

## RASTER LAYERS OF ALBANIAN GLOBAL MAP DATASET

Milot LUBISHTANI<sup>1</sup>

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### SUMMARY

One of the main aims of the infrastructural organization of geospatial data is to provide users to be capable to acquire complete, exact and updated dataset at the right time. This is necessary for providing of an ideal environment, where all stakeholders can work collaboratively in an effective way, in order to solve environmental issues and to fulfill their target goals.

The necessity of infrastructural organization of geospatial data in global level, by including official geospatial datasets developed by the national mapping organizations, for environmental monitoring, protection, and early warning management in international level, are the main findings of this research study.

Data standardization of Global Map as contributor of GSDI and GEOSS have been analyzed through developed Albanian GM dataset. As main components that were taken into consideration for performing research analyses are data and metadata, technology, institutional framework, policies, interoperability, network services, search opportunities, and data sharing within GSDI.

**Key words:** GM raster data , Albania, Global Map, , land use, land cover, elevation, vegetation.

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<sup>1</sup> **Milot LUBISHTANI**, milot.lubishtani1@hotmail.com, PhD candidate at Polytechnic University of Tirana; Faculty of Civil Engineering; Geodesy Department.  
Address: Ferizaj, Republic of Kosovo, Tel. +383 44 720210.

## 1. INTRODUCTION

The main purpose of Global Mapping (GM) project is global data collection of geospatial data from all states and interested organizations to develop and to have easy access to digital geographic information at global level of scale 1:1.000.000, aimed to be used to equip the implementation of international/global agreements and conventions for environment protection, supervision of major phenomena of the environment and encourage economic growth. GM also intend to contribute in development of spatial data in global level (GSDI-Global Spatial Data Infrastructure, [www.gsdi.org](http://www.gsdi.org)).

Existing topographic maps in scale 1:25.000, high resolution orthophoto images, as well as the official data from governmental institutions has been utilized as source data for Albanian GM datasets. In this paper in details will be presented whole process of data preparing, quality and outputs of Albania's GM data, with focus on raster data DEM, land cover, land use and vegetation with 100m spatial resolution.

The Republic of Albania within the project for the compilation of the global map is represented by the State Authority for Geospatial Information (ASIG), as the responsible institution for Albania's cartography at the national level. Preparation of Albania's GM data has been proceeded in academic level within the PhD study research in geodesy department of the Polytechnic University of Tirana, with aim to support, help and improve young cartography in Albania. It was published officially on July 14th 2016 (Lubishtani, Idrizi 2016).

## 2. GLOBAL MAP

Global Map is a set of digital maps that accurately cover the whole globe to express the status of global environment. It is developed through the cooperation of National Geospatial Information Authorities (NGIAs) in the world. An initiative to develop Global Map under international cooperation, the Global Mapping Project, was advocated in 1992 by Ministry of Construction, Japan (Idrizi 2005).

Due to negative experiences of international world map with a scale of 1:1,000,000 dating from 1891, the development of technology and the need for recognition of global geospatial data and these data are as update, in 1992 in

RioDeZhaniero in Brazil was proposal creation world global digital mapping in scale 1: 1,000,000 (Idrizi 2005).

The main purpose of this project is global data collection of geospatial data from all states and interested organizations to develop and to have easy access to digital geographic information at global level of scale 1:1.000.000. It is aimed to be used to equip the implementation of international/global agreements and conventions for environment protection, for supervision of major phenomena of the environment and encourage economic growth (Nagayama 2016). GM also needs to contribute in development of spatial data (GSDI-Global Spatial Data Infrastructure, and GEOSS-Global Earth Observation System of Systems).

Since the world as a whole is divided into different continents and countries that follows the various institutions which produce geospatial data with the same or different standarts, it is thought that these geospatial data to have same standarts, so they can be used, to be exchanged to reach the analysis of a problem more easily and with low cost. The primary objective of Global Map project is to contribute to the sustainable development through the provision of base framework geographic dataset, which is necessary to understand the current situation and changes of environment of the world (Sasagawa etAll 2017).

