guatemala	2007	v1	v1	v1	v1	v1	v1	v1	v1	--									ISCGM
The Republic of the Sudan	2007	v1	v1	v1	v1	v1	v1	v1	v1	--									ISCGM
Republic of Indonesia	2007	v1	v1	v1	v1					--									ISCGM
Republic of Senegal	2008	v1	v1	v1	v1					2011	v2	v2	v2	v2	v2				ISCGM
Islamic Republic of Pakistan	2008	v1	v1	v1	v1	v1			v1	2012	v2	v2	v2	v2					ISCGM
Republic of Azerbaijan	2008	v1	v1	v1	v1					2012	v2	v2	v2	v2					ISCGM
Brunei Darussalam	2008	v1	v1	v1	v1					2012	v2	v2	v2	v2					ISCGM
Republic of Guinea-Bissau	2008	v1	v1	v1	v1	v1			v1	2013	v2	v2	v2	v2					ISCGM
Georgia	2008	v1	v1	v1	v1	v1		v1		2013	v2	v2	v2	v2					ISCGM/EGM
Sultanate of Oman	2008	v1	v1	v1	v1	v1			v1	2013	v2	v2	v2	v2					ISCGM
Republic of Mozambique	2008	v1	v1	v1	v1				v1	2013	v2	v2	v2	v2					ISCGM
Romania	2008	v1	v1	v1	v1					2013	v2	v2	v2	v2					ISCGM/EGM
Federal Democratic Republic of Ethiopia	2008	v1	v1	v1	v1	v1		v1		2013	v2	v2	v2	v2					ISCGM
Republic of Honduras	2008	v1	v1	v1	v1	v1			v1	2013	v2	v2	v2	v2					ISCGM
United States of America	2008	v1	v1		v1					2014	v2	v2	v2	v2	v2				Website of own country
Republic of Moldova	2008	v1	v1	v1	v1					2015	v2	v2	v2	v2					ISCGM/EGM
Republic of Nicaragua	2008	v1	v1	v1	v1	v1	v1	v1	v1	2016	v2	v2	v2	v2					ISCGM
Saint Vincent and the Grenadines	2008	v1	v1	v1	v1	v1	v1	v1	v1	2016	v2	v2	v2	v2					ISCGM
Republic of Congo	2008	v1	v1	v1	v1					2016	v2	v2	v2	v2					ISCGM
Independent State of Papua New Guinea	2008	v1	v1	v1	v1	v1	v1	v1	v1	2016	v2	v2	v2	v2					ISCGM
Kingdom of Bhutan	2008	v1	v1	v1	v1	v1	v1	v1	v1	2016	v2	v2							ISCGM

Country/Region	Version 1									Version 2								Website for Release	
	Release year	Transport	Boundary	Drainage	Population Centres	Elevation	Vegetation	Land Cover	Land Use	Release year	Transport	Boundary	Drainage	Population Centres	Elevation	Vegetation	Land Cover		Land Use
Hong Kong Special Administrative Region of the People’s Republic of China	2008	v1	v1	v1	v1	v1	v1	v1	v1	2013	v1	v1	v1	v1					ISCGM
Republic of Chile	2008	v1	v1	v1	v1					--									ISCGM
Palestine	2008	v1	v1		v1					--									ISCGM
Belize	2008	v1	v1	v1	v1					--									ISCGM
Democratic Republic of the Congo	2008	v1	v1	v1	v1	v1			v1	--									ISCGM
Saint Lucia	2008	v1	v1	v1	v1	v1	v1	v1	v1	--									ISCGM
Syrian Arab Republic	2008	v1	v1	v1	v1	v1	v1	v1	v1	--									ISCGM
Republic of Tunisia	2008	v1	v1	v1	v1	v1	v1	v1	v1	--									ISCGM
Republic of Bulgaria	2009	v1	v1		v1					2010					v2	v2	v2	v2	ISCGM/EGM
Republic of Mauritius	2009	v1	v1	v1	v1					--									ISCGM
Republic of Korea	2011	v1	v1	v1	v1					2012	v2	v2	v2	v2					Website of own country
Republic of Kosovo	--									2011	v2	v2	v2	v2					ISCGM
Islamic Republic of Afghanistan	--									2011		v2							ISCGM
Republic of Mali	--									2012	v2	v2	v2	v2					ISCGM
Republic of Zambia	--									2012	v2	v2	v2	v2					ISCGM
St Helena Island	--									2013	v2	v2	v2	v2					ISCGM
Zanzibar	--									2013	v2	v2	v2	v2					ISCGM
Principality of Andorra	--									2013	v2	v2	v2	v2					EGM
Republic of Austria	--									2013	v2	v2	v2	v2					EGM
Kingdom of Belgium	--									2013	v2	v2	v2	v2					EGM
Swiss Confederation	--									2013	v2	v2	v2	v2					EGM
Republic of Cyprus	--									2013	v2	v2	v2	v2					EGM
Czech Republic	--									2013	v2	v2	v2	v2					EGM
Federal Republic of Germany	--									2013	v2	v2	v2	v2					EGM
Kingdom of Denmark	--									2013	v2	v2	v2	v2					EGM
Spain	--									2013	v2	v2	v2	v2					EGM
Republic of Estonia	--									2013	v2	v2	v2	v2					EGM
Republic of Finland	--									2013	v2	v2	v2	v2					EGM
French Republic	--									2013	v2	v2	v2	v2					EGM
United Kingdom of Great Britain and Northern	--									2013	v2	v2	v2	v2					EGM
Hellenic Republic	--									2013	v2	v2	v2	v2					EGM
Republic of Croatia	--									2013	v2	v2	v2	v2					EGM
Hungary	--									2013	v2	v2	v2	v2					EGM
Ireland	--									2013	v2	v2	v2	v2					EGM
Republic of Iceland	--									2013	v2	v2	v2	v2					EGM

