Spatial Data Infrastructures in *Latvia*: State of play 2011
# Report meta-information

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Executive summary

This report presents the status of the NSDI and INSPIRE of Latvia for 2011. The first part introduces the general NSDI-scene in Latvia, meanwhile the second part provides details of the Latvian SDI.

The Latvian SDI approach can be considered as truly national. The SDI building blocks have reached a certain level of operationality. The Ministry of Defence has been assigned responsibility for organising and coordinating the implementation of the national spatial data infrastructure. The Latvian Geographic information agency of Latvia is the leading authority in the implementation of the NSDI. This body is a state administration under supervision of Minister of Defence, and can be currently considered as the main mapping agency of Latvia. The Ministry of Regional Development and Local Government Affairs is responsible for the national geoportal likely to be established in 2012.

A true legal framework for the NSDI was established by the Law on Geospatial Information, which transposes the INSPIRE directive, and was published on 30 December 2009. The law is broader than INSPIRE and is considered as the national law for geodesy, cartography and geospatial information. Cooperation between public and private organizations exist. For instance, the national geoportal will be created in cooperation with the private sector. The transposition of the PSI directive was done by an amendment of the Freedom of Information Act, which entered into force in October 2006. The general rules for data sharing in the Law on Geospatial information have not been developed into licensing policies yet.

From the previous SoP country reports, it appears that geographical datasets partially existed which provide a basis for contributing to the coverage of pan-Europe for the INSPIRE-selected data themes and components. The existing geodetic reference systems and projection systems are standardised, documented and interconvertable. The INSPIRE 2011 MR confirms the statement. 104 data sets have been reported (34, 26 and 44 for Annex I, II and III respectively). However a number of important themes are missing e.g. Geographical grid systems, Geology, Soil, etc. Algorithms for conversion of coordinates to ETRS89 are available for coordinate systems applied in Latvia and for calculation of the geoid heights. The Metadata, as far as available, is provided in Latvian. Accompanying documents are available in Latvian of which some times are written in English.

Metadata are produced for a significant fraction of datasets of the themes of the INSPIRE annexes. The 2011 MR reveals that for the reported datasets of INSPIRE (82% of the data sets have metadata for Annex I, 81% for Annex II and 64% for Annex III). Most of these metadata are compliant with the implementing rules for metadata. The creation of a metadata catalogue is one of the planned activities. Metadata of geographical datasets, which are now available are not coordinated and isolated in different departments and databases. Finally, the Latvian Geographic Information Agency is strongly involved in creating metadata.

A national geoportal is currently not operational. It will be established (in 2012) in the frame of the project “Establishment of the National Geospatial Information Portal and Linking the Thematic GI systems with the Geoportal”. There is a discovery service reported in the MR 2011
but this is related to EuroGeoNames. The MR 2011 reports the existence of 11 view services mainly from the Latvian Geographic Information Agency, State Land Survey, and Rural Support Service of which 7 have compliant metadata according to the implementing rules. Although the MR states that 6 download services exist, only one enabled copies of datasets to be downloaded. No information could be found regarding the implementation of transformation and invoking services.

The Latvian Geographic Information Agency supplies several datasets (and metadata) related to environmental themes. Other data suppliers of environmental themes are: Central Bureau of Statistics, State Land Survey, State Forest Service, Rural Support Centre and State Plant Protection Service. In addition, the INSPIRE MR 2011 reports a number of environmental themes. The Latvian agency for Environment, geology and meteorology has developed an environmental, geology and meteorology information system. The main users are the local governments, the state Environment Service, the State Land Service, the State Forest Service, the Central Bureau of Statistics, and the Nature Conservation Agency.

Some spatial data services make use of OGC CSW, WFS and WMS. The ISO 19115 metadata standard is occasionally applied.
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Abbreviations and acronyms

CSW  Catalogue Service for the Web
DAP  Nature Conservation Agency
EE  Estonia
EU  European Union
GIS  Geographic Information System
GPS  Ground Positioning System
INSPIRE  Infrastructure for Spatial Information in Europe
ISO  International Standardisation Organisation
LGIA  Latvian Geographic Information Agency
LVGMA  Latvijas Vides, Geoloģijas un Meteoroloģijas Aģentūra
LT  Lituania
NDP  National Data Producer
NIUKIB  National Real Estate Cadastre Information System
NSDI  National Spatial Data Infrastructure
OGC  Open Geospatial Consortium
PPP  Public-Private Partnerships
PSI  Public Sector Information
SDI  Spatial Data Infrastructure
SJSC  Latvian Railroad
SLS  State Land Service
SoP  State of Play
TRIPS  Agreement on Trade-Related Aspects of Intellectual Property Rights
UNEGGN  United Nations Group of Experts on Geographic Names
UNSDI  United Nations SDI
VAR  national Address Register
VZD  State Land Survey
WIPO  World Intellectual Property Organisation
WFS  Web Feature Service
WMS  Web Map Service
1. GENERAL INFORMATION

1.1 Method

This report summarises the review of the Latvian NSDI in 2011, and reflects the degree to which the SDI situation in Latvia is similar to the ideas set out in the INSPIRE position papers and in the more recent INSPIRE-implementation papers.

In comparison with the previous country report, this report has been updated to the situation of Spring 2011. In order to achieve this, literature and websites are used to describe the current situation of SDI-development and INSPIRE-implementation in Latvia.


1.2 THE NSDI-Scene in Latvia

1.2.1 National Infrastructure of geospatial data

The Cabinet Order No 718 of 20 November 2007 approved the Concept of development of geospatial information in Latvia containing provisions for the establishment of a national infrastructure for spatial data in Latvia and the preparation of a Law on Geospatial information. This Order also assigns the Ministry of Defence as the authority responsible for coordinating the implementation of the INSPIRE directive in Latvia.

The Ministry of Defence as the authority responsible for the implementation of national policy in geodesy, cartography and geospatial information, in cooperation with holders of spatial data sets, is responsible for all issues connected with production, maintenance and use of spatial data, including preparing and updating spatial data sets and the corresponding metadata, observing existing data standards and specifications, establishing and implementing a single system for classification of spatial objects, promoting shared use and re-use of data and services, and establishing standardised regulations of use of and access to spatial data sets.

The Ministry of Defence operates as the coordinating authority of the national spatial data infrastructure, and supervises Latvian Geographic Information Agency. This agency can be considered as the producer of the most important spatial reference data and provider of related services.