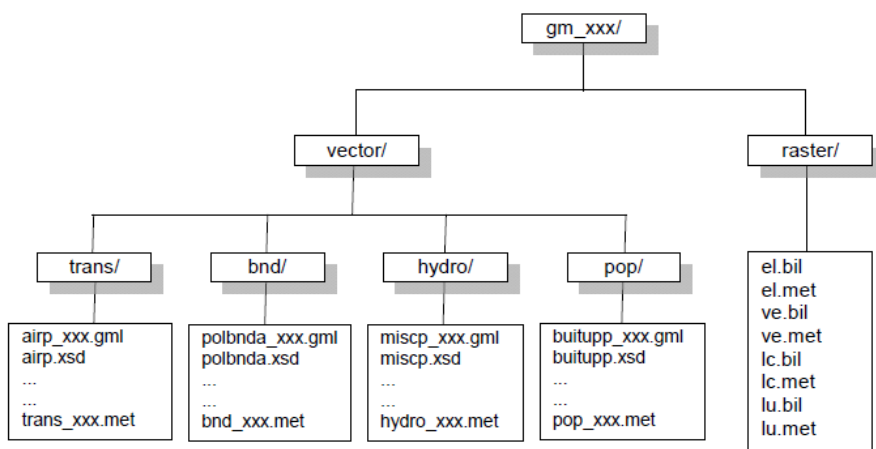
Global Map is fundamental digital geospatial information being developed to cover the whole land of the globe. It is an effort central to the Global Mapping Project. The purpose of the Global Map is to accurately describe the present status of the global environment in international cooperation of respective National Mapping Organizations (NMOs) of the world, aimed for (Idrizi 2006):

- Monitoring and early warning systems for natural disasters;
- Developing ecosystem, drainage basins framework for environmental assessment;
- Monitoring and management of natural resources;
- Quantifying trans boundary issues;
- Assessment of the trends of environment changes;
- Rapid response capability/early warning;
- Local, national and multinational physical development planning;
- Environmental priority setting, analytical studies over large areas and
- Informed decision-making of policy makers with a strategic database.

The benefits of participation in Global Mapping include: Joining the world community of surveying and mapping organizations will facilitate the acquisition of the latest information and knowledge of digital geographic data development and service (Idrizi 2018); it would also facilitate to raise the status of the organization by active participation in international activities and the contribution to sustainable development which is the final goal of Global Map.

There are two series of Global Map. One is National and Regional version which each participating NMOs are basically in charge of development of their own Global Map. The other is Global Version which is developed by using satellite imagery with cooperation between participating NMOs and supporting stakeholders. Global version covers only in vegetation layer and land cover layer (Lubishtani 2018).

GM national and regional version database contains four vector layers (population centers, transportations, drainage and boundaries) and raster layers (land cover, land use, vegetation and elevation) at scale 1:1.000.000 for vector and with spatial resolution of 30" (arc seconds of longitude and latitude) for raster layers (Lubishtani, Idrizi 2016).



**Figure 1.** Directory Structure (Global Map Specifications Version 2.2)

GM data structure is defined on Global Map specification documents 1.1, 1.2, 1.3, 2., 2.1 and 2.2, based on ISO/TC 211 international standards. i.e. ISO19136 for GML format, ISO 3166 for nation codes, ISO 19115 standard of metadata of V2 by using ISO 19139 for encoding, ISO 15046 standard of metadata of V1, ISO639 for language code, and ISO8601 for date code (Idrizi etAll 2011). In next figure scheme of GM standards is given:

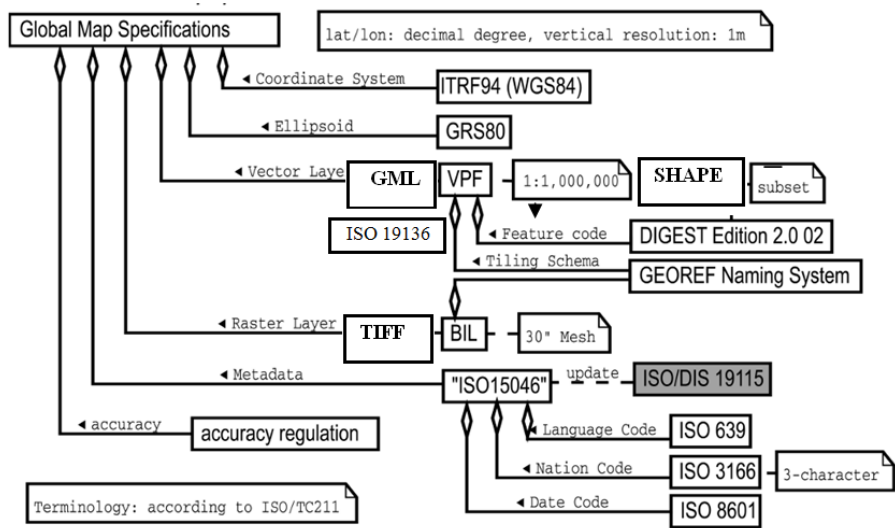


Figure 2. Scheme of GM standards (Idrizi etAll, 2011)

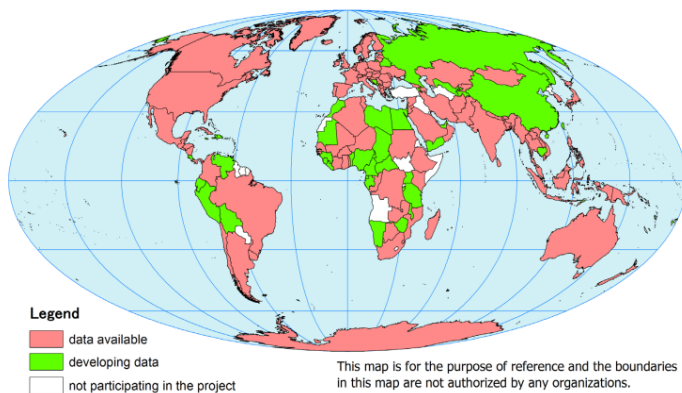
Despite the maps prepared in local/national standards, Global Map dataset enable (Idrizi, 2006):

- All data of Earth to be in one place;
- With the same attributes;
- In the same format;
- In the same coordinate system;
- In the same scale and
- With similar accuracy.

Increasing demand and the need to be qualified data geospatial and their use for achieving a result set and necessary and cost as little as possible, many European countries and the Balkans have handed over the data as geospatial on the global map with a scale of 1 1.000.000 and as such as Macedonia in 2006, Romania in 2009, Bulgaria in 2009, Kosovo in 2010 and Albania in 2016. All European countries have joined the GM through EuroGlobalMap ([www.eurogeographics.org](http://www.eurogeographics.org)), unless countries like Montenegro, Belarus and Bosnia and Herzegovina are not joined GM (Lubishtani etAll 2018). Currently, 168 countries/16 regions participate in the Project. Among them, data of 114 countries/8 regions have been released. Version 2 data are for 90 countries/4 regions (GM newsletter, no.81, 2016).

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**Figure 3.** Coverage of countries with Global Map datasets (GM newsletter, no.81, 2016)

### 3. GLOBAL MAP DATASET OF ALBANIA

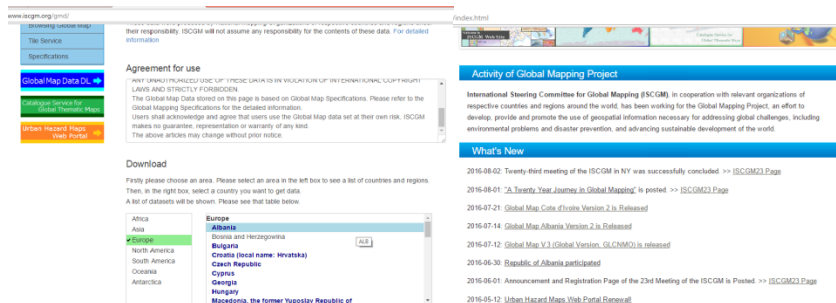
The Republic of Albania participate in global mapping project since 30.06.2016 in Level B (*Level B* mean that institution will prepare the data set of own country), represented by the State Authority for Geospatial Information (ASIG), as the responsible institution for Albania's cartography at the national level. Preparation of Albania's GM data has been proceed in academic level within the geodesy department of the Polytechnic University of Tirana, with aim to support, help and improve young cartography in Albania. Existing topographic maps 1:25.000, high spatial resolution orthophoto images, as well as the official data from governmental institutions has been utilized as source data (Lubishtani, Idrizi 2016).