Country/Region	Version 1									Version 2								Website for Release	
	Release year	Transport	Boundary	Drainage	Population Centres	Elevation	Vegetation	Land Cover	Land Use	Release year	Transport	Boundary	Drainage	Population Centres	Elevation	Vegetation	Land Cover		Land Use
Italian Republic	--									2013	v2	v2	v2	v2					EGM
Principality of Liechtenstein	--									2013	v2	v2	v2	v2					EGM
Republic of Lithuania	--									2013	v2	v2	v2	v2					EGM
Grand Duchy of Luxembourg	--									2013	v2	v2	v2	v2					EGM
Principality of Monaco	--									2013	v2	v2	v2	v2					EGM
Republic of Malta	--									2013	v2	v2	v2	v2					EGM
Kingdom of the Netherlands	--									2013	v2	v2	v2	v2					EGM
Kingdom of Norway	--									2013	v2	v2	v2	v2					EGM
Republic of Poland	--									2013	v2	v2	v2	v2					EGM
Portuguese Republic	--									2013	v2	v2	v2	v2					EGM
Republic of San Marino	--									2013	v2	v2	v2	v2					EGM
Slovak Republic	--									2013	v2	v2	v2	v2					EGM
Republic of Slovenia	--									2013	v2	v2	v2	v2					EGM
Kingdom of Sweden	--									2013	v2	v2	v2	v2					EGM
Ukraine	--									2013	v2	v2	v2	v2					EGM
Vatican	--									2013	v2	v2	v2	v2					EGM
Republic of Serbia	--									2013	v2	v2	v2	v2	v2		v2		ISCGM/EGM
Republic of El Salvador	--									2013	v2	v2	v2	v2					ISCGM
Republic of Togo	--									2014	v2	v2	v2	v2					ISCGM
Republic of Madagascar	--									2016								v2	ISCGM
Republic of Albania	--									2016	v2	v2	v2	v2	v2	v2	v2	v2	ISCGM
Republic of Cote d'Ivoire	--									2016	v2	v2	v2	v2					ISCGM

Note:

1. Countries and Regions are listed in order of first release date of respective Global Map data.
2. The column "Website for Release" refers to the location of the website where respective Global Map data were released.
 - (1) ISCGM means Global Map released from ISCGM website.
 - (2) EGM means Euroglobalmap released as Global Map from Eurogeographics.
 - (3) ISCGM/EGM means two outlets for data release (i.e. ISCGM and Eurogeographics)

(2) Global Map Global version

Global Map Global Version is raster data which cover the globe in a single dataset and have three layers: Elevation; Land Cover; and Percent Tree Cover (Vegetation) (Table 3-1-2).

“Elevation” was developed by combining existing data and converted into Global Map Specifications, while “Land Cover” and “Percent Tree Cover (Vegetation)” were developed from satellite imagery.

The Version 1 of Elevation layer was prepared from GTOPO30 developed by USGS while Elevation Version 2 was prepared using GMTED2010 as a base with the superimposition of GLCNMO version 2 for clipping ocean and water areas.

Land Cover layer (The Global Land Cover by National Mapping Organizations: GLCNMO) is raster data (BIL format) which have 20 land cover classification items. Its classification is based on Land Cover Classification System (LCCS) developed by FAO (Food and Agriculture Organization) which enables to compare and integrate Land Cover data of Global Map with/into other land cover datasets based on LCCS.

Percent Tree Cover layer (Vegetation) shows the ratio of the area occupied by tree crown in a given area. For trees that drop all leaves and dormant during the period of low temperature and/or dry climate (deciduous trees), the period during which the trees grow thickest in the year (the maximum percent tree cover) is taken as the percent tree cover in that area.

Land Cover and Percent Tree Cover data were prepared from satellite imagery (MODIS data) by Center for Environment Remote Sensing (CEReS) of Chiba University. The draft data were verified by Global Map Project participating organizations before their release to the public. Version 1 data are in 1km resolution (30 second grid) and was released in 2008. Version 2 and Version 3 data are in 500m resolution (15 second grid) and were released in July 2013 and July 2016, respectively (For Version 3, only GLCNMO was developed and released). Like the case of Global Map National/Regional Version, the data have been also provided in TIFF and KML formats as user-friendly formats based on the resolution of the 14th meeting of ISCGM.

Table 3-1-2. Released Global Map data (Global Map Global version)

Elevation

	Version 1	Version 2
Release	August, 2014*	August, 2014
Data Source	GTOPO30	GMTED2010, GLCNMO (Sea/Water)
Coordinate System	WGS84	WGS84
Resolution	30 arcsecond	15 arcsecond
Data Format	BIL (16bit) / Geotiff	BIL (16bit) / Geotiff
Image	Fig. 3-1-1	Fig. 3-1-2

