

Table of Contents

- Introduction
- State of Play
 - Coordination
 - Functioning and coordination of the infrastructure
 - Usage of the infrastructure for spatial information
 - Data Sharing Arrangements
 - Costs and Benefits
- Key Facts and Figures.
 - Identification of spatial data with relevance to the environment (step 1)
 - Documentation of the data (metadata) (step 2)
 - Accessibility of the data through digital services (step 3)
 - Interoperability of spatial data sets (step 4)

Introduction

The INSPIRE Directive sets the minimum conditions for interoperable sharing and exchange of spatial data across Europe as part of a larger European Interoperability Framework and the e-Government Action Plan that contributes to the Digital Single Market Agenda. Article 21 of [INSPIRE Directive](#) defines the basic principles for monitoring and reporting. More detailed implementing rules regarding INSPIRE monitoring and reporting have been adopted as [COMMISSION DECISION regarding INSPIRE monitoring and reporting](#) on the 5th of June 2009.

This country fiche highlights the progress in the various areas of INSPIRE implementation and presents an outlook of planned actions for further improvement of the INSPIRE implementation. The country fiche includes information **until May 2019** as an update of the information acquired through:

- member states update,
- [monitoring report](#) in May 2019.

State Of Play

A high-level view on the governance, use and impact of the INSPIRE Directive in Lithuania. More detailed information is available on the [INSPIRE knowledge base](#).

Coordination

National Contact Point

Name of Public Authority: Ministry of Agriculture

Contact Email: [Click to email](#)

National INSPIRE Website: <http://www.geoportal.lt/geoportal/>

MIG Contacts: Contact Person: Mindaugas Pažemys

Email: M.Pazemys@gis-centras.lt

Contact Person: Aušra Kalantaitė

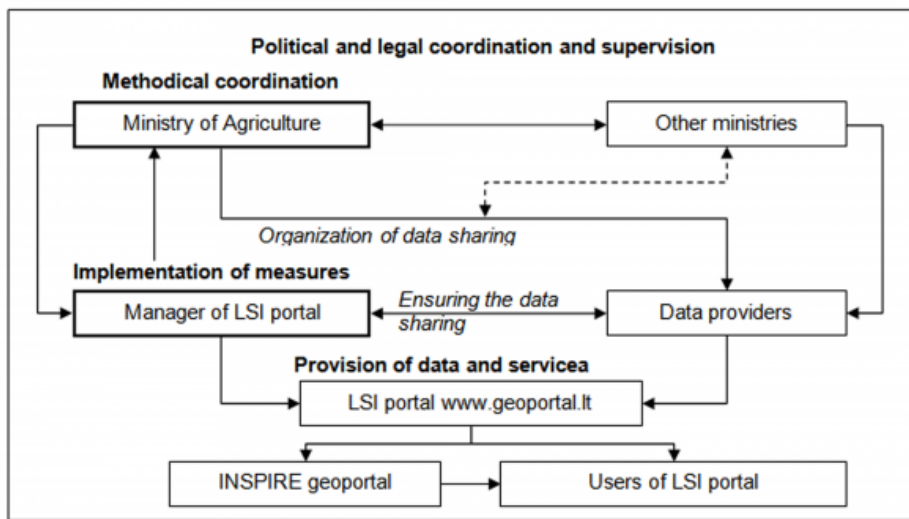
Email: ausra.kalantaite@zum.lt

MIG T Contacts: Contact Person: Mindaugas Pažemys

Email: M.Pazemys@gis-centras.lt

Contact Person: Jurgita Špūraitė

Email: jurgita.spuraite@nzt.lt



Coordination Structure & Progress:

- National Contact point

Name of public authority	The Ministry of Agriculture of the Republic of Lithuania
Mailing address	Gedimino Av. 19, Lt-01103 Vilnius
Telephone number	+ 370 (5) 239 1111
Fax number	+ 370 (5) 239 1212
E-mail	zum@zum.lt
Website address	http://www.zum.lt
Contact person	Vytautas Paršeliūnas
Telephone number	+ 370 (5) 210 0522
E-mail	vytautas.parseliunas@zum.lt
Contact person substitute	Palmira Petniūnienė
Telephone number	+ 370 (5) 210 0525
E-mail	Palmira.Petniuniene@zum.lt

- Coordination Structure

To ensure implementation of the provisions of the Directive, the Government of the Republic of Lithuania appointed the Ministry of Agriculture (MoA) as responsible for the development of infrastructure measures to ensure the functioning of the metadata, data sets, network services, sharing services for the themes referred to in the Directive and the access to the INSPIRE portal.

MoA is responsible for:

- acting as a representative in the INSPIRE Committee;
- monitoring the establishment and use of the spatial data infrastructure;
- submitting reports on the implementation of the Directive in Lithuania to the Commission.

