

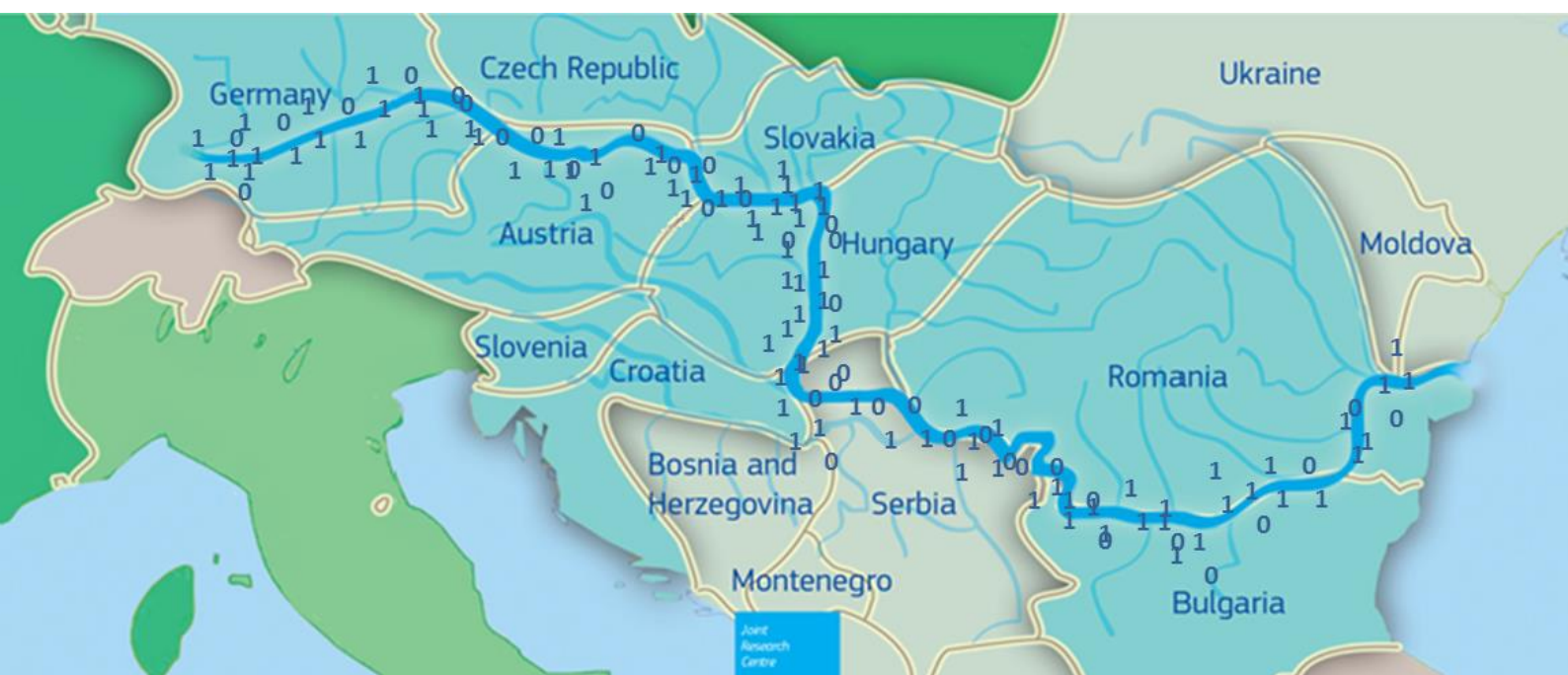
# Danube Reference Data and Services Infrastructure

## Danube\_Net (D1)

### State-of-play and organisational context of data infrastructure in Montenegro

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# 1 Introduction

The EU Strategy for the Danube Region (EUSDR)<sup>1</sup> relies on an integrated approach to encourage better policy development and the alignment of funding and resources through concrete actions and projects. Since the Danube countries share a common territory and face interrelated cross-border issues, the Strategy aims to propose common solutions to the challenges faced by these countries.

However, to propose such solutions, policy-makers need first to be able to access clear and comparable information and understand better the issues involved. Many stakeholders have been collecting data for several years at the regional, national and local levels but at the moment there is still no common access point for harmonised data covering a wide-range of scientific issues and encompassing the whole Danube Region. There is opportunity to make further progress in this area by taking advantage of the investment made by Member States to implement INSPIRE, investments made by EU candidate and other countries in Europe which are developing NSDI, recent progresses on ICT standardisation and other related activities.