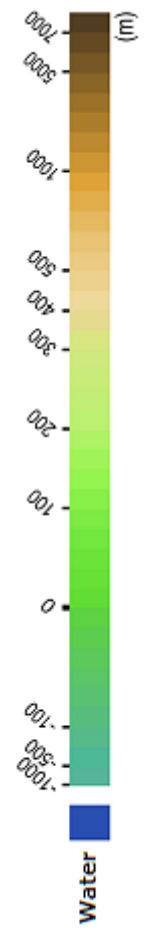
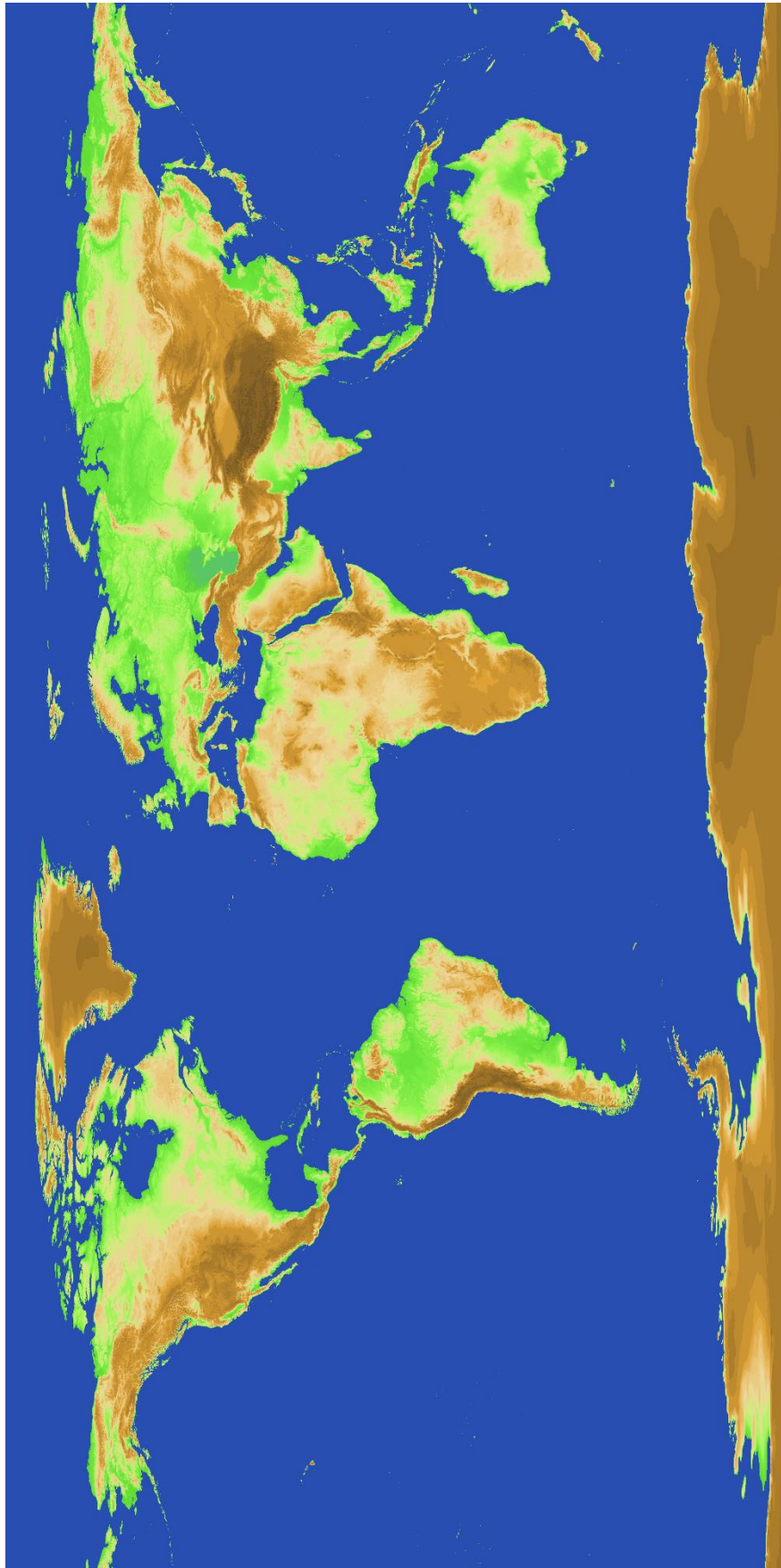
* Elevation version1 had been released as version 0 before the official release.

Global Land Cover by National Mapping Organizations (GLCNMO)

	Version 1	Version 2	Version 3
Release	June, 2008	July, 2013	July, 2016
Data Source	MODIS data 2003	MODIS data 2008	MODIS data 2013
Coordinate System	WGS84	WGS84	WGS84
Resolution	30 arcsecond	15 arcsecond	15 arcsecond
Data Format	BIL (8bit) / Geotiff / KML	BIL (8bit) / Geotiff / KML	BIL (8bit) / Geotiff
Image	Fig. 3-1-3	Fig. 3-1-4	Fig. 3-1-5

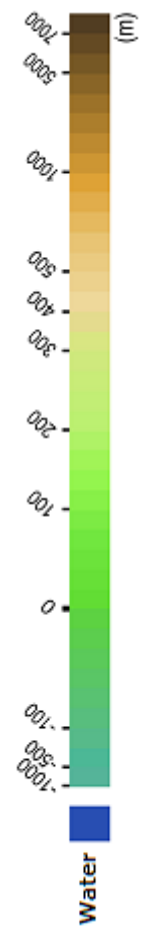
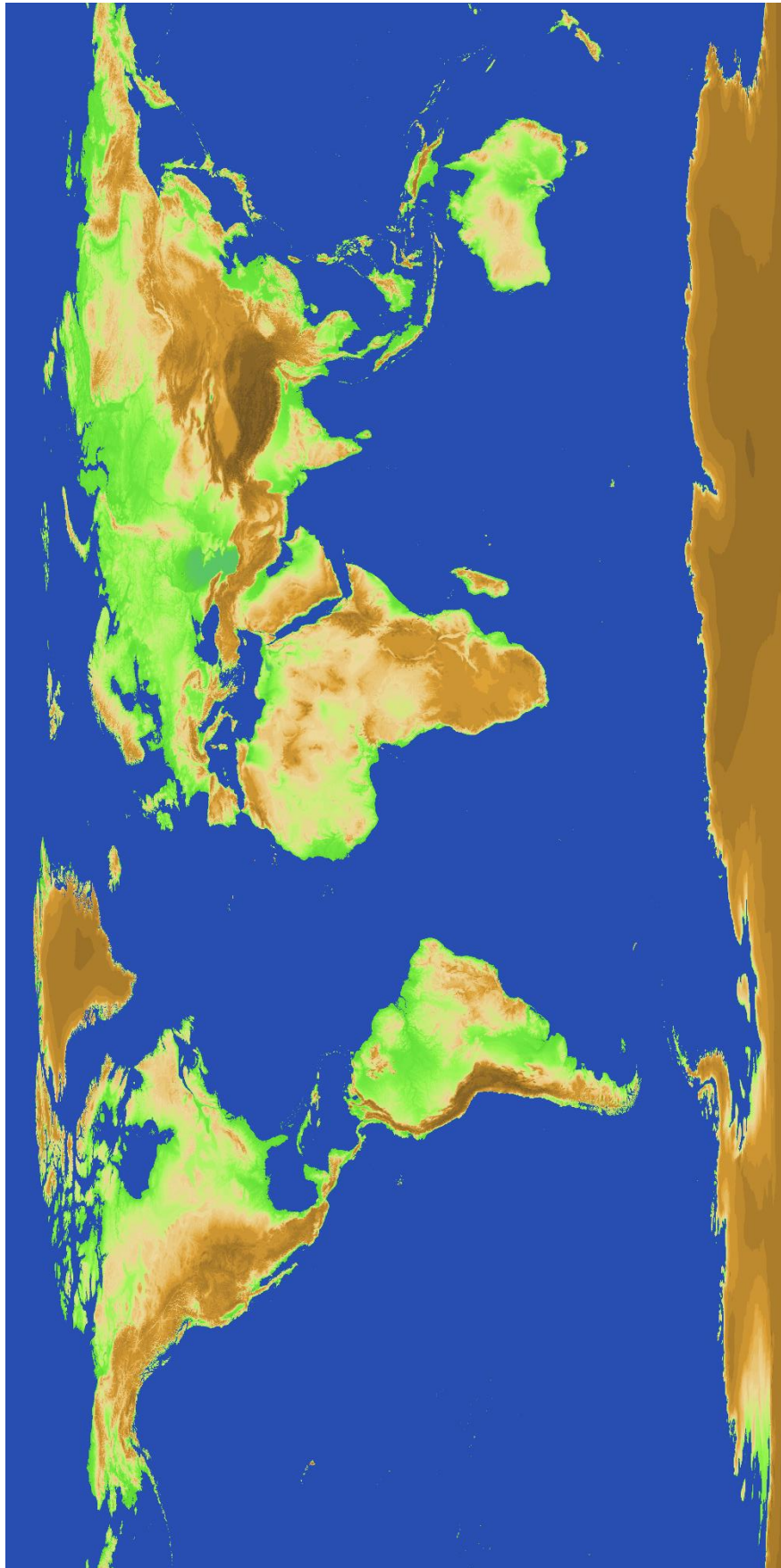
Vegetation (Percent Tree Cover: PTC)