Cabinet Order No 737 of 27 November 2007 approved a concept of development of a common national geoportal being a single point of access to geographic information. This order assigned the former Secretariat of the Minister for special assignments in electronic government affairs as
the authority responsible for establishing the geoportal. The tasks and responsibilities of the Secretariat were transferred to the on Ministry of Regional Development and Local Government Affairs 1 June 2009. As such, the Ministry of Regional Development and Local Government Affairs is responsible for all issues connected with the creation of electronic services involving processing of spatial data and the availability of these services on the single national geoportal, including the, development of computer network services for the geoportal, the connection of the geoportal with branch-specific geographical information systems, and the interoperability with other geopontals in the European Union.

The provisions of the INSPIRE directive have been fully transposed in the legislation of Latvia by the Law on Geospatial information which came in force on 13 January 2010.


In spring of 2010, the Ministry of Defence submitted to the Cabinet a report on the progress of implementation of the concept of development of geospatial information in Latvia and transposition and implementation of the INSPIRE directive. The report states the successful implementation of the concept of development of geospatial information in Latvia and indicates the following additional activities:

1. preparing Cabinet regulations pursuant to the responsibilities delegated by the Law on Geospatial information, among which the most important are Regulations on the single state geospatial information portal and Regulations on the mandatory content of the regulations governing the use of geospatial data sets and procedure of obtaining a permit;
2. participation and involvement of experts and subordinate institutions of ministries in preparing the implementing rules regarding the interoperability of spatial data sets and services;
3. systematic activities of holders of spatial data sets linked with the creation and maintenance of spatial data sets and corresponding metadata in order to ensure their availability at the national geoportal;
4. establishment of the common national geospatial information portal and gradual improvement of its functionality in order to ensure equal access to geospatial data sets.

Finally, many tasks related to establishment of the national SDI in Latvia are implemented under a number of projects co-financed by the EU structural funds, such as:

- Project Establishing a common national geospatial information portal and connecting branch-specific GIS with the portal implemented by the State Regional Development Agency;
- Project Establishment of an infrastructure for geospatial reference data information implemented by the Latvia Geographic Information Agency;
• Project Development of a geospatial information system for geospatial data of the State Land Service implemented by the State Land Service; and
• Project Stage 1 of the information system for territorial development planning in local governments and management and monitoring of the infrastructure and real property implemented by the State Regional Development Agency.

All of the above projects are co-financed under the EU fund operational programme supplement Infrastructure and services sub-activity 3.2.2.1.1 Development of information systems and electronic services. The list of high-priority projects under this activity was approved by Cabinet Order No 584 of 7 October 2008 On the list of high priority projects for the development of electronic government and information society which was later adjusted by Cabinet Order No 147 of 15 March 2010 On the list of high-priority projects for the development of an electronic government and the information society.
2. Details of the Latvia NSDI

2.1 Introduction

This chapter presents the component details of the NSDI of Latvia. The following components of Latvian SDI are described in detail: Coordination and organizational issues, Legal framework and funding, Data for themes of the INSPIRE Annexes, Metadata, Network services, Thematic environmental data and Standards. It ends with the use and efficiency of the NSDI in Latvia.

2.2 Component 1: Coordination and organizational issues

The Ministry of Defence has been assigned responsibility for organising and coordinating the implementation of national policy in geodesy, cartography and geospatial information (including the national spatial data infrastructure). This responsibility has been delegated to the Section for Geospatial Policy Planning and Supervision of the Crisis Management Department, Ministry of Defence. The Ministry of Defence prepared a Concept of development of geospatial information in Latvia which enables the establishment of the national spatial data infrastructure in Latvia. In addition, the Ministry has also been assigned by Cabinet Regulations No 718 of 20 November 2007 as the authority responsible for coordinating the implementation of the INSPIRE directive in Latvia. Other Ministries are responsible for particular tasks such as the development of spatial data sets and corresponding metadata. These Ministries are: the Ministry of Defence, the Ministry of Environment, the Ministry of Regional Development and Local Government Affairs, the Ministry of Justice, the Ministry of Transport, the Ministry of Agriculture, the Ministry of Economic Affairs, the Ministry of Healthcare, the Ministry of Education and Science, the Ministry of Culture, and the Ministry of Interior.

The provisions of the INSPIRE directive have been fully transposed in the legislation of Latvia by the Law on Geospatial information which came in force on 13 January 2010.

Pursuant to the Law on Geospatial information, the Ministry of Defence and the Ministry of the Environment cooperate to represent Latvia in the EU institutions in matters concerning the establishment of the infrastructure for geographic information in the Community and coordination and approval of draft regulations governing the operation of the infrastructure by the EU institutions.

The implementation of technology issues is mainly covered in The Concept of Development of National Geospatial Information Portal. This document presents a technological solution enabling the geoportal to operate as a single point of access to geographic information according to the principle of a “one-stop agency”, and was also adopted by the Cabinet of Ministers on the 27th of November 2007 (Cabinet Order No 737). Both concepts are cross-linked to each other therefore they have to be implemented together. The Ministry of Regional Development and Local Government Affairs took over the obligations of the Secretariat of Special Assignments.
Minister for Electronic Government Affairs after the reorganization of the secretariat in June 2009. The Law on Geospatial information assigns the Ministry of Regional Development and Local Government Affairs as the administrator of the geoportal. VRAA, a body reporting to the Ministry of Regional Development and Local Government Affairs, as the contractor under project *Establishing a common national geospatial information portal and connecting branch-specific GIS with the portal* is responsible for the establishment and maintenance of the geoportal.

The Latvian Geographic information agency of Latvia (LGIA) is the leading authority in the implementation of the national policy of Latvia in geodesy, cartography, and geospatial information. This body is a state administrative institution under supervision of Minister of Defence. It was established in accordance with the order No.821 of the Cabinet of Ministers of December 21, 2005 and is the successor of the State Land Service in the field of geodesy and cartography.

Pursuant to the Law on Geospatial information, the Latvian Geographic information agency of Latvia has the following tasks:

1. to establish and maintain the national geodetic system and the database consisting of geodetic points;
2. to establish and maintain a system of permanent global positioning base stations "Latvijas Pozicionēšanas sistēma" (Latvian Positioning System – LatPos);
3. to ensure geodetic services related to geomagnetic and gravimetric measurements and other geodetic services that should be available to the public;
4. to provide expert opinions on results of geodetic work on request;
5. to obtain, prepare and update the following spatial reference data for civil and military needs:
   a. imagery of terrestrial surface, remote sensing and orthophotos within the scale range of 1:2000 and 1: 50 000.
   b. Elevation;
   c. Topography within the scale range of 1:2000 and 1: 250,000; and
   d. data supporting the tasks of the National Armed Forces and their participation in the North Atlantic Treaty Organisation;
6. to summarise information on toponyms necessary for geodetic and cartographic activities;
7. to determine geodetic coordinates of border signs marking the border of the Republic of Latvia and ensure that they are displayed on maps, in accordance with international agreements.