For this reason, the JRC with the support of scientific partners of the Danube countries launched project to develop a Danube Data and Services Infrastructure (DRDSI)<sup>2</sup> that will facilitate access to comparable and harmonised data sets on various issues related to the Danube Region. Thanks to its cross-cutting nature, this Infrastructure will contribute to the holistic scientific approach needed to tackle the interrelated and interdependent challenges which the Danube Region is facing.

## 1.1 Outline of the task

Creation of this document is done within Danube\_Net<sup>3</sup> expert group tasks and its aim is to provide overview of current state in Montenegro regarding DRDSI activities. This overview will serve as a basis for assessment of potentials and further collection of information about datasets and data providers within DRDSI identified priorities.

DRDSI, as initiative, will be building sustainable framework which will support EU Strategy for the Danube region with the possibility to have real situation insight and centralised and possibly harmonised data and services access and exchange within four vertical priorities:

- Environment protection
- Navigability
- Irrigation and agricultural development
- Energy production

## 1.2 Outline of the document

Purpose of this document is to characterise the state of play of the national data infrastructures (NDI) in Montenegro with respect to the DRDSI vertical priorities and covers:

- List of key public and private sector data providers. policy-making organisations, research organisations and organisations who can aid stakeholder engagement working within a country, in cross-border contexts or at the regional level;
- The current legal context and funding of initiatives aiming at building a national data infrastructure;
- A list of completed and current projects related to the vertical priorities (either for data production or providing tools to support data-sharing).

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<sup>1</sup> <http://www.danube-region.eu>

<sup>2</sup> <http://drdsi.jrc.ec.europa.eu>

<sup>3</sup> <http://drdsi.jrc.ec.europa.eu/danube-net>

### **1.3 Context of the country and the main players**

Montenegro, country that is part of Danube Region, is independent country from year 2006, with total area of 13 812 km<sup>2</sup> and population of 620 000. Northern part of Montenegro belongs to Danube basin, while southern is in Adriatic basin.

Montenegro has official candidate status for membership in the European Union from 2010, while negotiations on this candidacy were started in 2006.

NSDI in Montenegro is in relatively early stage of implementation. Being small country compared to other countries from region, Montenegro had relatively limited resources, financial and human, for implementation of projects in building national-wide infrastructures in areas related to DRDSI. In last few years this situation has been improved. Because of EU integration process, obligations that this process implies and provided support by EU, there is number of ongoing and planned projects that will contribute in NSDI establishment and delivery of needed content for active participation in DRDSI and EUSDR implementation.

Leaders in these activities are government bodies and public institutions. In some small percentage we have academic and NGO involvement. Similar situation is with building of legislative framework, which is lately enhanced with strong political commitment that is essential for the deep and lasting political reforms which are necessary to fulfil adopted obligatory action plans and roadmaps in processes of transposition and implementation of mandatory EU legislation.

## 2 Data providers

Almost all data produced in Montenegro that can be relevant to DRDSI platform is produced by public authorities.

Jurisdictions and competence of public authorities regarding spatial data is determined on the basis of organisation of public administration and laws that regulates specific areas.

There is also private sector that produce spatial data, but in majority cases these are situations in which public authorities outsource part of production processes within concrete projects to private companies. These companies that work under contracts are in some cases domestic and in some foreign – mostly depends on the scope and needed resources for specific project. In this situations owners of the produced data are public institutions, meaning state, which is positive in some aspects of possibilities for distribution and reuse of data by wider circle of users.

### 2.1 List of data providers

	Name of organisation	Sector	Types of data provided
1.	Ministry of Economy <sup>4</sup>	public	<ul style="list-style-type: none"><li>• Energy resources</li><li>• Mineral resources</li><li>• Geology</li><li>• Production and industrial facilities</li></ul>
2.	Ministry of Agriculture and Rural Development <sup>5</sup>	public	<ul style="list-style-type: none"><li>• Hydrography</li><li>• Land use</li><li>• Agricultural facilities</li><li>• Regulation zones</li></ul>
3.	Ministry of Sustainable Development and Tourism <sup>6</sup>	public	<ul style="list-style-type: none"><li>• Protected sites</li><li>• Land use</li><li>• Planning documents on national level</li></ul>
4.	Ministry of Transport and Maritime Affairs <sup>7</sup>	public	<ul style="list-style-type: none"><li>• Transport networks: railway, road, air and water</li></ul>
5.	Ministry of Health <sup>8</sup>	public	<ul style="list-style-type: none"><li>• Human health</li></ul>

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<sup>4</sup> <http://www.mek.gov.me>