The Law of the Republic of Lithuania on Geodesy and Cartography and its implementing legislation transpose the provisions of the Directive into the legal system of the Republic of Lithuania.

The Resolution of Lithuanian Government of 13 October, 2010, No. 1460 and its amendments set the list of datasets that must be provided for sharing in the Lithuanian spatial information infrastructure; among them the data corresponding to the themes of the Annexes I–III of the Directive and the priority datasets.

Lithuanian Spatial Information portal (LSI portal, www.geoportal.lt) is the main technological platform that is used for the implementation of the provisions of the Directive. It provides the single point national access to spatial data and services. It serves as a free of charge platform for the provision of spatial data and services to the INSPIRE geoportal.

The manager of the LSI portal is State Enterprise GIS-Centras (hereinafter GIS-Centras). GIS-Centras is responsible for administration and maintenance of the LSI portal and participates in organization of data sharing:

- management of the systems of the LSI portal and ensuring uninterrupted service provision;
- administration of the www.geoportal.lt;
- collection, processing and management of metadata;

- development and maintenance of the LSI portal web services;
- management of data provision agreements;
- monitoring the provision of spatial data and services;
- providing support for the LSI portal users and data providers;
- ensuring safety of LSI portal information;
- provision of spatial data and services to the INSPIRE geoportal.

The data providers are the state and municipal authorities and other persons responsible for creating and/or managing spatial data sets. Business, NGOs and physical persons can share their spatial data in the LSI portal free of charge as long as the datasets are considered valuable for the society.

In accordance with the procedure and under the conditions laid down by the Law of the Republic of Lithuania on Geodesy and Cartography and the LSI Portal Regulations, the administrator of the LSI portal concludes agreements with the providers of spatial data sets to ensure that spatial data sets are accessible to users via the LSI portal.

Provision of spatial data and services to the INSPIRE geoportal is also regulated by data provision agreements. Data providers are responsible for transformation of spatial data according to the INSPIRE data specifications. GIS-Centras is responsible for creating INSPIRE compliant metadata and network services for the provided datasets. GIS-Centras organizes information and training events where the services of the LSI portal and benefits of data sharing are explained.

Users of the services of the LSI portal are physical and legal persons who use the data of the LSI portal, spatial data sets and their metadata through the electronic services of the LSI portal.

• Progress

- The coordinating structure has changed since 01.01.2018 when MoA has undertaken full management of the LSI portal. National land service under the Ministry of agriculture remains an important data provider but does not anymore play a role in coordination.
- National data sharing has been significantly improved in 2016-2018 (159 new datasets added to sharing at the LSI portal). However the pace of INSPIRE data sharing slowed down because of the new governmental policy that foresees massive reorganization of both Ministry of Agriculture (moving to another location in Lithuania) and state enterprises (joining GIS-Centras with other two state enterprises that are fully agriculture- oriented). The changes resulted in losing competent experts and in overall uncertainty that has bad impact on public image and role of the responsible institutions.
- Due to similar reorganizations in many data provider organizations some data providers changed their data sharing policies that resulted in stopping some services. Correspondingly, the procedures of amendments to legal acts regulating spatial data sharing became slower and communication with the data providers less efficient. On the other hand, overall number of data providers increased from 43 in 2016 to 51 in the end of 2018.
- New surveying and engineering infrastructure information system is in process of implementation for local authorities' large scale information exchange. In 2021, full access to the large scale data of topographic and engineering information for entire Lithuania is anticipated. The data will be consistent and conformant to a single scheme that will allow for launching INSPIRE services in the future.
- Some separate datasets within one INSPIRE theme have been combined into one dataset. We believe that this approach is more efficient and more convenient for the users.
- New projects of extension of the LSI portal using EU structural funds was started by GIS-Centras and is in its second year of implementation (2018–2021). Upon termination in March 2021 all data themes of the Annexes II and III will be covered with fully compliant INSPIRE data sets and services.
- The principal technological change realised during this reference period is switching from commercial to open source technology for INSPIRE data transformations and sharing. New technological scheme makes the INSPIRE data publishing clearer and smoother. It will also allow for more flexibility and financial savings in the future.
- More of existing datasets, among them priority datasets, have been identified and included in the amendment to the Resolution of Lithuanian Government of 13 October, 2010, No. 1460 that is currently in the process of adoption. When it comes into force, all organizations will be legally obliged to provide the newly listed datasets for sharing. It will significantly improve the coverage of the INSPIRE themes and priority datasets.
- During the reporting period, targeted communication and events were organized to focus on INSPIRE implementation: an information brochure on the LSI portal in the Lithuanian and English was distributed, specialised press events organized and numerous meetings took place with concerned organisations.
- During 2016-2018 the interactive electronic services of the LSI portal have been improved and extended, the functionality, including mobile access, was improved and further developed, and links with other 25 state and business information systems have been created.