	Version 1	Version 2
Release	June, 2008	July, 2013
Data Source	MODIS data 2003	MODIS data 2008
Coordinate System	WGS84	WGS84
Resolution	30 arcsecond	15 arcsecond
Data Format	BIL (8bit) / Geotiff / KML	BIL (8bit) / Geotiff / KML
Image	Fig. 3-1-6	Fig. 3-1-7



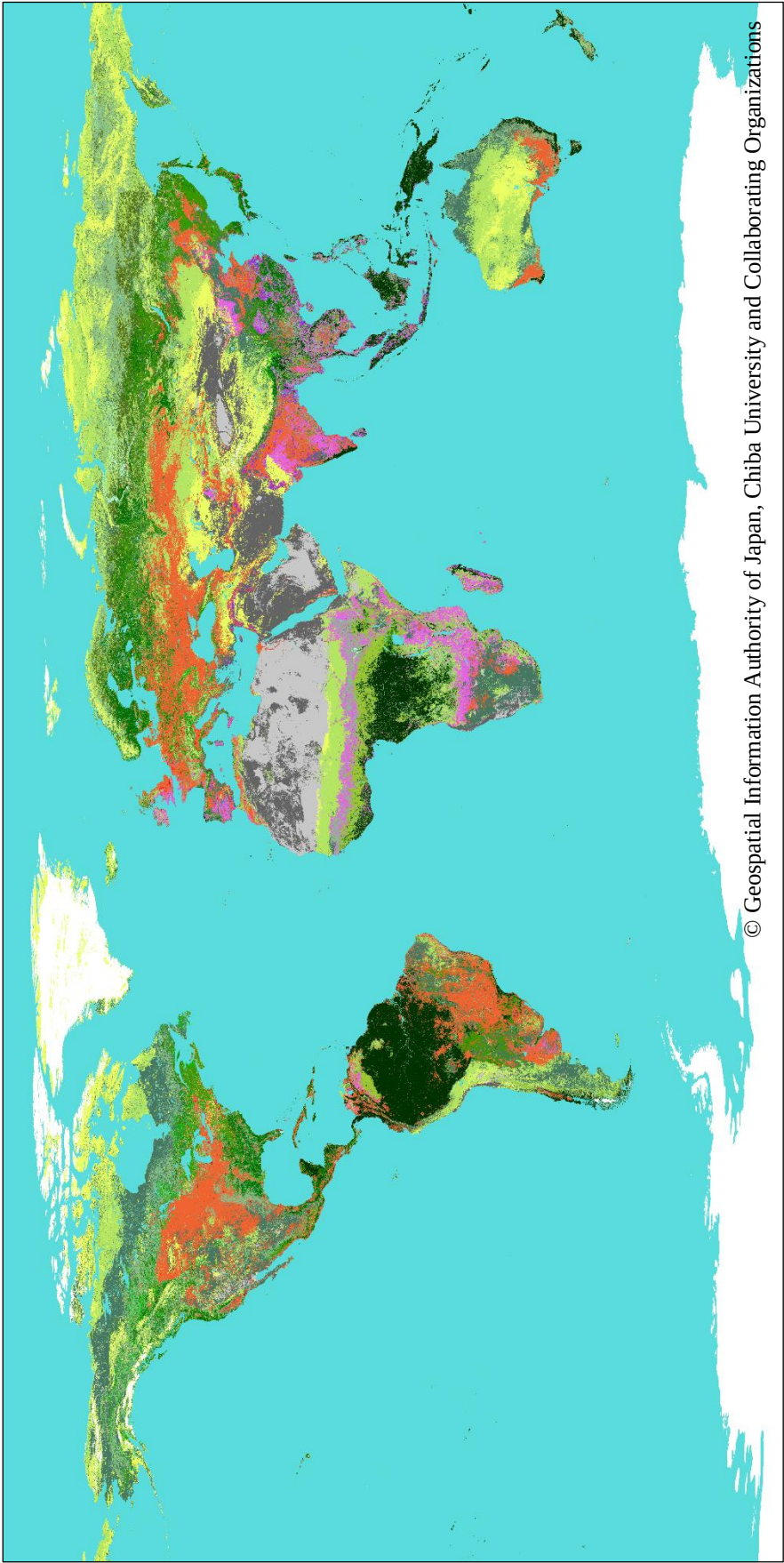
Release: August, 2014