<sup>5</sup> <http://www.minpolj.gov.me>

<sup>6</sup> <http://www.mrt.gov.me>

<sup>7</sup> <http://www.msp.gov.me>

<sup>8</sup> <http://www.mzdravlja.gov.me>

	Name of organisation	Sector	Types of data provided
6.	Real Estate Authority <sup>9</sup>	public	<ul style="list-style-type: none"> <li>• Cartography</li> <li>• Topographic maps with covered data themes</li> <li>• Real-Estate Cadastre registers and maps</li> <li>• Addresses</li> <li>• Orthoimagery</li> <li>• Elevation</li> <li>• Administrative units</li> <li>• Geographical names</li> <li>• Buildings</li> <li>• Utility Cadastre</li> <li>• GNSS data</li> </ul>
7.	Geological Survey Office <sup>10</sup>	public	<ul style="list-style-type: none"> <li>• Energy resources</li> <li>• Mineral resources</li> </ul>
8.	Statistical Office - MONSTAT <sup>11</sup>	public	<ul style="list-style-type: none"> <li>• Demography</li> <li>• Statistical units</li> <li>• Administrative units</li> <li>• Various other statistical data</li> </ul>
9.	Authority for state property <sup>12</sup>	public	<ul style="list-style-type: none"> <li>• State property register</li> </ul>
10.	Authority for the Protection of Cultural Property <sup>13</sup>	public	<ul style="list-style-type: none"> <li>• Protected objects and sites</li> </ul>
11.	Directorate for Railways <sup>14</sup>	public	<ul style="list-style-type: none"> <li>• Railway network</li> </ul>
12.	Directorate for traffic <sup>15</sup>	public	<ul style="list-style-type: none"> <li>• Road network</li> </ul>
13.	Maritime safety Authority <sup>16</sup>	public	<ul style="list-style-type: none"> <li>• Maritime networks</li> </ul>
14.	Port Authority <sup>17</sup>	public	<ul style="list-style-type: none"> <li>• Port management data</li> </ul>
15.	Office for Hydrometeorology and Seismology <sup>18</sup>	public	<ul style="list-style-type: none"> <li>• Atmospheric monitoring</li> <li>• Natural risk zones</li> <li>• Sea regions</li> <li>• Seismical monitoring</li> </ul>

<sup>9</sup> <http://uzn.me>

<sup>10</sup> <http://www.geozavod.co.me>

<sup>11</sup> <http://www.monstat.org>

<sup>12</sup> <http://www.uzi.gov.me>

<sup>13</sup> <http://www.ministarstvokulture.gov.me>

<sup>14</sup> <http://www.dzscg.me>

<sup>15</sup> <http://www.dzscg.com>

<sup>16</sup> <http://www.pomorstvo.me>

<sup>17</sup> <http://www.luckauprava.me>

<sup>18</sup> <http://www.meteo.co.me>

	Name of organisation	Sector	Types of data provided
16.	Environment protection agency <sup>19</sup>	public	<ul style="list-style-type: none"> <li>• Environmental protection</li> <li>• Environmental monitoring</li> <li>• Waste management</li> <li>• Habitats and biotopes</li> <li>• Species distribution</li> </ul>
17.	Water Authority <sup>20</sup>	public	<ul style="list-style-type: none"> <li>• Hydrography</li> <li>• Aquacultural facilities</li> <li>• Water protection</li> </ul>
18.	Forest Authority <sup>21</sup>	public	<ul style="list-style-type: none"> <li>• Land cover</li> <li>• Forests</li> <li>• Biomass</li> </ul>
19.	Veterinary Authority <sup>22</sup>	public	<ul style="list-style-type: none"> <li>• Animal health</li> </ul>
20.	Phyosanitary Authority <sup>23</sup>	public	<ul style="list-style-type: none"> <li>• Plant and crops health protection</li> </ul>
21.	Center for Ecotoxicological Research <sup>24</sup>	public	<ul style="list-style-type: none"> <li>• Environmental research and monitoring</li> </ul>
22.	Directorate for development of small and medium size enterprises <sup>25</sup>	public	<ul style="list-style-type: none"> <li>• Inventory and projects regarding development of SMEs</li> </ul>
23.	Local Municipalities	public	<ul style="list-style-type: none"> <li>• Local planning documents</li> <li>• Land use</li> <li>• Road network</li> <li>• Environmental protection</li> </ul>
24.	Bio-technical Faculty <sup>26</sup>	public - academic	<ul style="list-style-type: none"> <li>• Research data in areas: agriculture, veterinary and forestry</li> </ul>
25.	University of Montenegro, Podgorica <sup>27</sup>	public - academic	<ul style="list-style-type: none"> <li>• Research data in different areas</li> </ul>
26.	Forestry Institute, Podgorica <sup>28</sup>	public - academic	<ul style="list-style-type: none"> <li>• Forests</li> <li>• Biomass</li> </ul>
27.	Institute for standardisation of Montenegro, Podgorica <sup>29</sup>	public	<ul style="list-style-type: none"> <li>• Standards in Montenegro</li> </ul>