Country or Region	Organization	Details
Africa		
		See more
Asia		
		See more
Europe		
Republic of Albania	State Authority for Geospatial Information	Released
Albania	Ministry of Urbanism and Development	EuroGlobalMap
Austria	Federal Office of Metrology and Surveying	EuroGlobalMap
Belarus	The State Committee on Property of the Republic of Belarus	Direct
Belgium	National Geographic Institute	EuroGlobalMap
Bosnia and Herzegovina	General Administration of Patrimonial Documentation	
	Federal Administration for Geodetic and Real Property Affairs	
	Republic Authority for Geodetic and Property Affairs of Republic of Srpska	
Bulgaria	Geodesy, Cartography, and Cadastre Agency	Released
Croatia	State Geodetic Administration of the Republic of Croatia	EuroGlobalMap
Cyprus	Cyprus Department of Lands and Surveys	Direct+Euro
Czech Republic	Czech Office for Surveying, Mapping and Cadastre	EuroGlobalMap
Denmark	Danish Geodata Agency	EuroGlobalMap
Estonia	Estonian Land Board	Direct+Euro
Finland	National Land Survey of Finland	EuroGlobalMap
France	Finnish Geodetic Institute	EuroGlobalMap
Georgia	National Institute of Geographic and Forest Information	EuroGlobalMap
	The State Department of Geodesy and Cartography	Released
Germany	Federal Agency for Cartography and Geodesy	Direct+Euro
	Working Committee of the Surveying Authorities of the Lander of the Federal Republic of Germany	
Greece	Hellenic Military Geographical Service	Direct+Euro
	National Cadastre and Mapping Agency S.A.	

Figure 4. Part of list of participants in GM project ([www.iscgm.org](http://www.iscgm.org), 30.06.2016)

Albania is one of the last European countries that has published database at Global Map, exactly on 14th July 2016 has published the vector and raster database according to technical specification V2.2. Official source data that have been used for developing Albanian GM dataset were supplied by official governemantal institutions: State Authority for Geospatial Information (ASIG), Institute of transportation, Albanian Institute of Statistics (INSTAT), Military Geographical Institute of Albania, and Ministry of Urban Development (Lubishtani, Idrizi 2016).



www.iscgm.org/gmd/

International Steering Committee for Global Mapping (ISCGM) will not assume any responsibility for the contents of these data. For detailed information

Global Map Data Download

Agreement for use

Download

Firstly please choose an area. Please select an area in the left box to see a list of countries and regions. Then, in the right box, select a country you want to get data. A list of datasets will be shown. Please see that table below.

Europe

- Albania
- Bosnia and Herzegovina
- Bulgaria
- Croatia (local name: Hrvatska)
- Czech Republic
- Cyprus
- Georgia
- Hungary
- Macedonia, the former Yugoslav Republic of

Activity of Global Mapping Project

International Steering Committee for Global Mapping (ISCGM), in cooperation with relevant organizations of respective countries and regions around the world, has been working for the Global Mapping Project, an effort to develop, provide and promote the use of geospatial information necessary for addressing global challenges, including environmental problems and disaster prevention, and advancing sustainable development of the world.