The following organisations are considered to be the main data providers in Latvia: the Latvian Geographic information agency of Latvia, State Land Survey, Central bureau of Statistics, Spatial Planning Centre, State Forest Service, Road Traffic Safety Directorate, and the largest municipalities – Riga City Council. As the main users, the following organisations are considered: Spatial Development Planning Centre, National Armed Forces - Geoinformation Bureau, State Police, Customs, State Fire fighting and Rescue Service, Latvian Road Administration, SJSC „Latvijas Dzelzceļš” (Latvian Railway), State Inspection for the Protection
of Cultural Heritage, Schools and universities, State Real Estate Agency, Municipalities, and utilities (gas, energy, telecommunications).

The following figure presents the coordination and organisational structure of the NSDI in Latvia.

In order to ensure the implementation of the issues related to INSPIRE, the Ministry of Defence on the basis of tasks set out in the Law on Geospatial information has established a permanent working group including representatives of all ministries involved in establishing the infrastructure of geospatial information. This working group held meetings to discuss the participation of holders of spatial data in the process of developing specifications for the themes of data under Annexes II and III to the INSPIRE directive, the preparation of the national report on the implementation of the INSPIRE directive in Latvia, the preparation of field-specific
policy planning documents for 2011 – 2013, and the spatial reference data necessary for the implementation of these policies.

2.2.1 Conclusions of Component 1

The Latvian SDI approach is truly national. SDI building blocks have reached a certain level of operationality. The Ministry of Defence has been assigned responsibility for organising and coordinating the implementation of the spatial data infrastructure. The Latvian Geographic information agency of Latvia is the leading authority in the implementation of the NSDI. This body is a state administrative institution under supervision of Minister of Defence, and can be currently considered as the main mapping agency in Latvia. The Ministry of Regional Development and Local Government Affairs is responsible for the national geoportal likely to be established in 2012. The main data users are not strongly involved in the NSDI-coordination. In addition, an organisation of the type ‘national GI-association’ is not involved in the coordination of the SDI as well. In general, the main data producers only from the public sector are participating in the SDI

Based on these conclusions we score the indicators as follows:

- The approach and territorial coverage of the SDI is truly national
- One or more components of the SDI have reached a significant level of operationality (2)
- The officially recognised or de facto coordinating body of the SDI is a NDP, i.e. a NMA or a comparable organisation (Partially)
- The officially recognised or de facto coordinating body for the SDI is an organisation controlled by data users (No)
- An organisation of the type ‘national GI-association’ is involved in the coordination of the SDI (No)
- Producers and users of spatial data are participating in the SDI (No)
- Only public sector actors are participating in the SDI
2.3 Component 2: Legal framework and funding

2.3.1 Legal framework

Before the INSPIRE directive, Latvia had already been working on the establishment of a legal framework for geographic information for a couple of years. However, before the adoption of the law implementing the INSPIRE directive, an earlier draft Law on Geospatial Information was attempted, but this was never adopted because no final agreement could be reached between the organizations involved.

The Law on the State Land Service was adopted in 1992, and adapted by the Cabinet of Ministers Order No.674 “On Reorganisation of the State Land Service” of October 18, 2005. As a result, the geodesy and cartography function was taken over by the Latvia GeoInformatic Agency (LGIA), and the surveying work was delegated to a new public limited company – Latvian State Surveyor. Currently, the operation of the SLS is regulated by the regulations of the Cabinet of Ministers No. 439 “Regulations on the State Land Service” of May 30, 2006. SLS has many agreements on data exchange with several public institutions, such as the Ministry of the Interior, the State Forest Service, the Construction, Energy, and Housing State Agency, the Register of Enterprises, the Central Statistical Bureau, the Centre of Emergency and Disaster Medicine, the Electronic Communication Office, the State Education Development Agency and the Environment, Geology and Meteorology Agency, the Population Register of the Office of Citizenship and Migration Affairs, the state agency “Latvian Geospatial Information Agency” and the State Inspection for Heritage Protection. Agreements also exist with more than 400 local governments.

On December 1, 2005, the Parliament reviewed in the final reading and adopted the Law on the State Cadastre of Real Properties as proposed by the experts of the SLS, thus completing the process of more than ten years of drafting a law that would ensure the coordinated administrative, organisational and technical functioning of the State Cadastre of Real Properties and would enable obtaining, registration, maintenance and use of updated textual and spatial data.

Pursuant to the Law on State Administration, the state and local government institutions may cooperate both on a specific occasion or permanent bases signing interdepartmental agreements or cooperation agreements. This cooperation model is applied also to ensure permanent cooperation for shared use of geospatial information. Thus, for instance, Latvian Geographic Information Agency has signed an interdepartmental agreement with State Land Survey on the exchange of geographic information, the Ministry of Defence has signed an interdepartmental agreement with the Ministry of Interior for regular delivery of geographic information to bodies reporting to the Ministry of Interior, the Latvian Geographic Information Agency has signed a cooperation agreement with the Rural Support Service for delivering up-to-date geographic information enabling a unified administration of Single Area Payments, and the State Land Survey has signed separate interdepartmental agreements with other government institutions enabling the data provision from the National real estate cadastral information system.
The Ministry of Defence is involved in developing the Cabinet Regulations on the mandatory content of regulations governing the use of geographic data sets and procedures for obtaining a permit. These Cabinet Regulations intend to introduce the use of licences enabling government or local authorities to perform all activities related to geographic data necessary for performing their tasks and functions and to simplify and fasten the permits delivery. These Regulations are binding on government as well as local authorities and enterprises designated as holders of geographic data sets and promote the shared use of these resources.

The Ministry of Regional Development and Local Government Affairs has prepared Regulations regarding the national geoportal (not approved as yet) which will be used as the basis for organising the cooperation between the administrator of the geoportal and holders of the geographic data sets in order to ensure the availability of these data sets and metadata at the geoportal.

A true legal framework for the NSDI was established by the Law on Geospatial Information, which transposes the INSPIRE directive, was published on 30 December 2009 in the Official Journal and entered into force on 13 January 2010. The law is broader than INSPIRE and is considered as the national law for geodesy, cartography and geospatial information. This law has completely transposed the provisions of the INSPIRE directive and established basic principles for obtaining, maintaining and using geographic information, specifying, for instance, provisions for mandatory storage of metadata for spatial data sets, standard regulations for the use of spatial data sets indicating the most significant national geospatial reference data, etc. The law contains numerous delegations to cabinet regulations that are necessary to ensure that the implementation of the national spatial data infrastructure is technically successful. The majority of these regulations are to be complete by 2011.

### 2.3.2 Public-private partnerships (PPPs)

There is a cooperation between public and private organizations. For instance, it was intended to create the national geoportal in cooperation with the private sector which should be operational in 2012.