<sup>19</sup> <http://www.epa.org.me>

<sup>20</sup> <http://www.upravazavode.gov.me>

<sup>21</sup> <http://www.upravazasume.me>

<sup>22</sup> <http://www.vet.uprava.gov.me>

<sup>23</sup> <http://www.fito.gov.me>

<sup>24</sup> <http://eng.ceti.co.me>

<sup>25</sup> <http://nasme.me>

<sup>26</sup> <http://www.btf.ucg.ac.me>

<sup>27</sup> <http://www.ucg.ac.me>

<sup>28</sup> <http://www.sumins.me>

<sup>29</sup> <http://www.isme.me>

	Name of organisation	Sector	Types of data provided
28.	Institute for Public Health, Podgorica <sup>30</sup>	public	<ul style="list-style-type: none"> <li>• Human health</li> <li>• Environment</li> <li>• Statistical data</li> </ul>

Estimation of readiness of key actors to provide data to DRDSI Platform/Danube Strategy can be evaluated within various aspects.

If we look at this issue from legal side there we can find several main points of view. Most important legal act in Montenegro – Constitution, as well and laws that regulates creation of information systems and registers with topic data, ensure access to data held by the state and other public authorities, and the general policy goal is that information should be publicly available in digital form. On the other side we have strong commitment to EU integration processes and implementation of provisions and action plans that should be accomplished, which implies that public data providers and other key players will have as one of its main goal implementation of legislative acts like INSPIRE directive, and to actively participate in initiatives like DRDSI and Danube strategy.

In practice most common situation is that data is available for free if it is intended for use in some project managed by public institution, or is for official use. For other purposes data is usually not free, or someone can gain only free extract of data or have free insight in datasets.

From the side of technical readiness of data providers to provide data in adequate form we will find various levels. Some providers have already reach high level of required infrastructure which helped in successful harmonisation of data and enabled them to provide access to data via standard network services. Majority of data providers are still on lower level – they have data in various digital formats, some of them have own custom systems, and this implies that utilisation of their data must be preceded by some extra works like extraction, conversion, transformation or similar. At the end we have small percentage of data providers that have some of data only in analog format, and for that data more work is needed in order to make it usable for others.

One specific example is Statistical Office – MONSTAT. This institution produce a number of quality publications from various areas. All publications are freely accessible online on their web site, in form of different types of documents (pdf, word, excel), in Montenegrin and English language. Although only few datasets like demography data originate from this institution, they gather very valuable data from other resources, process it and make useful statistics and overviews. They publish statistical data about geography, climate, environment, population, GDP, investments, agriculture, forestry, industry, trade, tourism, transport, education, health and many other data types. This data can be very useful for DRDSI/EUSDR, especially if it is combined with spatial data.

Listed data providers does not produce data because of financial reasons. If they make income from selling data that is not significant for their financing. They all have planned yearly budget for data production that is their obligation by law, and for most types of usage society and other institutions will have access to their data for free.

When we want to use data for projects like ones that will be in the scope of EUSDR, accuracy of data can be very important. Key data providers in Montenegro, as public bodies, usually have adopted yearly budget that covers data production according to their short and mid-term programmes. In different laws and

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<sup>30</sup> <http://www.ijzcg.me>



regulation acts we can find provisions for some data types about how accurate they should be. For example topographic maps, orthoimagery and planning documents should be updated at least once in five years. Because of these reasons it's hard to estimate willingness and readiness of data providers to provide new data on request. It will depend on concrete request. If data producer don't have funding problems and have in plan production of data that should start soon then we can expect that new data will be produced upon request. Similar to previous, if request for new data is in scope of some project that is supported by Government then new funds can be allocated and end user can expect to receive new data. But if new data is requested from institution that don't have planned data production and funds then data production will not take place.

Looking on data types that providers from table above produce, we can see that in general they cover most of data themes that can be of interest for DRDSI infrastructure. Another question is completeness of data sets, readiness to harmonize that data and to provide adequate ways of access to data. We will find some gaps in data sets, or will not have some specific data at all, but that will need further verification. For example, current estimation is that gaps will be found in road networks, water ways and navigability.

### 3 Policy-making organisations

#### 3.1 Overview of key organisations related to the Danube Strategy

EUSDR introduces wide area of heterogeneous activities to reach its goals. Some of addressed challenges are: need to improve connection among people, modernisation of transport interconnections, to make energy cheaper and more secure, to make development balanced with protection of the environment within a sustainable development approach, joint work on minimisation of risks and disasters such as floods, droughts and industrial accidents, to improve and equalize education and employment, to move up with trade and enterprise...