Functioning and coordination of the infrastructure

- The objective of the LSI portal is to facilitate centralised provisioning of spatial data sets and their metadata. The LSI portal allows the integration of public sector spatial information, information from the main state registers, statistical information and other geographically related information with a national scope in such a way that the various spatial data sets managed by different authorities can be accessed via the single common infrastructure and used and analysed in their entirety.
- The LSI portal website can be accessed at the address <http://www.geoportal.lt>.
- The administrator of the LSI portal has signed agreements on the provision of data with the third parties (providers of spatial data sets) who are responsible for spatial data sets corresponding to INSPIRE themes and provide spatial data via the LSI portal.
- Active cooperation is ongoing with the organisations that use the electronic services of the LSI portal. The providers of spatial data sets use reference base data and other electronic viewing services in their information systems.
- The coordinating body of the LSI portal liaises and exchanges information with the organisations responsible for environmental impact

assessment and the drawing up of reports for the Ministry of the Environment of the Republic of Lithuania and its subordinate bodies. The coordinating body of the LSI portal shall also liaise and exchange information with international organisations (EuroGeographics, EUREF Geodesy, European Location Framework Project, OpenStreetMap osmfoundation.org , ...)

- The network services of the LSI portal are publicly accessible at www.geoportal.lt. A link is created in two languages: in Lithuanian and English. General conditions for the use of network services by the public administration organisations and third parties are the same.
- During the reporting period the competence of spatial data users has significantly increased, and more and more spatial information is being used to justify decisions. This is demonstrated by the growing use of the LSI portal services and the changing nature of the queries and requests made by the users.

Usage of the infrastructure for spatial information

- The usage of the Lithuanian Spatial Infrastructure significantly increased during the period 2016–2018.
- Businesses have a stable interest in the public services of the LSI portal. About 40 % of users are from the business sector. Business organizations are using 110 spatial data services integrated in their information systems. There has also been a significant increase in the use of the spatial data services of the LSI portal by research and academic organisations (from 13 % at the end of 2015 to 17 % at the end of 2018).
- The LSI platform allows the most important Lithuanian public administration bodies to work more efficiently. Legislation obligates the authorities to provide data, reports, other information and different services to other authorities, residents and businesses. Therefore, it may be said that the needs of public administration bodies are based essentially on statutory obligations. They use the LSI portal to download data for the authority's purposes and to provide data to others. In the period of 2016–2018 the use increased due to developed integral electronic services that use spatial data services.
- Lithuanian public administration bodies still lack competence to make best use of the infrastructure. Therefore additional systematic education and support is needed, covering both the understanding of the LSI and training in the use of specific existing or future spatial data management tools.
- The LSI data services are particularly important for municipal and state authorities that have limited resources for the work with spatial data and only tackle specific public administration tasks (e.g., check out the specific location and see to the granting of an authorisation to cut down a tree or measure the distance to a body of water). Spatial data provided via the LSI portal can be used for solving various analytical problems, automation of management processes and development of solution support systems in the public and business sectors.
- Providers of spatial information services are most interested in using the already created LSI solutions to create other solutions or develop systems. Furthermore, business interests often cross the borders of a single state, therefore services provided by the INSPIRE portal are very relevant.
- The growth in the service offering and the use of the LSI in 2016-2018 was much higher than expected.
- In the reference period, the highly demanded data on address points and cadastral parcels became open for unlimited viewing, but their use is limited by a high price set for the download service by the data provider.
- Environmental monitoring and impact assessment data provided via the LSI portal was still low, mainly due to the inertia of the responsible organisations. In 2019, actions have urgently been taken in response to the letter from the Commission regarding the problems of identification and provision of priority datasets in Lithuania. 65 additional datasets have been identified, that will be provided by 2021.

Indicator	End of 2015	End of 2018	Change, %
Registered users	9116	17976	197
Total No. of services provided	1,312 Mio	3,208 Mio	245

Data sharing arrangements

- Compared with the previous period, open data has been introduced and procedures to access spatial data have been simplified. A wider use of open data licences is considered.
- Data sharing between state and municipal authorities is governed by regulations on relevant information systems where external spatial data flows and their sources are specified. Agreements on the provision of data are reached by harmonising the regulations on information systems among all managers of information sources referred to in the regulations. Specific agreements between authorities are signed after the details of data provision have been harmonised. Every agreement is specific and depends on the nature of data services required. Agreements typically specify the subject matter of the agreement, legal basis for the provision of data, obligations of the parties, as well as data protection rules, etc.
- State and municipal authorities publish information on what information is under their control and what the conditions for the use of this information is on their websites.
- Information processed by state information systems is provided to the requesting authorities, other legal and natural persons free of charge in accordance with the laws of the Republic of Lithuania or by legal acts of the European Union provides otherwise. With the help of the systems of the LSI portal, more spatial data sets are provided without any administration fee.
- Insofar there are no data sharing agreements between Community institutions and the administrator of the LSI portal. In accordance with the Law of the Republic of Lithuania on Geodesy and Cartography, spatial data sets and services required for the institutions of the European Union, state authorities and municipalities to carry out public tasks or to submit reports in accordance with European Union legislation relating to the environment, shall be provided free of charge. Providers of spatial data sets have the right to restrict access to spatial data sets via the LSI portal where this is stipulated by other laws. Community institutions and bodies may use electronic services of the LSI portal under the same procedure as they are used by legal and natural persons in Lithuania, by signing such agreements on the use of data as provided for a specific spatial data set provided through the electronic service of the LSI portal. Conditions of the agreements on the use of data are presented in English.