Fig. 3-1-1. Global Map Global version – Elevation version 1



Release: August, 2014

Fig. 3-1-2. Global Map Global version – Elevation version 2



Release: June, 2008

Fig. 3-1-3. Global Map Global version – GLCNMO version 1

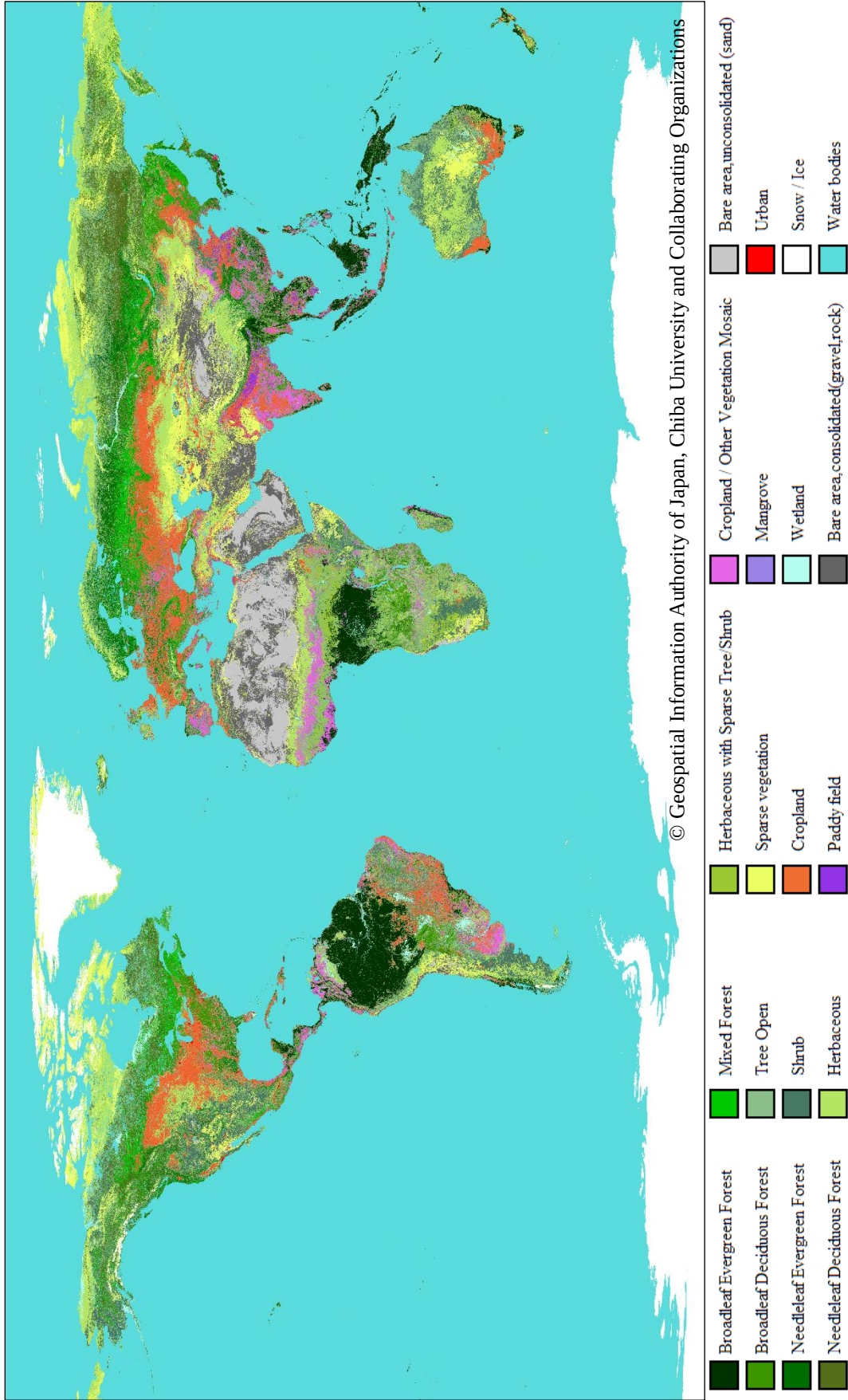
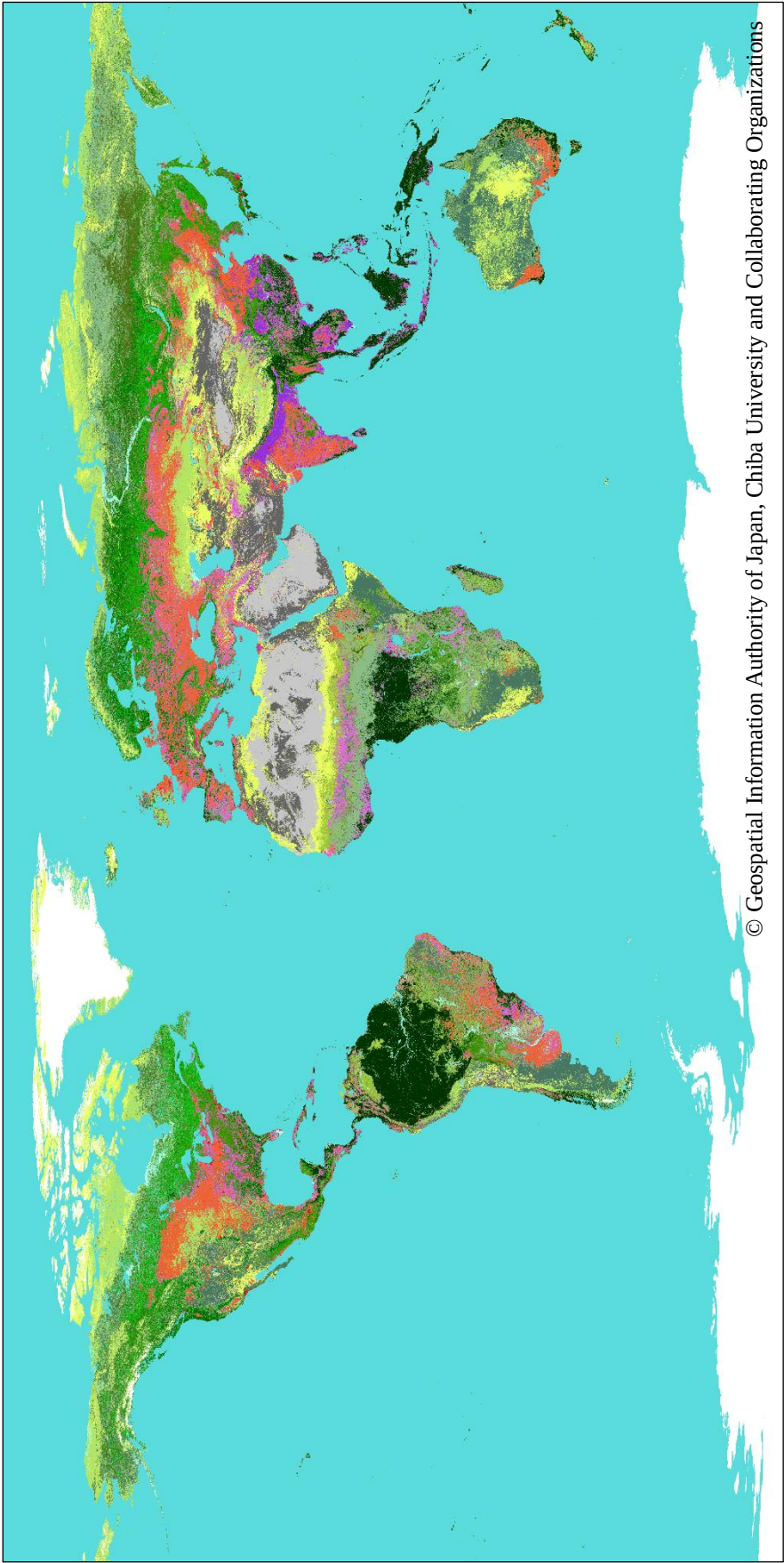