Such a wide spectrum of activities must be covered by wide legislative framework and will involve most of national level policy making organisations.

Following table contains identified policy making organisations.

	Name of organisation	Government/ regional/local	Policy areas	Relevant projects
1.	Ministry of Economy	Government	<ul style="list-style-type: none"> <li>• Energy resources</li> <li>• Mineral resources</li> <li>• Geology</li> <li>• Production and industrial facilities</li> </ul>	<ul style="list-style-type: none"> <li>• Strategy for regional development 2014 - 2020</li> <li>• COSME – Competitiveness of SMEs<sup>31</sup></li> <li>• Energy efficiency in public buildings</li> </ul>
2.	Ministry of Finance <sup>32</sup>	Government	<ul style="list-style-type: none"> <li>• Taxation</li> <li>• Customs</li> <li>• State property</li> <li>• Statistics</li> <li>• Cartography</li> <li>• State survey</li> <li>• Cadastre</li> </ul>	<ul style="list-style-type: none"> <li>• LAMP – Land Administration and Management Project<sup>33</sup></li> <li>• IMPULS – building NSDI, regional project<sup>34</sup></li> </ul>
3.	Ministry of Foreign Affairs and EU integrations <sup>35</sup>	Government	<ul style="list-style-type: none"> <li>• International cooperation</li> <li>• Management of EU integration processes</li> </ul>	
4.	Ministry of Education <sup>36</sup>	Government	<ul style="list-style-type: none"> <li>• Education</li> </ul>	
5.	Ministry of Science <sup>37</sup>	Government	<ul style="list-style-type: none"> <li>• Science and Research</li> </ul>	

<sup>31</sup> [http://ec.europa.eu/enterprise/initiatives/cosme/index\\_en.htm](http://ec.europa.eu/enterprise/initiatives/cosme/index_en.htm)

<sup>32</sup> <http://www.mf.gov.me>

<sup>33</sup> <http://www.worldbank.org/projects/P106906/land-administration-management-project?lang=en>

<sup>34</sup> IMPULS Project – Cooperation and SDI development in Western Balkan Region, <https://inspire-forum.jrc.ec.europa.eu/pg/news/admin/read/244915/sida-grant-for-cadastre-agencies-in-western-balkans-sdi-development>

<sup>35</sup> <http://www.mvpei.gov.me>

<sup>36</sup> <http://www.mps.gov.me>

	Name of organisation	Government/ regional/local	Policy areas	Relevant projects
6.	Ministry of Culture <sup>38</sup>	Government	<ul style="list-style-type: none"> <li>Cultural heritage objects and sites</li> </ul>	
7.	Ministry of Transport and Maritime Affairs	Government	<ul style="list-style-type: none"> <li>Transport: railway, road, air and water</li> </ul>	
8.	Ministry of Agriculture and Rural Development	Government	<ul style="list-style-type: none"> <li>Agriculture</li> <li>Development</li> <li>Forests</li> </ul>	<ul style="list-style-type: none"> <li>FODEMO - Strengthening Institutions for Sustainable Management of Forests<sup>39</sup></li> <li>MIDAS – Institutional development and strengthening of agriculture<sup>40</sup></li> </ul>
9.	Ministry of Sustainable Development and Tourism	Government	<ul style="list-style-type: none"> <li>Space planning and development</li> <li>Protected sites</li> <li>Environment</li> <li>Tourism</li> </ul>	<ul style="list-style-type: none"> <li>LAMP – Land Administration and Management Project</li> <li>Information system of Environment</li> </ul>
10.	Ministry of Health <sup>41</sup>	Government	<ul style="list-style-type: none"> <li>Health protection and insurance</li> </ul>	
11.	Ministry for Information Society and Telecommunications <sup>42</sup>	Government	<ul style="list-style-type: none"> <li>eGovernment</li> <li>Information society</li> <li>Electronic communications and IT</li> </ul>	<ul style="list-style-type: none"> <li>Strategy for development of Information Society 2012 – 2016<sup>43</sup></li> <li>eGovernment<sup>44</sup></li> </ul>

Involvement of Montenegro relevant institutions in Danube Strategy is currently on relatively low level, but there is big potential for that involvement to be increased in near future.

### 3.2 Support for the national data infrastructure

Following table contains identified organisations providing support for national data infrastructure.