### 2.3.3 Policy and legislation on access to and re-use of public sector information (PSI)

The law on Freedom of Information was adopted by the Saiema (Parliament) in October 1998 and signed by the State President in November 1998. It guarantees public access to all information in “any technically feasible form” not specifically restricted by law. Information can only be withheld if specifically provided by a statute; e.g. information for internal use of an institution; commercial secrets; information about the private life of an individual, certification, examination, project, tender and similar evaluation procedures. Individuals may use it to obtain their own records.

Latvia has transposed both Directive 2003/4 on the access to environmental information and Directive 2003/98 on the re-use of PSI. The transposition of the PSI directive was done by an
amendment of the Freedom of Information Act, which entered into force in October 2006. This act was complemented by Cabinet Regulation No. 940 “Regulation on the Charged Services of Information Provision”, and Cabinet Regulation No. 338 “The Procedure of Granting an Exclusive Right to Reuse of Information and Publication of Information on Granting of Such Right”.

### 2.3.4 Legal protection of GI by intellectual property rights

The Latvian Government has joined the Bern Convention and signed the TRIPS Agreement in 1998. Major intellectual property protection legislation is in effect since 1993. A new copyright act dates from 2000 and is in force since 2002. The current law corresponds with WIPO Copyright, TRIPS, and the European directive on the legal protection of databases. The Directive of 2001 regarding copyright in the information society was implemented into the Latvian Copyright Act by the Statutory Instrument No. 16 of 2004 [European Communities (Copyright and Related Rights)] Regulations 2004. The law is in force since 22 April 2004.

The term of copyright protection is seventy years after the author’s death, while database protection is granted for fifteen years after the database is formed. Geographical maps, plans, sketches, and moulded works which relate to geography, topography and other sciences, are explicitly mentioned as protected works.

During the transposition of the INSPIRE directive, the intellectual property rights on geographic data and the related exceptions were considered to be most problematic. With the help of the Ministry of Culture, a solution was found, and the intellectual property rights of geographic data owners will be governed according to the Copyright law.

### 2.3.5 Restricted access to GI further to the legal protection of privacy

Article 96 of the Latvian Constitution explicitly recognizes the right to privacy by stating that everyone has the inviolable right to private life, home and correspondence. Article 17 of the Constitutional Law on Rights and Obligations of a Citizen and a Person secures the privacy of communications subject only to a judge’s order.

A law on data protection was adopted by the Parliament on 23 March 2000. It is based on the EU directive on the processing of personal data and the Council of Europe Convention nr. 108. Latvia has implemented Directive 2002/58 on privacy and electronic communications with a framework of regulations. Latvia is a member of the Council of Europe and signed the Convention for the Protection of Individuals with Regard to Automatic Processing of Personal Data on 11 February 2000. It has signed and ratified the European Convention for the Protection of Human Rights and Fundamental Freedoms.

### 2.3.6 Licensing framework

The general rules for data sharing in the Law on Geospatial information have not been developed into licensing policies yet. During 2010, rules of the Cabinet of Ministers were developed that serve as a background for the development of a common approach to data sharing in Latvia.
Licensing of datasets provided by SLS is based on individual contracts. Data, including cadastral data and the national address registry, is available to any interested person, taking into account privacy requirements. They are distributed on paper and in digital form. Some data are available freely on the website of the SLS, while for larger data sets a subscription agreement has to be arranged with SLS.

Other examples of access and licensing policies can be found in the Agriculture Data Centre, the Land Parcel Identification Register, the State Register of Forests, the State Fire and Rescue Service, and Latvian Geographic Information Agency.

### 2.3.7 Funding model for SDI and pricing policy

Development of SDI initiatives is financed from three different sources:

- State grants (mostly for civil mapping);
- State investments programs (base information and military mapping);
  - Contributions from the SLS revenues;
  - NATO-grants for Ministry of Defence.
- Project funding partly from EU Structure Funds.

For the implementation of INSPIRE, no common national funding is foreseen. All costs have to be carried by the institution that implements particular measures. This is usually done either by asking for a part of the State budget, or by looking for funding through a European project.

Activities related to the preparation of metadata, harmonisation of spatial data and development of computer network services are mainly implemented under separate projects. Expenditures planned under these projects has been specified in Cabinet Regulations No 147 of 15 March 2010 *On the list of high-priority projects related to electronic government and development of information society*:

<table>
<thead>
<tr>
<th>No</th>
<th>Project theme</th>
<th>Body responsible for implementing the project</th>
<th>Total eligible expenditure under the project (LVL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.</td>
<td>Development of geospatial information system for geospatial data of the State Land Service</td>
<td>State Land Service</td>
<td>2,300,500</td>
</tr>
<tr>
<td>19.</td>
<td>Establishing a common national geospatial information portal and connecting branch-specific GIS with the portal</td>
<td>State agency <em>State Regional Development Agency</em></td>
<td>2,014,446</td>
</tr>
<tr>
<td>22.</td>
<td><em>Stage 1 of the information system for territorial development planning in local governments and management</em></td>
<td>State agency <em>State Regional Development Agency</em></td>
<td>1 349 228.28</td>
</tr>
</tbody>
</table>

1 The project numbers have been retained as they appear in Cabinet Regulations No 147 of 15 March 2010
and monitoring of the infrastructure and real property

<table>
<thead>
<tr>
<th></th>
<th>Establishment of a national information infrastructure for geospatial reference data</th>
<th>State agency Geospatial Information Agency of Latvia</th>
<th>1 000 000.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>25.</td>
<td>Stage 2 of the implementation of the information system for territorial development planning in local governments and management and monitoring of the infrastructure and real property in the districts of Latvia</td>
<td>State agency State Regional Development Agency</td>
<td>875 000.00</td>
</tr>
<tr>
<td>35.</td>
<td>Establishment of a format for the exchange of data in geographical information systems for the purposes of spatial and territorial planning in accordance with the INSPIRE directive</td>
<td>State agency State Regional Development Agency</td>
<td>895 000.00</td>
</tr>
<tr>
<td>49.</td>
<td>Establish the exchange of data in geographical information systems for the purposes of spatial and territorial planning in accordance with the INSPIRE directive</td>
<td>State agency State Regional Development Agency</td>
<td>895 000.00</td>
</tr>
</tbody>
</table>

With regard to pricing policy, under the Freedom of Information Law, general accessible information which does not require any additional processing has to be provided free of charge. Other information can be charged for, but the charges cannot exceed the expenses of the searching for, additional processing and copying of the documents or information. Charges may be waived or reduced by the institution.