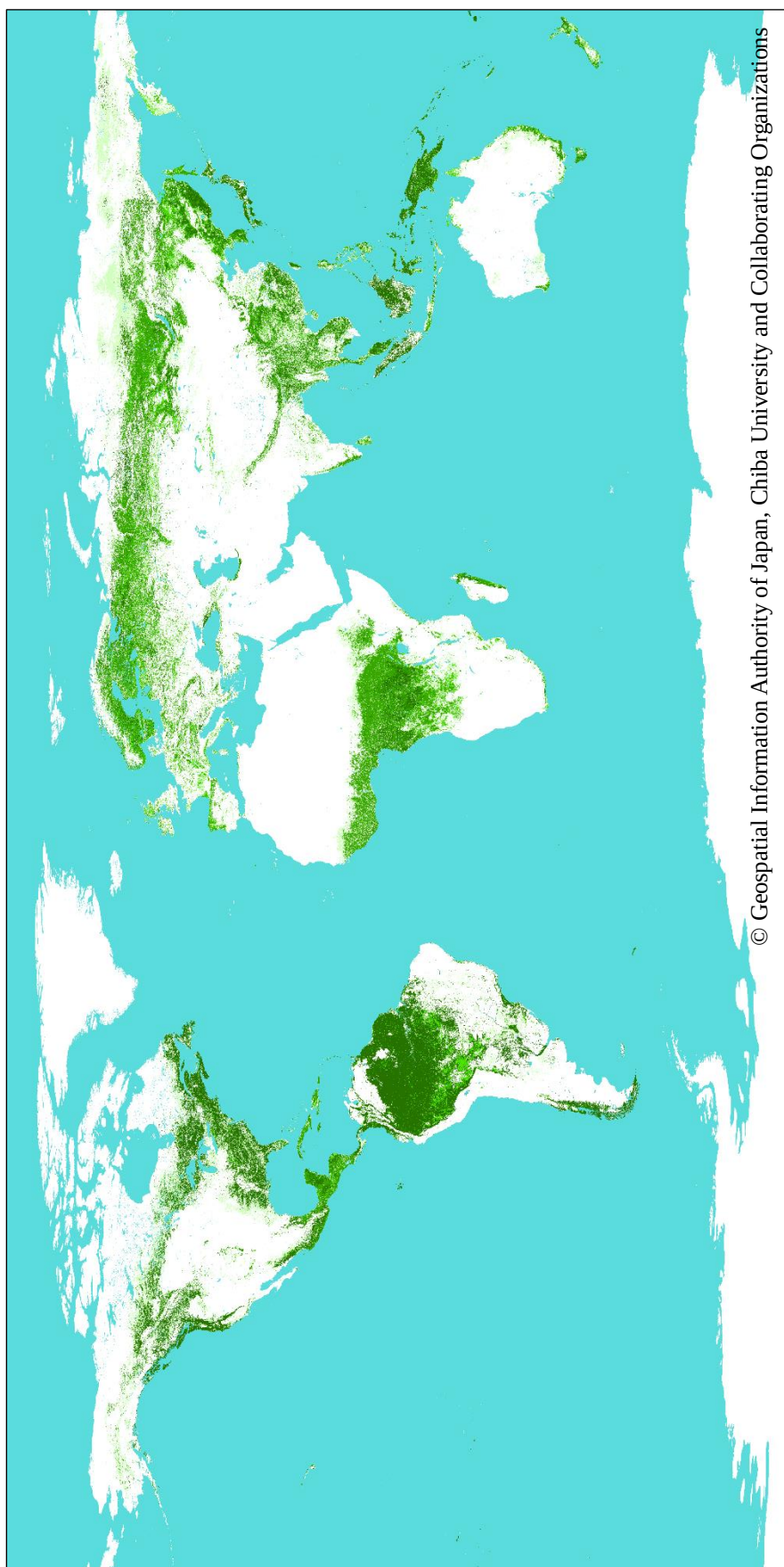
Fig. 3-1-4. Global Map Global version - GLCNMO version 2 Release: July, 2013



Broadleaf Evergreen Forest	Mixed Forest	Herbaceous with Sparse Tree/Shrub	Cropland / Other Vegetation Mosaic	Bare area,unconsolidated (sand)
Broadleaf Deciduous Forest	Tree Open	Sparse vegetation	Mangrove	Urban
Needleleaf Evergreen Forest	Shrub	Cropland	Wetland	Snow / Ice
Needleleaf Deciduous Forest	Herbaceous	Paddy field	Bare area,consolidated(gravel,rock)	Water bodies