<sup>37</sup> <http://www.mna.gov.me>

<sup>38</sup> <http://www.ministarstvokulture.gov.me>

<sup>39</sup> <http://www.fodemo.com>

<sup>40</sup> <http://www.midas.co.me>

<sup>41</sup> <http://www.mzdravlja.gov.me>

<sup>42</sup> <http://www.mid.gov.me>

<sup>43</sup>

<http://www.mid.gov.me/ResourceManager/FileDownload.aspx?rid=93206&rType=2&file=Strategy%20for%20the%20development%20of%20information%20society%202012%20%E2%80%93%202016.pdf>

<sup>44</sup> <https://www.euprava.me>

	Name of organisation	Key legal acts	Key initiatives	Funding sources (regional/national/external)
1.	Ministry of Sustainable Development and Tourism	<ul style="list-style-type: none"> <li>• Law on Environment<sup>45</sup></li> <li>• Law on Spatial Planning and Construction</li> </ul>	<ul style="list-style-type: none"> <li>• Development of Information system of Environment</li> <li>• INSPIRE</li> </ul>	<ul style="list-style-type: none"> <li>• Montenegro budget (national)</li> <li>• World Bank loan (external)</li> <li>• TAIX (external)</li> </ul>
2.	Ministry of Finance	<ul style="list-style-type: none"> <li>• Law on State Survey and Real Estate Cadastre<sup>46</sup></li> </ul>	<ul style="list-style-type: none"> <li>• Development of NSDI</li> <li>• INSPIRE</li> <li>• IMPULS (regional NSDI)</li> </ul>	<ul style="list-style-type: none"> <li>• Montenegro budget (national)</li> <li>• World Bank loan (external)</li> <li>• International cooperation with several EU countries (external)</li> </ul>
3.	Ministry of Agriculture and Rural Development	<ul style="list-style-type: none"> <li>• Law on Agriculture and Rural Development<sup>47</sup></li> <li>• Law on Agricultural Land</li> <li>• Law on Forests<sup>48</sup></li> </ul>	<ul style="list-style-type: none"> <li>• FODEMO - Strengthening Institutions for Sustainable Management of Forests</li> <li>• MIDAS – Institutional development and strengthening of agriculture</li> </ul>	<ul style="list-style-type: none"> <li>• Montenegro budget (national)</li> <li>• World Bank loan (external)</li> <li>• International cooperation with several EU countries (external)</li> </ul>
4.	Ministry for Information Society and Telecommunications	<ul style="list-style-type: none"> <li>• Law on Electronic Government</li> </ul>	<ul style="list-style-type: none"> <li>• eGovernment</li> </ul>	<ul style="list-style-type: none"> <li>• Montenegro budget (national)</li> </ul>

If we compare list of policy-making organisations with a list of key data providers we can see that there is a lot of overlap. In a number of cases some Ministry created policy and other institution that is in jurisdiction of that Ministry is provider for data covered with that policy.

We can also say that table above is not complete, because we can find elements of national data infrastructure in number of other institutions and legal acts. But if we look at provisions that stipulates creation of information systems and registers which can be considered as parts of national data infrastructure we will get impression that there is no comprehensive legal framework which will be

<sup>45</sup> <http://www.epa.org.me/images/zakoni/zakon%20o%20zivotnoj%20sredini.pdf>

<sup>46</sup>

<http://www.nekretnine.co.me/dok/Law%20on%20State%20Surveying%20and%20Immovable%20Property%20Cadastr e%20-%20OGMN%2040-11%20EN.pdf>

<sup>47</sup> <http://www.minpolj.gov.me/ResourceManager/FileDownload.aspx?rid=42128&rType=2&file=1255077951.doc>

<sup>48</sup>

<http://www.minpolj.gov.me/ResourceManager/FileDownload.aspx?rid=205074&rType=2&file=Zakon%20o%20C5%A 1umama.pdf>

foundation for data infrastructure on national level. Law on Electronic Government is providing just some elements about distribution of data within Government institutions, and providing of data to citizens. For other laws, with one exception, we can say that they are created without too much inter-institutional cooperation and that their focus is just on specific topic data.

National Spatial Data Infrastructure (NSDI) is covered only in *Law on State Survey and Real Estate Cadastre (from 2011)*. In that law we have following elements:

- Definition of NSDI;
- Basics about NSDI establishment, maintenance and use;
- NSDI Council as legal body for coordination;
- Other NSDI details: NSDI subjects, contents, responsibilities, services, metadata, access restrictions, national Geoportal.