The main issue with the provision of data is that no funds have been earmarked for ensuring the compatibility of the spatial data with INSPIRE data specifications. Internal resources of the state are not sufficient to ensure both internal exchange of spatial data for national needs and a good level of provision of such data to Community institutions and bodies. As far as possible, the issue is addressed by trying to harmonise national needs with INSPIRE requirements.

Costs and benefits

It is hard to separate costs for general LSI development, LSI portal maintenance and development and specific INSPIRE Directive implementation costs. The costs incurred during the reference period are divided into two parts:

- Ad hoc Project costs for the implementation of INSPIRE network services, metadata and spatial data sets in the LSI.
- Annual maintenance costs for the LSI portal covering the following categories:
 - Hardware maintenance costs (around 30 % related to INSPIRE),
 - Software maintenance costs (around 50 % related to INSPIRE),
 - Maintenance work costs (around 30 % related to INSPIRE),
 - Monitoring and reporting costs (around 70 % related to INSPIRE).

Year	LSI Ad hoc projects (EU structural funds and State budget co-financing)	LSI hardware and software maintenance, labour costs, publicity; (State budget)
2009	17.539,25 ltl LT (EUR 5079718)	
2010		
2011	1290 ltl LT (EUR 373610)	900 ltl LT (EUR 260658)
2012	1.232,50 ltl LT (EUR 356957)	900 ltl LT (EUR 260658)
2013	4.593,06 ltl LT (EUR 1330242)	900 ltl LT (EUR 260658)
2014	2.730,20 ltl LT (EUR 790720)	900 ltl LT (EUR 260658)
2015		252000 EUR
2016		278.000 EUR
2017		276.000 EUR
2018	228.813 EUR	391.000 EUR

LSI data providers (but not all) indicate low annual costs additionally incurred as a result of the implementation of the Directive, mostly in three categories:

- preparation and provision of metadata and network services (between 0 and EUR 2500 on an annual basis);
- management of data sets (of the conformity of spatial data sets with the INSPIRE requirements was achieved as part of the project “development of the services of the Lithuanian infrastructure for spatial information by implementing priority measures of the INSPIRE Directive”) — depending on the volume of the data provided from 0 to EUR 3000 per year.
- monitoring and reporting (from 0 to EUR 700 per year).

As the costs of the implementation of the Directive, are inseparable from the benefits provided by the LSI and the LSI portal, any claims regarding the possible development of the national spatial data infrastructure without the Directive would be speculative. The Directive had an undoubted influence on the spatial data strategy in Lithuania.

Benefits directly related to the INSPIRE Directive (i.e. it is likely that they would not have been achieved without the Directive). These are, of course, only indirect and non-quantifiable benefits characterised by the following aspects:

- The directive created a legal framework for pursuing interoperability and common use of spatial data. This made it easier to conclude relevant agreements with spatial data providers, define data sharing practices and procedures and move more information and services online.
- The Directive creates an obligation to provide metadata, i.e. inform users about the existing spatial data sets. As a result of implementation of this requirement, the awareness of the authorities and the public to the existence of information resources collected by the state has increased manifold.
- INSPIRE promotes public provision and monitoring of data. Since public provision of data sets and easy access enables users to notice their weaknesses, this suggests that, in the absence of legal obligations, some data providers would not be interested in disclosing their data sets.

Evidence of direct benefits observed in Lithuania:

- Adoption of the Directive led to focused policy-making in the field of spatial information;
- Benefits observed in the field of environmental policy: obligation to improve the quality of existing data and provide modern spatial data services;
- The understanding among the authorities of the benefits of spatial information, integration of data on the basis of spatial data and the possibilities of using them in decision-making has improved. Thus the groundwork is laid for closer cooperation among organisations;
- The public is better informed and the demand for spatial data services is increasing;
- More projects are prepared, there is a growing amount of initiatives related to broader use of spatial data and innovative electronic services. The legal basis created by the directive allows better justification of the demand for such projects and ensures their funding.