What's New

- 2016-08-02: Twenty third meeting of the ISCGM in NY was successfully concluded. >> ISCGM23 Page
- 2016-08-01: "A Twenty Year Journey in Global Mapping" is posted >> ISCGM23 Page
- 2016-07-21: Global Map Code of Ethics Version 2 is Released
- 2016-07-14: Global Map Albania Version 2 is Released
- 2016-07-12: Global Map V 3 Global Version, GLCNMO2 is released
- 2016-06-30: Republic of Albania participated
- 2016-06-01: Announcement and Registration Page of the 23rd Meeting of the ISCGM is Posted >> ISCGM23 Page
- 2016-05-12: Urban Hazard Maps Web Portal Released

Figure 5. Albanian GM data ([www.iscgm.org/gmd](http://www.iscgm.org/gmd), 30.08.2016)

#### 4. GLOBAL MAP RASTER DATASET OF ALBANIA

Global Map raster data is in simple binary raster format without the embedded header – BIL (Band Interleaved by Line) format, pixel information stores band by band for each line, or row, of the image. Vegetation, Land Cover and Land Use are in 8 bit unsigned data and the elevation data in 16 bit signed in Motorola (big-endian) byte order. On October 10th 2008 the existing GM raster data (national/regional version) has been published in TIFF format also, which is more simple and user-friendly format (Idrizi etAll 2010).

All layers are identified with two letters, which explain the name of layer (el – elevation, ve – vegetation, lc – land cover, lu – land use). The file names have the form ww\_xxx.zzz where:

- ww identifies the theme,
- xxx identifies the country code which is defined at ISO 3166 Nation Code, and
- zzz is the extension identifying the data (bil or tiff) or the header (hdr).

Raster grid cells are arrayed on a horizontal coordinate system in degrees of latitude and longitude referenced to ITRF94 and GRS80, with 30'' spatial resolution, and tiling dividing system by second pair with 1° by 1° standard GEOREF division (Idrizi etAll 2011). The following groups of features are stored as raster layers:

*ELEVATION*: The vertical distance between the surface of the earth and the standard sea level that the nation has defined. Vertical units represent elevation in meters above Mean Sea Level (MSL). The elevation layer is in a Band Interleaved Line (BIL) format with 16-bit elevation value and 30'' horizontal grid spacing. The values of elevation are represented in meters, in which the codes -9999 are areas masked with the sea.

*VEGETATION*: Percent tree cover data by an integer value from 0 to 100 will be as vegetation layer. For Vegetation layer, a modified water legend with 20 classes is adopted.

*LAND COVER*: GLCNMO global legend are used for land cover layer. Land cover is the observed (bio) physical cover on the earth's surface (Di Gregorio and Jansen, 1998). In Global Map specification the codes of Land Cover Characteristics of GM V1/V2 national/regional version is adopted for International Geosphere-Biosphere Programme (IGBP). IGBP has 17 Land Cover classes. The global land cover layer is product of a collaboration



between USGS and the University of Maryland, Department of Geographical Sciences.

**LAND USE:** Codes developed for the Global Map are adopted. Land Use is a series of operations on land, carried out by humans, with the intention of obtaining products and/or benefits through using land resources (de Bie 2000).

Classification of land cover data was made in two ways: one was global classification and the other was national/regional classification. Land cover global version dataset contain 20 land cover classes, and another additional class with code 255 which represent the areas without data. In table 7 are represented the comparison between the Land cover classes in national/regional with 17 and global version with 20 classes (Idrizi etAll 2010).

**Table 1.** Types of raster data of GM V1/V2 national and regional version (Idrizi etAll 2010)

Land Cover		Land Use		Vegetation	
Description	Code	Description	Code	Description	Code
Evergreen Needleleaf Forest	1	Forest	10	Tropical rainforest	10
Evergreen Broadleaf Forest	2	Mixture	20	Hydrotropic forest	20
Deciduous Needleleaf Forest	3	Grassland/shrub	30	Grassland in tropical or sub-tropical zone	30
Deciduous Broadleaf Forest	4	Agricultural area	40	Semi desert in tropical or sub-tropical zone	40
Mixed Forest	5	Wetland	50	Desert in tropical or sub-tropical zone	50
Closed Shrublands	6	Barren area	60	Evergreen thick-leaved forest	60
Open Shrublands	7	Built-up area	70	Evergreen broad-leaved forest	70
Woody Savannas	8	Drainage/water	80	Deciduous broad-leaved forest	80
Savannas	9	Ocean	90	Grassland in temperate zone	90
Grasslands	10			Semi-desert in temperate zone	100
Permanent Wetlands	11			Desert in temperate zone	110
Croplands	12			Northern coniferous forest	120
Urban and Built-Up	13			Tundra	130
Cropland/Natural Vegetation Mosaic	14			Water body	140
Snow and Ice	15			Ice and snow	150
Barren or Sparsely Vegetated	16			Wetland	210
Water Bodies	17			Mixed forest	220
				Mixed land	230
				Non natural	240
				Unclassified	250