SLS aims at covering costs for the preparation (including copying) and distribution of information but does not pursue any profit from the data distribution. A large amount of data can be viewed freely on the SLS website. For other data, the prices are regulated by the Regulations of Cabinet No. 147 “Regulations for price list of paid services provided by the SLS” of February 14, 2006, and the Regulations No. 561 “Regulations on state fee for cadastral certificate” of July 4, 2006. The Procedure of payments for paid services of the SLS is regulated by the Regulations of CM No. 727 “Procedure of payments for paid services provided by the State Land Service” of August 29, 2006.

2.3.8 Conclusions of Component 2

A true legal framework for the NSDI was established by the Law on Geospatial Information, which transposes the INSPIRE directive, and was published on 30 December 2009. The law is broader than INSPIRE and is considered as the national law for geodesy, cartography and geospatial information. Moreover a strategy plan exists. There is a cooperation between public and private organizations. For instance, the national geoportal will be created in cooperation with the private sector. The transposition of the PSI directive was done by an amendment of the

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2 The project has not been approved yet
Freedom of Information Act, which entered into force in October 2006. The general rules for data sharing in the Law on Geospatial information have not been developed into licensing policies yet.

Based on these conclusions we score the indicators as follows:

- There is a legal instrument or framework determining the SDI-strategy or –development
- There are true PPP’s or other co-financing mechanisms between public and private sector bodies with respect to the development and operation of the SDI-related projects (Partially)
- There is a freedom of information (FOI) act which contains specific FOI legislation for the GI-sector (Partially)
- GI can specifically be protected by copyright
- Privacy laws are actively being taken into account by the holders of GI (No Information found)
- There is a framework or policy for sharing GI between public institutions (No)
- There are simplified and standardised licences for personal use (No)
- The long-term financial security of the SDI-initiative is secured (No)
- There is a pricing framework for trading, using and/or commercialising GI (No)
2.4 Component 3: Data for themes of the INSPIRE annexes

2.4.1 Data sets of different resolutions covering the INSPIRE and other themes

Coordinate reference systems. Supplier: Latvian Geographic Information Agency

Geographical names at scales: 1 : 2000/5000/10,000/50,000/250,000/1000,000. Supplier: Latvian Geographic Information Agency

Administrative units at scales: Suppliers: Latvian Geographic Information Agency and State Land Survey.

Addresses. Supplier: State Land Survey.

Cadastral parcels. Supplier: State Land Survey.

Transport networks at scales: 1 : 2000/5000/10,000/50,000/250,000/1000,000. Suppliers: Latvian Geographic Information Agency.

Hydrography (water bodies) at scales 1 : 2000/5000/10,000/50,000/250,000/1000,000. Supplier: Latvian Geographic Information Agency.

Protected sites. Supplier: State Inspectorate for Heritage.

Elevation at scales: 1 : 2000/5000/10,000/50,000/250,000. Supplier: Latvian Geographic Information Agency.

Land cover at scales: 1 : 2000/5000/10,000/50,000/250,000. Supplier: Latvian Geographic Information Agency.

Orthoimagery at different resolutions. Supplier: Latvian Geographic Information Agency.

Statistical units. Supplier: Central Bureau of Statistics.

Buildings at scales 1 : 2000/5000/10,000/50,000. Suppliers: Latvian Geographic Information Agency and State Land Survey.


Utility and governmental services at scales 1 : 2000/5000/10,000/50,000. Supplier: Latvian Geographic Information Agency.

Environmental monitoring facilities at scales 1 : 2000/5000/10,000/50,000. Supplier: Latvian Geographic Information Agency.

Production and industrial facilities at scales 1 : 2000/5000/10,000/50,000. Supplier: Latvian Geographic Information Agency.

Agricultural and aquaculture facilities at scales 1 : 2000/5000/10,000/50,000. Supplier: Latvian Geographic Information Agency.

Area management/restriction/regulation zones and reporting units at scale 1 : 10,000. Supplier: Latvian Geographic Information Agency.

Energy resources at scales: 1 : 2000/10,000/50,000/250,000. Supplier: Latvian Geographic Information Agency.

Mineral resources at scales 1 : 10,000/50,000/250,000. Supplier: Latvian Geographic Information Agency.

### 2.4.2 Geodetic reference systems and projections

The Latvian Geodetic Coordinate System 1992 is based on the geodetic datum ETRS89.

The projection system is Transverse Mercator (conformal transverse cylindrical projection), central meridian 24°E, scale factor 0.9998 at 24°.

The ellipsoid GRS-80 is used for satellite data.

For mapping at national and regional level the Latvian Geodetic Coordinate System 1992 is used (same as for EE, LT). Main scales applied are 1:250,000; 1:50,000;and 1:10,000.

Algorithms for conversion of coordinates to ETRS89 are available for coordinate systems which are available in Latvia and for calculation of the geoid heights in the Latvian area.

Height assessment is done according to the Baltic Normal Heights System of 1977.

### 2.4.3 Quality of the data

In most cases, the holders of geographic data have developed their own internal procedures to ensure the quality of their data. In order to assess the quality of the geographic data, procedures have been introduced. For example: the Latvian Geographic Information Agency has introduced a multi-stage mechanism for the control of quality of their data. This inspection process comprises automated, manual and field data collection methods. The procedure for preparing the land register data kept by the Rural Support Service includes the topological verification using computer programmes. The quality of data kept by the State Forest Service and the State Plant Protection Service is verified at the point of data input using parameters specified in data classification catalogues and applying geometry requirements for spatial objects. The State Land Survey has ensured that the data quality is compliant with the requirements specified in regulations and the single data specifications. Its data are subjected to various spatial object topology verifications and are compared with other sets of spatial reference data, such as orthophotos, maps and state motorways.

In addition, the Latvian Geographic Information Agency has prepared an internal document *General procedures for assuring the quality of geospatial information*. The document has been prepared in accordance with the requirements of standards ISO 19113, ISO 19114 and ISO 19128, and presents a general procedure for assuring the quality of geospatial reference data.
The data quality requirements are gradually introduced into data set specifications and the relevant data production technology at the Latvian Geographic Information Agency.

Two problems have been identified as significant regarding the data quality:

- limited funds for assuring quality, which results in the simplification of methods for quality verification and identification of errors embracing only the most important quality criteria;
- insufficient shared use of geographic data, as a result of which the sets of geospatial information that are created are not always precisely tied up with the reference coordinate system and have low interoperability.

### 2.4.4 Interoperability and harmonisation of data

The work on interoperability and data harmonisation is very limited. Specific information regarding these issues has not been found.

### 2.4.5 Language and culture

Metadata, as far as available, is provided in Latvian. Accompanying documents are available in Latvian of which some are in English.