Much greater economic and social benefits generated at the national level as a result of the functioning of the infrastructure for spatial information. Since implementation of the Directive speeds up the development of the infrastructure for spatial information and necessitates an increase in its efficiency, there is no doubt that a certain part of these benefits is linked to the Directive but it is impossible to provide quantifiable evidence of this link. Aspects of the common benefits generated by the LSI are presented below:

1. Economic benefits achieved as a result of increased efficiency. These benefits are primarily quantified in work time costs; by multiplying these costs by an average salary of an employee from a relevant field, an expression of these benefits in financial terms may be obtained; however, it must be noted that work time saving does not in itself guarantee financial benefits, thus it cannot be classified as direct benefits.
 - The assessment of the cost-benefit analysis of the implementation of the Directive during the reference period in each year of functioning of the Lithuanian Spatial Infrastructure identified **savings** of around 20.000 working days. In terms of average wages in the sector in Lithuania, this amounts to **EUR 1,2 million**.
 - During the reporting period following the implementation of the further development of the LSI development project, **the socio-economic benefits have been assessed** from LTL 3,1 million (EUR 0,9 million) in the year 2014 to an average of **1,8 million euros annually**.
2. Indirect benefits achieved as a result of greater spatial data and existing LSI tools for decision-making. Where decision-makers are better informed, this leads to less problems and arguments, and the resulting financial and time costs are reduced. Examples of such benefits are as follows:
 - Improved availability and transparency of spatial data sets resulted in a smaller number of territorial pre-litigation disputes and legal proceedings arising out of the incompatibility of spatial data sets;
 - The land owners being able to view parcel data online, they are better informed, resulting in lower fines for abandoned land administration; the use (restitution) of land more effective resolution of issues;
 - More effective registration of errors and a smaller number of related errors in spatial data sets;
 - A number of reduced duplication of spatial data sets (it is unnecessary to keep copies available online) and no need for repeated efforts to collect similar data sets.
3. Indirect benefits achieved as a result of increased use of spatial information to create various services and new spatial data sets. Examples of such benefits are as follows:
 - Higher number of ongoing projects for the development of spatial information systems, greater demand for professionals, new jobs;
 - New spatial data sets are created by using the main national spatial data sets, thereby conferring added value to the collected information, for example, maps displaying the distribution of criminal offences, tourist routes, objects of folklore and literature;
 - Charter distributed data collection (crowdsourcing) by users create spatial data sets, for example, error or issue notifications, tourist information, etc.
4. Indirect social benefits primarily linked to improved awareness and motivation at all levels:
 - strengthened cooperation between different organisations by using the same spatial data as an instrument for interconnection;
 - qualitatively new possibilities for using spatial information, increasing number of creators of spatial data and added-value services, especially among educational institutions; less investments in hardware and software and more investments in innovative products;
 - better citizens' awareness of the living and business environment, ability to use spatial analysis tools and more active participation in decision-making; better awareness of officials is linked to expected higher rates of "good" decisions (i.e. fully justified taking account of the more influential environmental factors) decisions.

Key facts and figures

In addition to the above mentioned issues, the implementation of INSPIRE Directive requires Member States to take four main steps in relation to management of spatial datasets which fall under the Directive:

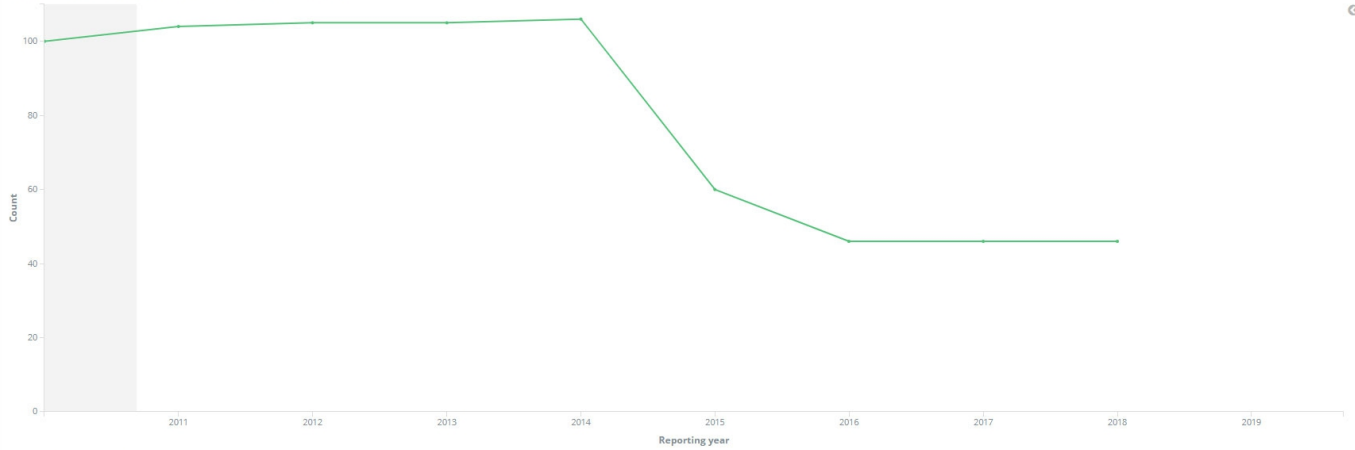
- Step 1: Identify spatial datasets
- Step 2: Document these datasets (metadata)
- Step 3: Provide services for identified spatial datasets (discovery, view, download)
- Step 4: Make spatial datasets interoperable by aligning them with the common data models.