**Table 2.** Comparison between classes of Land Cover global and national/regional versions (Tateishi 2005)

Land cover global version	Land cover – national and regional version
1. Broadleaf Evergreen Forest	2. Evergreen Broadleaf Forests
2. Broadleaf Deciduous Forest	4. Deciduous Broadleaf Forests
3. Needleleaf Evergreen Forest	1. Evergreen Needleleaf Forests
4. Needleleaf Deciduous Forest	3. Deciduous Needleleaf Forests
5. Mixed Forest	5. Mixed Forests
6. Tree Open	8. Woody Savannas 9. Savanna
7. Shrub	6. Closed Shrublands 7. Open Shrublands
8. Herbaceous, single layer	10. Grasslands
9. Herbaceous with Sparse and Tree/Shrub	
10. Sparse Herbaceous/Shrub	16. Barren
11. Cropland (herbaceous crops except rice)	12. Croplands
12. Rice, paddy	
13. Cropland/Natural Vegetation Mosaic	14. Cropland/Natural Vegetation Mosaics
14. Tree-Water (Brackish to Saline)	11. Permanent Wetlands
15. Wetland	
16. Bare area, consolidated (gravel, rock)	16. Barren
17. Bare area, unconsolidated (sand)	
18. Urban	13. Urban and Built-up
19. Snow/Ice	15. Snow and Ice
20. Water Bodies	17. Water Bodies

According to point 3.2.2 (data structure) of GM specification V2.2, the raster data with higher resolution can be developed, such as 3 or 15 arc seconds, in order to enable resampling procedure with 30 arc-second data. In a case of Albanian raster dataset of GM data, we used the highest option of spatial resolution, and four raster layers have been developed with spatial resolution of 3 arc-seconds, which is equal to about 100m spatial resolution.

#### 4.1. Land cover dataset of Albanian GM

IRS, SPOT, Landsat and RapidEye satellite images, dual coverage, orthophotos, and topographic maps 1:25000 are used for developing Land Cover dataset for Global Map of Albania. The classes which are included for Albanian land cover dataset are: 2,3,5,6,7,8,9,10,11,13,15,16,17,18,20, and 255, while not included classes are: 1,4,12,14, and 19. In bellow table are given counted areas of Albanian national area with land cover classes according to GM specification 2.2.

**Table 3.** Coverage of Albanian national area with Land Cover classes according to GM Specification 2.2

Value	Count	Area [km2]	Value	Count	Area [km2]	Value	Count	Area [km2]
2	967749	6332	8	521750	3414	15	12537	82
3	139143	910	9	427294	2496	16	27441	180
5	65632	429	10	228933	1498	17	32167	210
6	91671	600	11	722383	4727	18	113523	743
7	556290	3640	13	432418	2830	20	54343	356
255	61	1						

#### 4.2. Land use dataset of Albanian GM

For creating of land use of Albania, high resolution orthophoto images, Landsat, CORINE, and topographic maps 1:25000 were used. The classes which are included for land cover are: 10, 30, 40, 50, 60, 70, 80, and 255, while 20 and 90 classes have not been included. In bellow table are given counted areas of Albanian national area with land use classes according to GM specification 2.2.

**Table 4.** Coverage of Albanian national area with Land Use classes according to GM Specification 2.2

Value	Count	Area [km2]	Value	Count	Area [km2]
10	1264195	8272	60	59608	390
30	1734267	11348	70	113523	743
40	1154801	7556	80	54343	356
50	12537	82	255	61	1

### 4.3. Vegetation dataset of Albanian GM

Based on results derived from analyses and processing vegetation of Albania's GM, the vegetation dataset of Albania have been developed based on high resolution orthophoto images, Landsat TM/NDVI and topographic maps 1:25000. In next table are given counted areas of Albanian national area with vegetation classes according to GM specification 2.2.