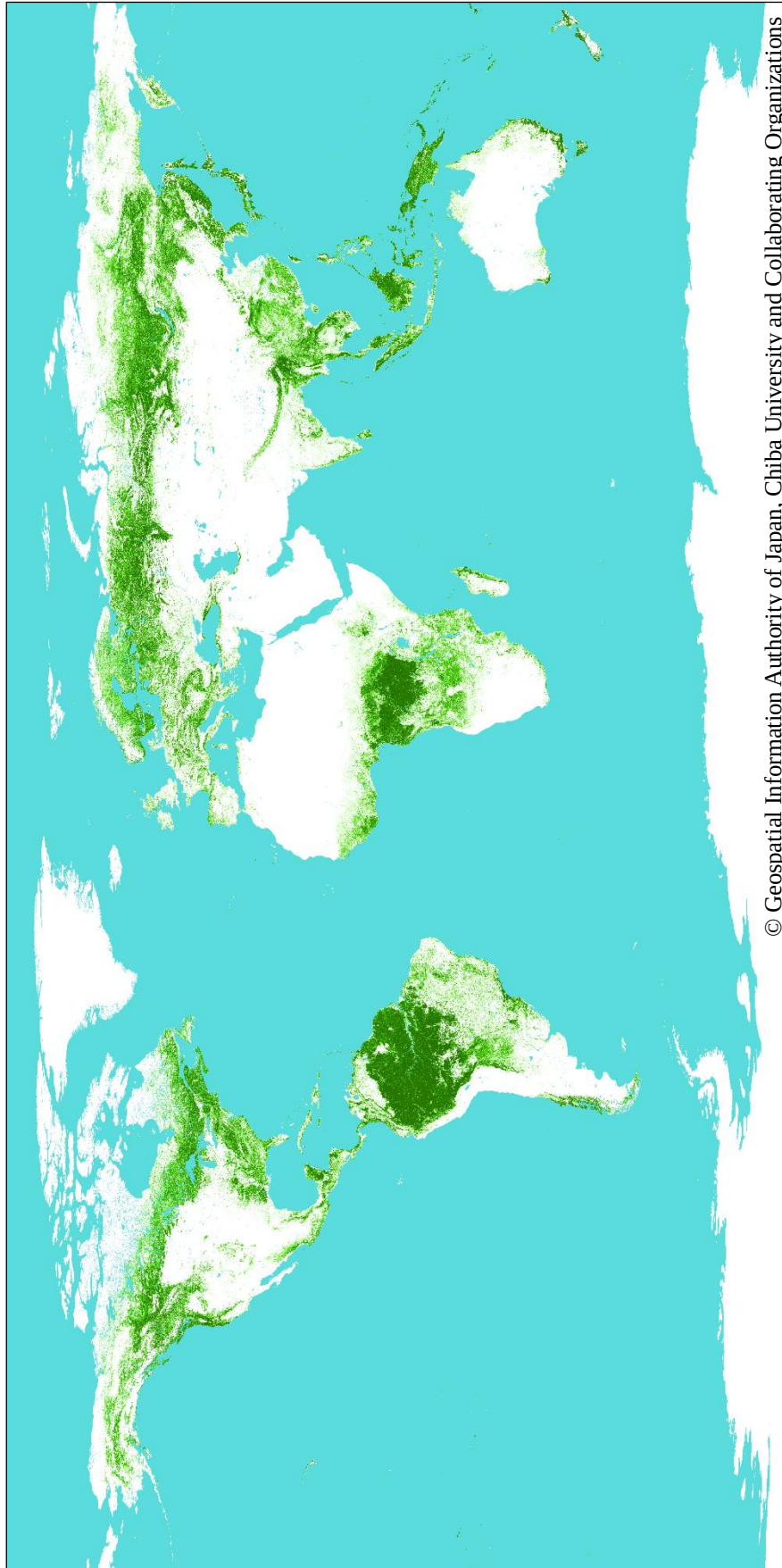
Fig. 3-1-5. Global Map Global version – GLCNMO version 3

Release: July, 2016



Release date: June, 2008

Fig. 3-1-6. Global Map Global version – Percent Tree Coverage (PTC) version 1



Release: July, 2013

Fig. 3-1-7. Global Map Global version – Percent Tree Coverage (PTC) version 2

(3) Global Map data after the Project

Upon completion of Global Mapping Project, the Secretariat of ISCGM closed the ISCGM website including Global Map download service in December 2016. Upon consent of respective NGIAs, the Global Map data developed to date will be transferred to the United Nations Geospatial Information Section (UNGIS). The transferal Global Map are expected to be utilized for various activities organized by the United Nations. At the same time, it was decided to release the Global Map data, which were published on the ISCGM website, on the GitHub (<https://globalmaps.github.io/>), one of the common use data web services for the time being in order to maintain accessibility of conventional general users to the Global Map data. In addition to the Global Map data, supplement information about Global Mapping Project such as specifications, metadata and the newsletters are also uploaded to the same website.

3-2. Specifications, Manuals and Software for developing Global Map

In order to facilitate the development of Global Map data, the following Specifications, Manuals and Software were provided to the participating organizations as well as made public. The items with asterisk (*) were provided to the participating organizations only.

(1) Specifications

- Global Map Specifications ver.1.1 (Adopted at 5th ISCGM meeting in November 1998)
- Global Map Specifications ver.1.2 (Adopted at 7th ISCGM meeting in March 2000)
- Global Map Specifications ver.1.2.1 (Adopted at 12th ISCGM meeting in April 2005)
- Global Map Specifications ver.1.3 (Adopted at 14th ISCGM meeting in July 2007)
- Global Map Specifications ver.2 (Adopted at 16th ISCGM meeting in October 2009)
- Global Map Specifications ver.2.1 (Adopted at 18th ISCGM meeting in June 2011)
- Global Map Specifications ver.2.2 (Adopted at 19th ISCGM meeting in August 2012)

(2) Manuals

- Manual for Development of Global Map (version 1.0)* (Released in November 1999)
- Manual for Development and Revision of Global Map* (Released in March 2010)
- Manual for Creation of Global Map Data using Global Map Data Check Software Version 2.0* (Released in March 2010)
- Manual for Developing and Updating the Global Map Data from Satellite Imagery* (Released in February 2013)

(3) Software

- Global Map Viewer version 1 (Released in January 2000)
- Global Map Viewer version 2 (Released in May 2010)
- Global Map Data Check Software (GMDC)* (Released in June 2011)
- Global Map Metadata Editor (GMME)* (Released in June 2011)
- Global Map Raster Development Tool (GMRD) (Released in August 2014)

3-3. Information on Disaster Management Organization and Hazard Maps of Each Country

As part of ISCGM activity in developing “Hazard Maps Portal Site” from August 2014 to December 2016, ISCGM Secretariat collected information on National Disaster Management Organizations which respond to natural disasters, and, geospatial data which will contribute to disaster mitigation such as hazard maps, and examples of utilization of geospatial information for disaster mitigation in each country. After the completion of Global Mapping Project, the information was compiled into a report as of March 2016 and submitted to UN-GGIM Knowledge Base in December 2016. The title of the report is “Report of Urban Hazard/Risk Maps of Each Country”, which is found at UN-GGIM Knowledge base (<http://ggim.un.org/knowledgebase/Knowledgebase.aspx>).