The key facts and figures presented in this country fiche are based on the information provided by Lithuania on the [INSPIRE dashboard](#). **The provided statistics is not reflecting the data available on INSPIRE geportal**. The INSPIRE geportal is updated on a regular and ongoing basis, whilst the INSPIRE dashboard is typically updated after every reporting round, on a yearly basis.

The conformity of the implementation is assessed against the full set of legal specifications set out by the Directive and the Implementing Rules and the commonly agreed good practices set out by the technical guidelines.

Identification of spatial data with relevance to the environment (step 1)

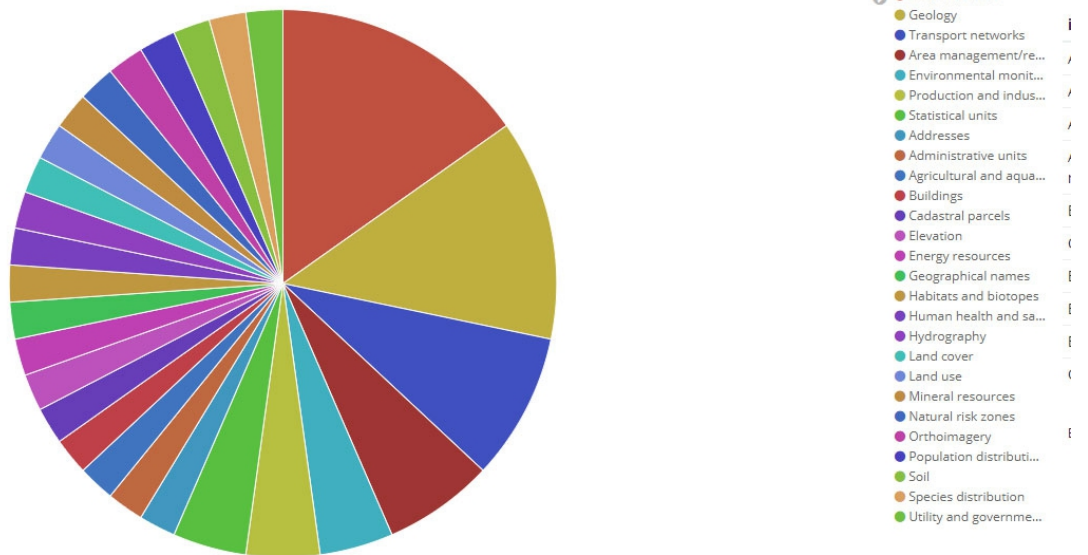
Indicator / Number of spatial data sets for all annexes (DSv_Num)



Country fiche / datasets by annex

Data sets made available per INSPIRE theme (reference year 2018)