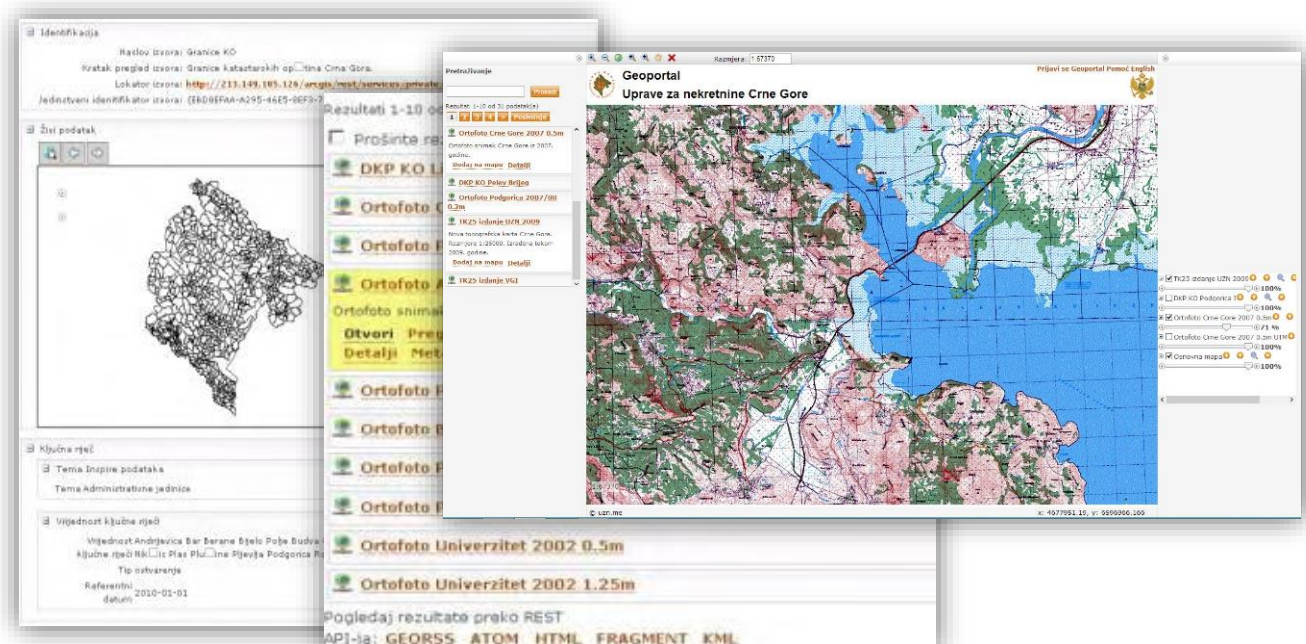
About 35% of INSPIRE Directive articles were transposed in this law.

Problem with this law was in its implementation, mainly because of lack of political support, limited resources and low awareness. Regulations that was needed for implementation were not created and NSDI Council were not formally established.

In the process of EU integration, Chapter 27 – Environment, new roadmap regarding NSDI in Montenegro is created. Conclusion was that NSDI is very important and that new, separate law just for NSDI should be created, and that it should be done during this year. After creation of main law, other sub-laws in this area should be created within two years.

Although there is no formal implementation of NSDI in Montenegro, there are some examples of NSDI elements in practice. In 2010 Real Estate Authority created own Geoportal with published data services, mostly from its own jurisdiction. Available services are: discovery, view and download, and datasets are: orthoimagery, cadastral data, topographic maps, administrative units, some protected zones... Ministry of Sustainable Development and Tourism has also created its own geoportal in 2014, and by now they have published services and datasets of planning documents.

*Datasets and services on Real Estate Authority Geoportal (<http://geoportal.co.me>)*



## 4 Research organisations

Following table contains identified research organisations that are related to EUSDR.

	Name of organisation	University/public research centre/private research firm	Relevant EUSDR projects	Relevant research networks membership
1.	University of Montenegro, Podgorica	University	<ul style="list-style-type: none"> <li>• BalkanGEONet - EO activities in the wider Balkan region<sup>49</sup></li> <li>• RESI - Renewable Energy Studies in Western Balkan Countries<sup>50</sup></li> <li>• ENERESE - Energy efficiency, renewable energy sources and environmental impacts<sup>51</sup></li> </ul>	
2.	Bio-technical Faculty	University	<ul style="list-style-type: none"> <li>• LIFEADA - Lifelong learning for sustainable agriculture in Alps-Danube-Adriatic Region<sup>52</sup></li> <li>• EURO-AGRIWAT - Assessment of EUROpean AGRiculture WATer use and trade under climate change<sup>53</sup></li> </ul>	
3.	Forestry Institute, Podgorica	Public research centres	<ul style="list-style-type: none"> <li>• Publication - The First National Forest Inventory of Montenegro<sup>54</sup></li> <li>• Publication - Consumption of wood fuel in 2011 in Montenegro<sup>55</sup></li> </ul>	
4.	Institute for standardisation of Montenegro, Podgorica	Public research centres		<ul style="list-style-type: none"> <li>• ISO</li> <li>• IEC</li> </ul>