3-4. Capacity Building Activities

(1) JICA Group Training courses

Group training courses took place at Geospatial Information Authority (GSI) with sponsorship of Japan International Cooperation Agency (JICA) from 1992 to 2012. The objective of these training courses was to understand significance of Global Map development, necessity of international cooperation, and technological background as well as to improve administrative capacity in surveying and mapping in each country. In total, 112 trainees from 60 countries participated in the training courses. The following tables summarize outline of the training courses (Table 3-4-1, Table 3-4-2).

Table 3-4-1. “Seminar on GLOBAL MAPPING (ENVIRONMENT)”

Series	Year	Participating countries	No. of participants
1st	1994	Bangladesh, China, Malaysia, Morocco, Niger, Peru, Saudi Arabia	7
2nd	1995	China, Costa Rica, Kenya, Malaysia, Morocco	5

Table 3-4-2. “Global Mapping Training Course”

Series	Year	Participating countries	No. of participants
1st	1996	Bangladesh, Malaysia, Morocco, Nepal, Philippines, Thailand, Tunisia	7
2nd	1997	Bangladesh, China, Malaysia, Philippines, Tanzania	5
3rd	1998	Bangladesh, Brazil, Estonia, Fiji, Indonesia, Palau, Philippines	7
4th	1999	Azerbaijan, Bangladesh, Brazil, India, Indonesia, Iran, Tanzania	7
5th	2000	Bangladesh, Colombia, Mongolia, Slovakia, Sri Lanka	5
6th	2001	Ghana, Laos, Myanmar, Nicaragua, Uganda	5
7th	2002	China, Iran, Pakistan, Saudi Arabia, Viet Nam	5
8th	2003	Fiji, India, Oman, Philippines, Thailand	5
9th	2004	Bangladesh, Cambodia, China, Guatemala, India, Samoa, Thailand, Tunisia	9
10th	2005	Afghanistan, Algeria, Brazil, Fiji, Macedonia, Nepal, Palestine, Uzbekistan	8
11th	2006	Bhutan, Cook Islands, Guatemala, Jordan, Macedonia, Romania, Swaziland	7
12th	2007	Afghanistan, Honduras, Indonesia, Mauritius, Mozambique, Saint Lucia, Saint Vincent and the Grenadines, Syria, Yemen	9
13th	2008	DR Congo, Gambia, Lesotho	4
14th	2010	Bangladesh, Bhutan, Kenya, Malaysia, Myanmar, Philippines, Timor-Leste, Uzbekistan	8
15th	2011	Philippines, Senegal, Serbia, Viet Nam	4
16th	2012	Laos, Nepal, Senegal, Serbia, Thailand	7

* The training course was not held in 2009.

(2) Global Mapping Seminar

The Global Mapping Seminar was organized so as to promote understanding of the Global Mapping Project in Africa and to improve technologies through the lectures and other media with political and technical perspectives for development of Global Map and utilization strategies of Global Map data. The following table summarizes the Seminars (Table 3-4-3).

Table 3-4-3. “Global Mapping Seminar”

Series	Date	1) Venue 2) Organizers 3) Sponsors	Participating countries	No. of participants
1st	Aug.19–23, 2002	1) Regional Centre for Mapping Resource for Development (RCMRD), Nairobi, Kenya	Benin, Botswana, Republic of the Congo, Ethiopia, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mauritius, Namibia, Senegal, Seychelles, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe	20
2nd	Aug.25–28, 2003	2) Ministry of Land, Infrastructure, Transport and Tourism (MLIT), Japan; ISCGM; RCMRD	Botswana, Burkina Faso, Ethiopia, Ghana, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Rwanda, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe	18
3rd	Nov.8-11, 2004	3) Survey of Kenya (SOK); Kenya Institute of Surveying and Mapping (KISM); Japan International Cooperation Agency (JICA)	Botswana, Chad, DR Congo, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Mozambique, Seychelles, Sudan, Swaziland, Tanzania, Uganda, Zambia, Zanzibar, Zimbabwe	19
4th	Nov.21-22, 2005	1) Directeur des Travaux Geographiques et Cartographiques (DTGC), Dakar, Senegal	Mauritania*, Morocco, Gambia, Mali, Senegal	8
5th	Dec. 4-5, 2006		Central African Republic*, Gabon*, Guinea*, Mali, Mauritania, Senegal, Togo*	11
6th	Jan.28–29, 2008		2) MLIT; ISCGM; DTGC 3) JICA	Burkina Faso, Cote d'Ivoire*, Guinea, Niger, Senegal 9

Asterisk (*) means announcement of new participation to Global Mapping Project at the seminar.

(3) Grant Programs

1) ESRI

Global Mapping/GSDI Grant Program was launched on May 23, 2001 at the meeting of Global Spatial Data Infrastructure 2001 in Cartagena, Colombia to commemorate Professor John E. Estes, the Primary Chair of ISCGM. ESRI provided with the grant of integrated package of software, training and support which corresponded to 50,000 US dollars in order to construct National Spatial Data and National Spatial Data Infrastructure (NSDI) in each country of the world and to support sharing of the geospatial data. This grant was presented to National Mapping Organizations or ministries with equivalent function in 86 countries of all over the world.

The following is included in the grant.

- A set of ArcInfo 8, ArcSDE 8-ArcSDE server and license for 5 connections, Standard version of ArcIMS –ArcIMS with one CPU, A set of ArcGIS system including a set of ArcGIS Production Line TOOL Set (PLTS)
- Maintenance and management of software (technical support and upgrade), trainings of 5 virtual campus courses, and credit of 5,000 dollars for training of national base map making and publication.
- From September 1 to 12 in 2003, GSDI/Global Mapping Grant GIS Training Course was organized by using ArcGIS software at the Regional Centre for Mapping Resource for Development (RCMRD) in Nairobi, Kenya. In total 18 trainees participated from Botswana, Ethiopia, Kenya, Lesotho, Malawi, Namibia, Swaziland, Tanzania, Uganda and Zambia.

2) INTERGRAPH

In June 2004, INTERGRAPH proposed Grant Program and ISCGM accepted it with pleasure. In addition to this grant, INTERGRAPH also informed of establishment of the fund that would support participation in international conferences related to Global Mapping or attendance at seminars and trainings.

The following is included in the grant.

- GML/WMS/WFS data server, GML conversion program and server
- One year-membership for Team GeoMedia Subscriber
- Two day-free of charge support and training
- Membership for Intergraph Geo Spatial Users Community (IGUC)
- Support for participation in trainings concerning Global Mapping twice or more