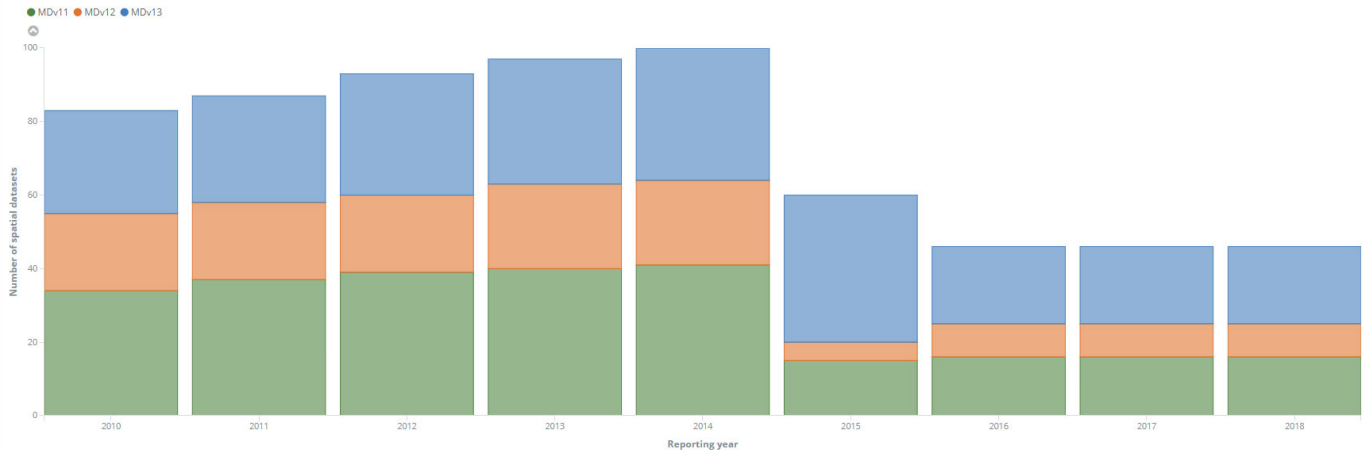
INSPIRE Raw data (datasets) by themes



Country fiche / datasets by themes

Data sets made available per INSPIRE theme

Indicator / Number of spatial data sets per annexes



Country fiche / Documentation of the data

MDv1.1: number of spatial data sets for Annex I that have metadata

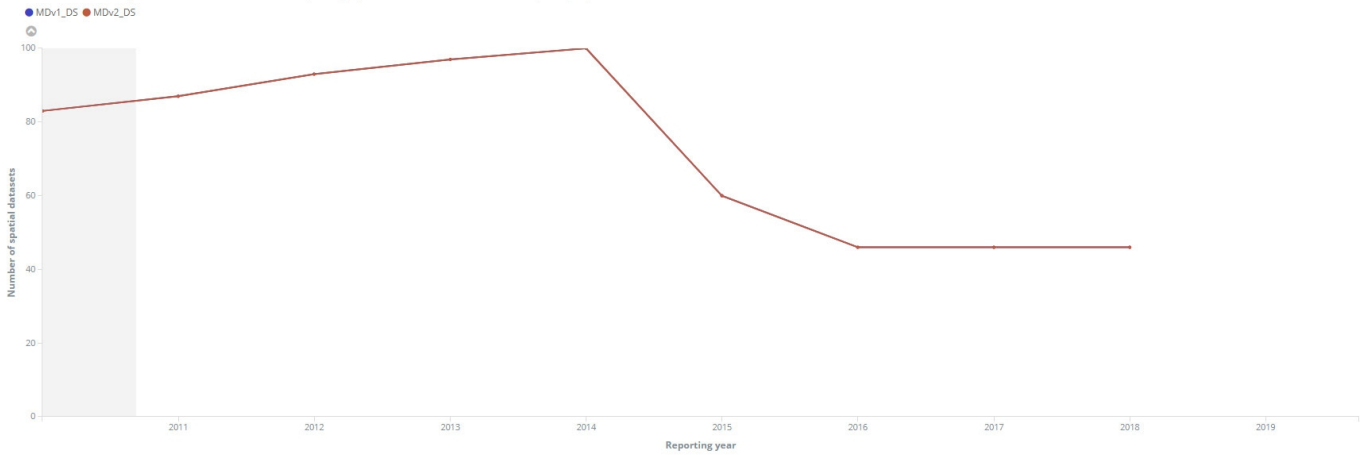
MDv1.2: number of spatial data sets for Annex II that have metadata

MDv1.3: number of spatial data sets for Annex III that have metadata

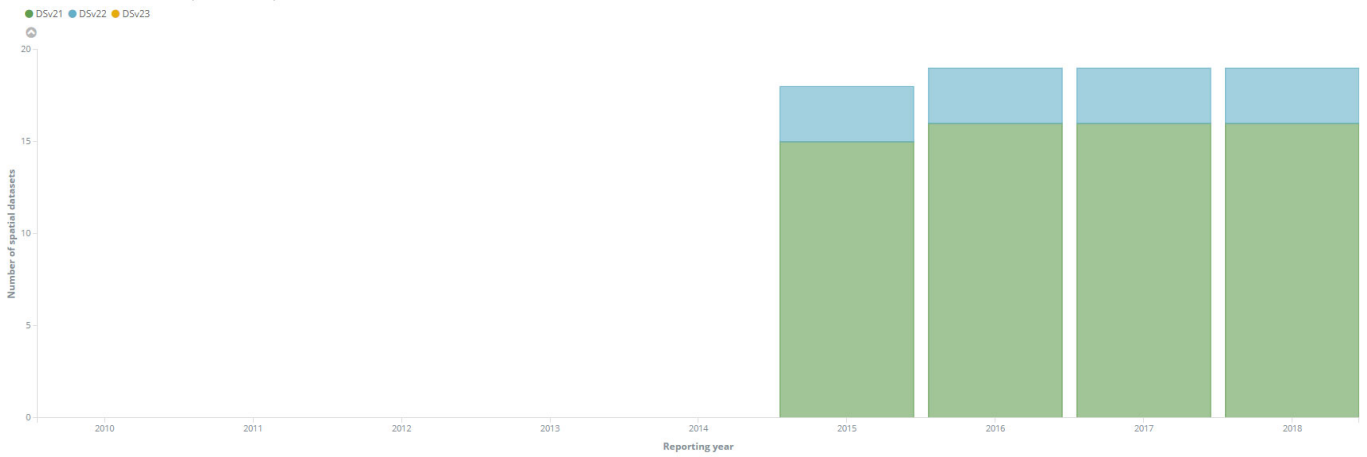
Documentation of the data (metadata) (step 2)