Geographical names are managed in Latvian with original information on the names of the places. As secondary names Livonian names and dialectal (Latgalian) names may be accepted when standardizing geographical names. State, regional and local toponymic dictionaries are planned. Four unofficial regional dictionaries (containing mainly names of natural features) have been published since 1991. Latvia is member of UNGEGN (United Nations Group of Experts on Geographical Names).

In 2009 the gazetteer of Latvia has been published. The publication consists of a gazetteer and four appendices, including two maps at scale 1:1 000 000. The gazetteer includes the names of the most significant geographic objects of Latvia – all the cities and towns, the largest villages, the main features of the Baltic Sea and coast, the largest lakes, the longest rivers, uplands and their highest hills. The gazetteer is compiled using the Place Names Database of Latvia, the Laboratory of Toponymy, Department of Cartography, Latvian Geographic Information Agency, as well as maps compiled by the Department of Cartography. The gazetteer shows official names for populated places: cities, towns and villages in accordance with the State Register of Addresses. In some cases the second, traditional name is given in brackets. Moreover, the gazetteer shows official names for administrative and territorial division units.

### 2.4.6 Conclusions of Component 3

Already from the previous SoP country report geographical datasets partially existed which provide a basis for contributing to the coverage of pan-Europe for the INSPIRE-selected data themes and components while the geodetic reference system and projection systems are standardised, documented and interconvertable. The INSPIRE 2011 MR confirms the statement.

104 data sets have been reported (34, 26 and 44 for Annex I, II and III respectively). However a
number of important themes are missing e.g. Geographical grid systems, Geology, Soil, etc. Algorithms for conversion of coordinates to ETRS89 are available for coordinate systems applied in Latvia and for calculation of the geoid heights. The Metadata, as far as available, is provided in Latvian. Accompanying documents are available in Latvian of which some times are written in English.

Based on these conclusions we score the indicators as follows:

- Geodatasets exist which provide a basis for contributing to the coverage of pan-Europe for the INSPIRE-selected data themes and components
- The geodetic reference system and projection systems are standardised, documented and interconvertable
- There is a documented data quality control procedure applied at the level of the SDI (Partially)
- Concern for interoperability goes beyond conversion between different data formats (No Information found)
- The national language is the operational language of the SDI
- English is used as secondary language (Partially)
2.5  **Component 4: Metadata**

2.5.1  **Availability of metadata**

The concept of development of geographic information in Latvia contains a mandatory provision that the holders of data shall create metadata for their spatial data sets, update the metadata on a regular basis and ensure that the most up-to-date metadata are available on the geoportal.

Recent metadata development is undertaken with international projects like NaturNet-Redime and the UNSDI initiative which is being prepared also in Latvia. The GeoPortal will be the central place through which metadata can be published and used.

From the INSPIRE MR 2011, it appears that 82% of the reported Annex 1 datasets, 81% of the Annex 2 datasets and 64% of the reported Annex 3 datasets have metadata.

2.5.2  **Metadata catalogues**

The creation of a metadata catalogue is one of the planned activities. Metadata of geographical datasets, which are now available are not coordinated and isolated in different departments and databases.

The results of INSPIRE MR 2011 presents that all the existing metadata for the datasets related to the themes of Annex 1 and 2 are complaint with the metadata implementing rules. For the datasets related to the themes of Annex 3 this is slight less.

2.5.3  **Metadata implementation**

The Latvian Geographic Information Agency is strongly involved in creating metadata. The State Land Survey, Central Bureau of Statistics and other organisations have produced metadata as well. So far, there is no quality control of the metadata.

2.5.4  **Conclusions of Component 4**

Metadata are produced for a significant fraction of datasets of the themes of the INSPIRE annexes. The 2011 INSPIRE MR reveals that for the reported datasets of INSPIRE (82% of the data sets have metadata for Annex I, 81% for Annex II and 64% for Annex III). Most of these metadata are compliant with the implementing rules for metadata. The creation of a metadata catalogue is one of the planned activities. Metadata of geographical datasets, which are now available are not coordinated and isolated in different departments and databases. Finally, the Latvian Geographic Information Agency is strongly involved in creating metadata.

Based on these conclusions we score the indicators as follows:
- Metadata are produced for a significant fraction of geodatasets of the themes of the INSPIRE annexes

- One or more standardised metadata catalogues are available covering more than one data producing agency (Partially)

- There is a coordinating authority for metadata implementation at the level of the SDI (No Information found)
2.6 Component 5: Network Services

2.6.1 Geoportal(s)

Pursuant to the concept of development of geospatial information in Latvia, the Law on Geospatial information contains a separate section dealing with establishment and operation of the GII prescribing the establishment of a single national geoportal and ensuring that the following geospatial information services are provided as a minimum:

- discovery services making it possible to search for spatial data sets and services on the basis of the content of the corresponding metadata and to display the content of the metadata;
- view services making it possible, as a minimum, to display, navigate, zoom in/out, pan, or overlay viewable spatial data sets and to display legend information and any relevant content of metadata;
- download services, enabling copies of spatial data sets, or parts of such sets, to be downloaded and, where practicable, accessed directly;
- transformation services, enabling spatial data sets to be transformed with a view to achieving interoperability;
- services allowing direct use of spatial data.

A national geoportal is currently not operational. It will be established in the frame of the project “Establishment of the National Geospatial Information Portal and Linking the Thematic GI systems with the Geoportal”.

2.6.2 Network services

2.6.2.1 Discovery services


2.6.2.2 Viewing services

The MR 2011 reports 11 viewing services mainly from the Latvian Geographic Information Agency, State Land Survey, and Rural Support Service of which 7 have compliant metadata according to the implementing rules. These web services refer to the following themes: geographical names, administrative units, addresses, cadastral parcels, transport networks, hydrography, elevation, Land cover, orthoimagery, statistical units, buildings, land use, utility and governmental services, population, energy resources, and mineral resources.

Access to spatial data produced by the Latvian Geographic Information Agency is provided at a special public map view service (http://kartes.lgia.gov.lv/) which enables the user to view all data.
sets at various scales, search place names, determine location coordinates and other features. The Latvian Geographic Information Agency also provides access to the geodetic network database (http://geodezija.lgia.gov.lv/) which stores data of all points of the geodetic network, and the place name database (http://vietvardi.lgia.gov.lv/) which stores information on 38,000 geographical objects in Latvia.

2.6.2.3 Download services

The MR 2011 reports existence of only one download services with compliant metadata from the State Land Survey referring to administrative units.

2.6.2.4 Transformation services

Currently, it is likely that no transformation services are implemented. LGIA tests the coordination of geospatial data sets between various coordinate systems, as well as transformation of national data in accordance with the technical specifications of data themes in Annex I to the INSPIRE directive (Transport networks).