**Table 5.** Coverage of Albanian national area with Vegetation classes according to GM Specification 2.2

Value	Count	Area [km2]	Value	Count	Area [km2]	Value	Count	Area [km2]
1	710	5	34	4988	33	67	45926	301
2	1471	10	35	6234	41	68	44559	292
3	2268	15	36	8731	57	69	43663	286
4	964	6	37	11475	75	70	38053	249
5	587	4	38	10125	66	71	30884	202
6	3143	21	39	9156	60	72	37892	248
7	2030	13	40	9143	60	73	53247	348
8	1416	9	41	9373	61	74	50257	329
9	3559	23	42	11509	75	75	53798	352
10	3840	25	43	14314	94	76	47448	310
11	2782	18	44	14078	92	77	47513	311
12	1904	12	45	10292	67	78	34341	225
13	1314	9	46	8254	54	79	31759	208
14	1426	9	47	10925	71	80	47174	309
15	2974	19	48	12504	82	81	54030	354
16	2901	19	49	15347	100	82	45190	296
17	2711	18	50	18690	122	83	38140	250
18	1759	12	51	18973	124	84	38006	249
19	1475	10	52	22143	145	85	35801	234
20	2045	13	53	18120	119	86	29234	191
21	3027	20	54	15236	100	87	32376	212
22	4651	30	55	19454	127	88	32163	210
23	7761	51	56	17943	117	89	28933	189
24	6606	43	57	15282	100	90	34453	225
25	6999	46	58	14508	95	91	53468	350
26	5057	33	59	18467	121	92	47557	311
27	3012	20	60	25519	167	93	40501	265
28	2317	15	61	22452	147	94	31879	209
29	2635	17	62	17767	116	95	19630	128
30	3209	21	63	24617	161	96	17510	115
31	3851	25	64	34639	227	97	22347	146
32	4571	30	65	42349	277	98	24926	163
33	5995	39	66	45375	297	99	14493	95
						100	1976	13

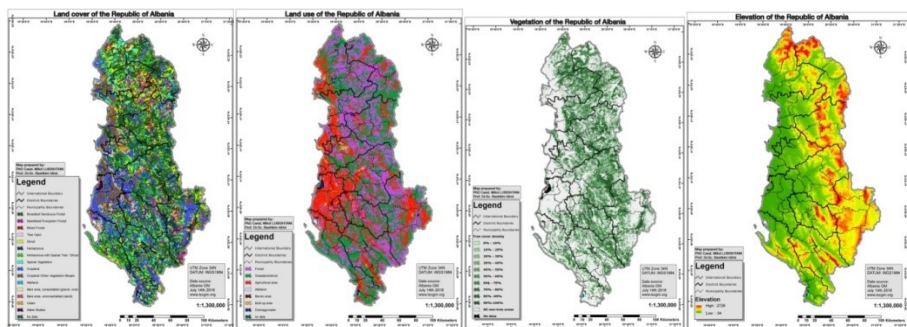
#### 4.4. Elevation dataset of Albanian GM

For creating of elevation of Albania, SRTM with 90m spatial resolution have been used as basic data, which later have been adjusted with 1d transformation based on list of official ground control points of Albanian geodetic network. In bellow table are given counted areas of Albanian national area with graduated classes in every 100m altitude.

**Table 6.** Albanian national areas divided with 100m altitude graduated areas

Elevation [m]	Count	Area [km2]	Elevation [m]	Count	Area [km2]	Elevation [m]	Count	Area [km2]
0-100	730235	4778	901-1000	247577	1620	1801-1900	50835	333
101-200	312268	2043	1001-1100	226168	1480	1901-2000	37290	244
201-300	180074	1178	1101-1200	211187	1382	2001-2100	25254	165
301-400	299275	1958	1201-1300	188625	1234	2101-2200	16063	105
401-500	282245	1847	1301-1400	164729	1078	2201-2300	9075	59
501-600	260960	1708	1401-1500	135296	885	2301-2400	4533	30
601-700	248671	1627	1501-1600	109197	715	2401-2500	1877	12
701-800	230532	1508	1601-1700	86368	565	2501-2600	570	4
801-900	266031	1741	1701-1800	68050	445	2601-2700	165	1
						2701-2749	16	1

Results derived from analyses and processing of land cover, land use, vegetation and elevation layers of Albania's GM, are shown in four maps figures 6 to 9 (Lubishtani etAll 2018).