<sup>49</sup> <http://www.balkangeo.net>

<sup>50</sup> <https://resi-tempus.uni-hohenheim.de>

<sup>51</sup> <http://enerese.np.ac.rs>

<sup>52</sup> <http://lifeada.sistemi.hr>

<sup>53</sup> [http://www.cost.eu/COST\\_Actions/essem/Actions/ES1106](http://www.cost.eu/COST_Actions/essem/Actions/ES1106)

<sup>54</sup> [http://www.sumins.me/userfiles/1a\\_The%20First%20National%20Forest%20Inventory%20of%20Montenegro.pdf](http://www.sumins.me/userfiles/1a_The%20First%20National%20Forest%20Inventory%20of%20Montenegro.pdf)

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[http://www.sumins.me/userfiles/2\\_Potrosnja%20drvnih%20goriva%20za%202011%20godinu%20u%20Crnoj%20Gori%20novi%20energetski%20bilansi%20za%20drvna%20goriva.pdf](http://www.sumins.me/userfiles/2_Potrosnja%20drvnih%20goriva%20za%202011%20godinu%20u%20Crnoj%20Gori%20novi%20energetski%20bilansi%20za%20drvna%20goriva.pdf)

	Name of organisation	University/public research centre/private research firm	Relevant EUSDR projects	Relevant research networks membership
5.	University "Donja Gorica", Podgorica <sup>56</sup>	University	<ul style="list-style-type: none"> <li>• Possibilities of applying ecological building materials at facilities in Montenegro provision</li> <li>• Green-Tech-WB: Smart and Green technologies for innovative and sustainable societies in Western Balkans<sup>57</sup></li> </ul>	
6.	University "Mediterran", Podgorica <sup>58</sup>	University		

Research organisations in Montenegro are not recognised as data providers, except in cases of involvement in projects which have some DRDSI related data as outcome. In some cases these organisations produce publications as a result of research projects which can be very valuable for EUSDR and DRDSI platform. Recommendation is that these organisations should be included in related activities because of its scientific knowledge in specific areas.

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<sup>56</sup> <http://www.udg.edu.me>

<sup>57</sup> <http://green-tech-wb.uvigo.es>

<sup>58</sup> <http://unimediterran.net>

## 5 Stakeholder engagement organisations and networks

Following table gives overview of key organisations who can aid stakeholder engagement to support DRDSI work within the Danube Strategy.

	Name of organisation	National/cross-border/Danube Region	Main areas of interest	Other details
1.	EuroGeographics <sup>59</sup>	Europe	Network of European National Mapping, Cadastral and Land Registry Authorities, provides range of products and services	
2.	EUPOS <sup>60</sup>	Europe	Ground based European regional GNSS augmentation system	
3.	INSPIRE Maintenance and Implementation Group <sup>61</sup>	Europe	Support in spatial data infrastructure and implementation – technical and policy	
4.	Montenegro Chamber of Engineers <sup>62</sup>	National	An association of engineers that among others fields covers geoinformation and geodesy.	

In order for DRDSI and EUSDR to be successful there is need to have a large number of organisations and stakeholders from every Danube Region country involved in its activities, so it very important to have organisations and networks which can help in engagement. Organisations which are recognised as data providers and policy-makers can have very important role in this process of engagement.

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<sup>59</sup> <http://www.eurogeographics.org>

<sup>60</sup> <http://eupos.vgtu.lt>

<sup>61</sup> <http://inspire.ec.europa.eu/index.cfm/pageid/5160>

<sup>62</sup> <http://www.ingkomora.me>



## 6 Conclusions

Investigation for purpose of creating this overview included:

- Analyses of on-line resources;
- Analyses of Montenegro legislative framework;
- Contact with relevant institutions and stakeholders (by phone and e-mail);
- Meetings with representatives of some of key institutions.

In some cases it was hard to find relevant information, but main goal is mostly accomplished – all important institutions that should be involved in DRDSI/EUSDR activities in Montenegro are covered.

Taking into account scope and background of DRDSI initiative, most feedback from actors were positive, but readiness and interest differed, depending on institutions specific capacities, infrastructure and possible benefits.

Some of other initiatives are identified to be in compliance with DRDSI which is positive from point of view of popularization and wider acceptance of DRDSI.

In order for DRDSI to be more successful in Montenegro there are several aspects that could be addressed:

- Benefits of platform should be presented to potential key players;
- Awareness raising;
- Networking within country and wider;
- Funding for training and maybe pilot project.