LGIA has established a special on-line calculator for recalculation of coordinates (http://map.lgia.gov.lv/index.php?lang=0&cPath=2&txt_id=8). The coordinate calculator features the following operations with a precision of ±0.003 m:

- Estimate of geodetic coordinates B,L from plane coordinates x and y for LKS92 values [x,y LKS92 --> B,L]
- Estimate of plane coordinates x,y LKS92 from values of geodetic coordinates B and L [B,L --> x,y LKS92]
- Estimate of geodetic coordinates B, L and ellipsoid height h from values of geocentric coordinates X,Y,Z [X,Y,Z --> B,L,h]
- Estimate of geocentric coordinates X,Y,Z from values of geodetic coordinates B,L and ellipsoid height h [B,L,h --> X,Y,Z]
- Estimate of normal height from values of geodetic coordinates B,L and ellipsoid height [B,L,h --> H]

2.6.2.5 Invoking services

No information has been found about invoking services

2.6.3 Spatial Data Services and other services

Several spatial data services is developed. In some cases, various browsers and applications for accessing information have been developed.

The Latvian Geographic Information Agency maintains a permanent GPS base stations system LatPos (http://latpos.lgia.gov.lv/). The unified LatPos system comprises 20 base stations operating continuously to gather data from navigation satellites and transmitting those to users.
The location of LatPos base stations enables users’ GPS receivers to determine the coordinates with a precision of two decimetres in real time mode (Real Time Kinematic) and with a precision of five millimetres using a stored date (Post Processing).


The Rural Support Service provides access to geographical information of the Rural Register via a special public maps browser (http://karte.lad.gov.lv/). The Rural Register is a geographic information system which stores information on agricultural land to provide single access to data and control of farmers’ applications and aid payments. The Rural Register contains a database of rural blocks with mutually referenced cartographic data and information on related attributes: geographic reference, identification numbers and area information.

The State Land Survey has established a portal for publishing data www.kadastrs.lv to enable anyone to obtain on-line spatial data from the National real estate cadastral information system (NĪVKIS) and National address register (VAR). The portal comprises public and authorised access sections. The public section contains limited data from the NĪVKIS and VAR information systems.

The Central Bureau of Statistics has established a spatial data service (http://www.csb.gov.lv/csp/content/?cat=355) allowing the user to view statistical information as maps.

The Geoportal HSRS (http://giz.zpr.gov.lv/simplecms/?menuID=4&action=article&presenter=Article) is a package of applications which allows working with maps in web environment based on OGC web services. It allows searching metadata in accessible catalogues by OGC CSW. Furthermore, it allows viewing maps based on OGC web services and other formats (Google maps, KML, MapServer, and GML).

No information has been found regarding other services such as: Web Processing Services, authentication services, payment services, gazetteer services, etc..

### 2.6.4 Use of software

The GIS software predominantly used are from ESRI, Intergraph/Bentley, AutoDesk, Smallworld and MapInfo. Open software are not frequently applied.

### 2.6.5 Conclusions of Component 5

A national geoportal is currently not operational. It will be established (in 2012) in the frame of the project “Establishment of the National Geospatial Information Portal and Linking the Thematic GI systems with the Geoportal”. There is a discovery service reported in the INSPIRE MR 2011 but this is related to EuroGeoNames. The INSPIRE MR 2011 reports the existence of 11 view services mainly from the Latvian Geographic Information Agency, State Land Survey, and Rural Support Service of which 7 have compliant metadata according to the implementing
rules. Although the MR states that 6 download services exist, only one enabled copies of datasets to be downloaded. No information could be found regarding the implementation of transformation and invoking services.

Based on these conclusions we score the indicators as follows:

- There are one or more discovery services making it possible to search for data and services through metadata (Partially)
- There are one or more view services available for to visualise data from the themes of the INSPIRE annexes (Partially)
- There are one or more on-line download services enabling (parts of) copies of datasets (Partially)
- There are one or more transformation services enabling spatial datasets to be transformed to achieve interoperability (No information found)
- There are middleware services allowing data services to be invoked (No information found)
2.7 Component 6: Environmental themes and activities

Most datasets related to the environmental themes are supplied by the Latvian Geographic Information Agency (e.g. Land Use, Utility and governmental services, Environmental monitoring facilities, Production and industrial facilities, Agricultural and aquaculture facilities, Area management/restriction/regulation zones and reporting units, Energy resources, and Mineral resources. Other data suppliers of environmental themes are: Central Bureau of Statistics, State Land Survey, State Forest Service, Rural Support Centre and State Plant Protection Service.

The Latvian agency for Environment, geology and meteorology has developed an environmental, geology and meteorology information system. The main users are the local governments, the state Environment Service, the State Land Service, the State Forest Service, the Central Bureau of Statistics, and the Nature Conservation Agency.

Metadata of several datasets related to environmental themes has been created by Latvian Geographic Information Agency. This metadata of environmental data can be accessed free of charge.

2.7.1 Conclusions of Component 6

The Latvian Geographic Information Agency supplies several datasets (and metadata) related to environmental themes. Other data suppliers of environmental themes are: Central Bureau of Statistics, State Land Survey, State Forest Service, Rural Support Centre and State Plant Protection Service. In addition, the INSPIRE MR 2011 reports a number of environmental themes. The Latvian agency for Environment, geology and meteorology has developed an environmental, geology and meteorology information system. The main users are the local governments, the state Environment Service, the State Land Service, the State Forest Service, the Central Bureau of Statistics, and the Nature Conservation Agency.

Based on the information provided on the previous paragraph we score the indicator as follows:

- Thematic environmental data are covered by the described SDI-initiative or there is an independent thematic environmental SDI
2.8 Component 7: Standards

The developed services make use of OGC CSW, WFS and WMS such as the HSRS-portal. The ISO 19115 metadata standard is occasionally applied.

2.8.1 Conclusions of Component 7

Based on these conclusions we score the indicator as follows:

- The SDI-initiative is devoting significant attention to standardisation issues (Partially)
2.9 Use and efficiency of NSDI

A proper evaluation of the use and efficiency of the available components of the NSDI in Latvia is difficult since most web sites are only written in Latvian. However, it is clear that important effort has been taken to create and upgrade reference and core thematic datasets, and the new legal framework enhance the use of these datasets. However, the lack of metadata and the limited number of spatial data services and applications currently prevent the efficient use and dissemination of the existing data, as well as to create value to the data.

An existing application allows the public to browse address registers and the iKarte service (www.ikarte.lv). Applications for consultation of aerial photographs from State Land Service and of the Real Estate Cadastre is subject to restricted access.