**Figure 6.** Land Cover layer

**Figure 7** Land Use layer

**Figure 8** Vegetation layer

**Figure 9** Elevation layer

## 5. CONCLUSIONS

Modern trends in the world such as globalization, across all aspects of human life and the management of all possible techniques in the world, and in geodesy as a science, has ordered to create a single map of the world where all countries of the world will be presented with several sets data and substrates and homogeneous standards.

Characteristic of the GM is that all the data on the Earth are in one place, with the same structure, in the same format, on the same coordinate system, the same volume and with similar accuracy.

The GM data covers the entire land area with a spatial resolution of 1 km for raster data and scale 1:1,000,000 for vector data, and are in line with the specifications of the International Steering Committee for Global Mapping. Global mapping is an international collaborative initiative through voluntary participation of national mapping organizations of the world, aiming to develop globally homogeneous geographic data set, and to establish concrete partnership among governments, private sectors, data providers and users to share information and knowledge for sound decision-making.

Climate change is a process by which facing the world in these days, and automatically create a need that we geospatial data global of which can manage a various emergency situations such as natural disasters, floods, earthquakes, mudslides, volcanoes etc. With the Global Map dataset being in digital form, it lends itself to various data manipulation and for modeling real life situations.

Global Map dataset may have limited uses at national and local scales. However, Global Map dataset is needed to address global, regional, trans-boundary and in many cases national concerns.

Albanian GM dataset as case study of the research aimed for performing analyses of infrastructural organization of geospatial data in global-intercontinental level, have been developed within PhD research study of Milot Lubishtani (Lubishtani etAll 2020), first author of this paper, under the supervision of prof Bashkim Idrizi, second author of this paper, at the Polytechnic University of Tirana, in cooperation with the Agency for Geospatial Authority of Albania (ASIG), in year 2016 ([www.asig.gov.al](http://www.asig.gov.al)).

Involvement by an organization in the project in generally is categorized in three levels, i.e. as Level A, B and C. Level A means that institution will prepare the data set of own country and other countries, the Level B mean that institution will prepare the data set of own country, and the Level C mean that institution will give all necessary data, preparation will be done by ISCGM (Idrizi etAll 2010). The Republic of Albania participate in global mapping project since 30.06.2016 in Level B, through State Authority for Geospatial Information (ASIG). State Authority for Geospatial Information (ASIG) and geodesy department of the Polytechnic University of Tirana as represent from PhD Candidate developed vector and raster data for GM version 2 for Albania and the data was published in [www.iscgm.org](http://www.iscgm.org). The Republic of Albania within the project for the compilation of the global map is represented by the State Authority for Geospatial Information (ASIG), as the responsible institution for Albania's cartography at the national level. Preparation of Albania's GM data has been proceed in academic level within the geodesy department of the Polytechnic University of Tirana, with aim to support, help and improve young cartography in Albania. Existing topographic maps in scale 1:25.000, high resolution orthophoto images, as well as the official data from governmental institutions has been utilized as source data. Albania is one of the last European countries that has published database at ISCGM, exactly on 14<sup>th</sup> July 2016 has been published the vector and raster data base according to technical specification V2.2.

Global Map data is now downloadable from the web site of UNGIS (<http://ggim.un.org/IGIF/overview>), mostly intended for non commercial use. If someone tries to use these data for commercial purposes must obtain permission from the relevant institution that has developed the data, otherwise, each unauthorized use for commercial purposes is in conflict with the law on copyright and related rights which is prohibited and punishable by (Idrizi etAll 2010).

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