The State Fire and Rescue Service (under Ministry of Interior) has developed and maintains a database of objects of increased danger. This database contains information on location, hazard criteria, and quantities of hazardous chemicals. The database is available for public, state institutions and local governments. Moreover, in cooperation with local governments the State Fire and Rescue Service has developed the Local Government Civil Protection Plan. This plan is accompanied with maps of district or cities at scales 1:10000 or 1:25000, including the following information: Objects of increased danger and areas which may affect the potential consequences of accidents; Areas prone to flooding; Gas and oil pipelines; and Areas with high fire risk (such as forests, swamps).

GRISI project focuses partly on the promotion of local areas to attract them for interested parties. Partners of the GRISI project decided to use the INSPIRE directive as a guideline. As a result of this, each partner established its own GRISI spatial data infrastructure to facilitate the access of new spatial data, to use the GRISI metadata profile based on ISO 19115 and Dublin Core standards, and to ensure compatibility with OGC (Open Geospatial Consortium) services. This all resulted in new spatial databases and new web-based services (www.grisi.lv).

The Daugavpils University established a geographic database about local tourism objects. It also designed a technology which ensures the compatibility of the data with the GRISI spatial data infrastructure as well as the web services of project partners.

On the one hand, the Latvian agency for Environment, geology and meteorology uses orthophotos, topographic maps at scales 1:2000/10,000/1:50 000 of the Latvian Geographic Information Agency, administrative, cadastral and real estate data of the State Land Service, protected sites of the Nature Conservation Agency, and statistical data from the Central Bureau of Statistics. On the other hand, the Latvian agency for Environment, geology and meteorology manages the environmental, geology and meteorology information system including spatial data. The main users of these data are all 118 local governments, the State Environmental Service, the State Land Service, the State Forest Service, the Central Statistical Bureau, and the Nature Conservation Agency.

On the one hand, the Nature Conservation Agency (DAP) uses orthophotos, topographic maps at scale 1:10,000 and satellite images of the Latvian Geographic Information Agency, administrative, cadastral and real estate data of the State Land Service, and state forest registries.
of the State Forest Service. On the other hand, the Nature Conservation Agency prepares and provides geographic data on protected nature areas. The main users of the data are: local governments, planning agencies, private companies, the State Forest Service, the State Land Service, the State Environmental Service, and the State Rural Support Service.

The State Land Survey use orthophotos, topographic maps at scales 1:2000/10,000 and satellite images of the Latvian Geographic Information Agency, and geographic data on protected nature areas of the Nature Conservation Agency. The State Land Survey produces data about administrative units, buildings, land plots and addresses. In addition, the State Land Survey manages the State Address Register and the national real estate cadastral information system including spatial data. The main users of the data are all 118 local governments, the Central Bureau of Statistics, the Nature Conservation Agency, the Latvian Geospatial Information Agency, VAS „Privatizācijas aģentūra” (State-owned company Privatisation agency), the Court Administration (including the Department of Courts and Land Registers), the State Revenue Service, the State Inspectorate for Heritage Protection, the State Forest Service, the State Environmental Service, the Ministry of Agriculture, and the Latvian agency for Environment, geology and meteorology.

One of problems identified that may influence the improvement of shared use of spatial data sets is the inconsistent legislation and pricing policy regarding the access to spatial data sets and use thereof. In order to improve the legislation, the Ministry of Defence is developing regulations setting out the mandatory content of the regulations governing the use of spatial datasets and procedures for obtaining a license.
## 3. Annexes

### 3.1 List of SDI addresses / contacts for Latvia

<table>
<thead>
<tr>
<th>SDI Name</th>
<th>Web address</th>
<th>Organisational mailing address</th>
<th>Over-all contact person: tel./fax/e-mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministry of Defence</td>
<td><a href="http://www.mod.gov.lv">www.mod.gov.lv</a></td>
<td>Kr. Valdemāra 10/12, Riga, LV–1473</td>
<td>phone: +371-67335184 fax: +371-67212307 e-mail: <a href="mailto:kanceleja@mod.gov.lv">kanceleja@mod.gov.lv</a> <a href="mailto:geoinfo@mod.gov.lv">geoinfo@mod.gov.lv</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Contact persons:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Dina Giluce phone: +371 67335184 <a href="mailto:dina.giluce@mod.gov.lv">dina.giluce@mod.gov.lv</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Oskars Kreilis phone: +371 67335095 <a href="mailto:oskars.kreilis@mod.gov.lv">oskars.kreilis@mod.gov.lv</a></td>
</tr>
<tr>
<td>Latvian Geospatial Information Agency</td>
<td><a href="http://www.lgia.gov.lv">www.lgia.gov.lv</a></td>
<td>O.Vācieša iela 43, Riga, LV-1004</td>
<td>phone: +371-67064201 fax: +371-67064209 e-mail: <a href="mailto:info@lgia.gov.lv">info@lgia.gov.lv</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Contact person:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Harijs Baranovs phone: +371-67064202 <a href="mailto:Harijs.baranovs@lgia.gov.lv">Harijs.baranovs@lgia.gov.lv</a></td>
</tr>
<tr>
<td>Ministry of Regional Development and Local Government Affairs</td>
<td><a href="http://www.raplm.gov.lv">www.raplm.gov.lv</a></td>
<td>Lāčplēša iela 27, Riga, LV-1011</td>
<td>phone: +371-67770484 fax: +371-67770479 e-mail: <a href="mailto:pasts@raplm.gov.lv">pasts@raplm.gov.lv</a></td>
</tr>
<tr>
<td>State Regional Development Agency</td>
<td><a href="http://www.vraa.gov.lv">www.vraa.gov.lv</a></td>
<td>Elizabetes iela 19, Riga, LV-1010</td>
<td>phone: +371-67079000 fax: +371-67079001 e-mail: <a href="mailto:pasts@vraa.gov.lv">pasts@vraa.gov.lv</a></td>
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<tr>
<td>State Land Service</td>
<td><a href="http://www.vzd.gov.lv">www.vzd.gov.lv</a></td>
<td>11.novembra krastmala 31, Riga, LV-1050</td>
<td>phone: +371-67038608 fax:+371-67038829 e-mail: <a href="mailto:vzd@vzd.gov.lv">vzd@vzd.gov.lv</a></td>
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<tr>
<td>Latvian Environment, Geology and Meteorology Centre</td>
<td><a href="http://www.lvgmc.lv">www.lvgmc.lv</a></td>
<td>Maskavas ielā 165, Riga, LV-1019</td>
<td>phone: +371 67 032 600 fax: +371 67 145 154 e-mail: <a href="mailto:lvgmc@lvgmc.lv">lvgmc@lvgmc.lv</a></td>
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### 3.2 List of references for Latvia

**Table: list of references used to compile the Country Report**

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