Evolution of documented data and conformity of the documentation

Indicator / Number of spatial data set that have metadata (MDv1_DS) and have conformant metadata (MDv2_DS)



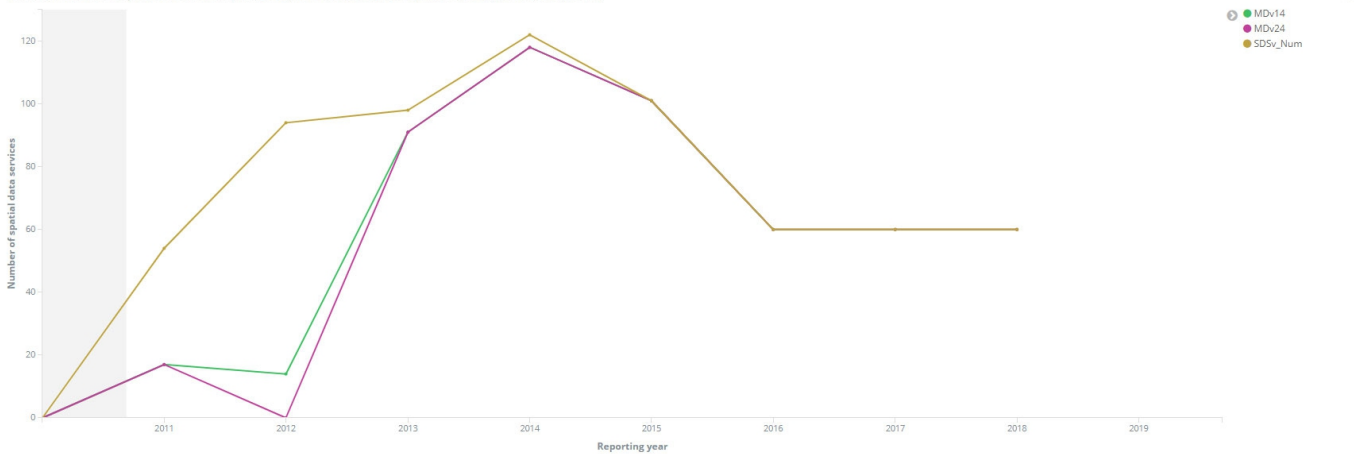
Indicator / Number of conformant spatial data sets per Annexes



Country fiche / Evolution of documented services and conformity of the documentation

Evolution of documented services and conformity of the documentation

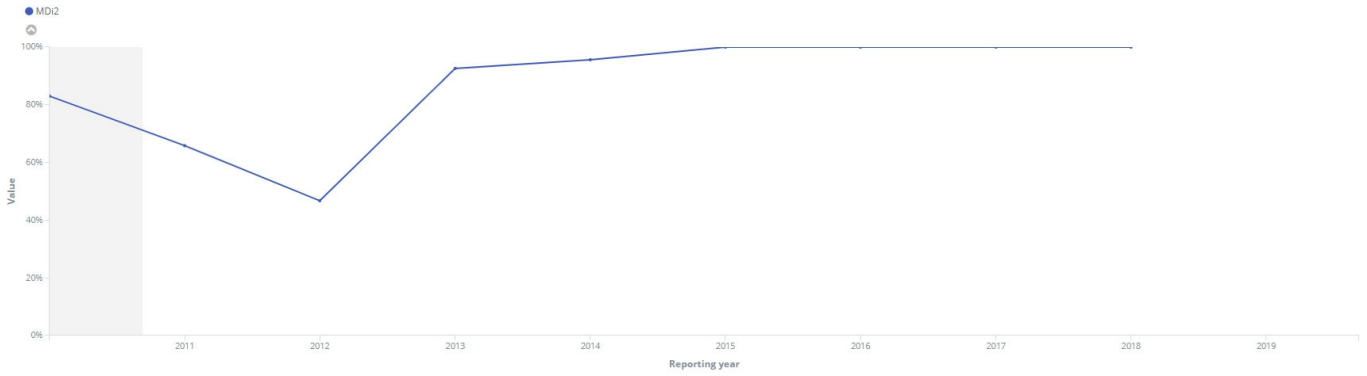
Indicator / Number of spatial data services (SDSv_Num) with metadata (MDv14) and conformant metadata (MDv24)



Country fiche / Evolution of the overall conformity of the documented metadata

Evolution of the overall conformity of the documented metadata

Indicator / Percentage of spatial data sets and services with conformant metadata (MDI2)

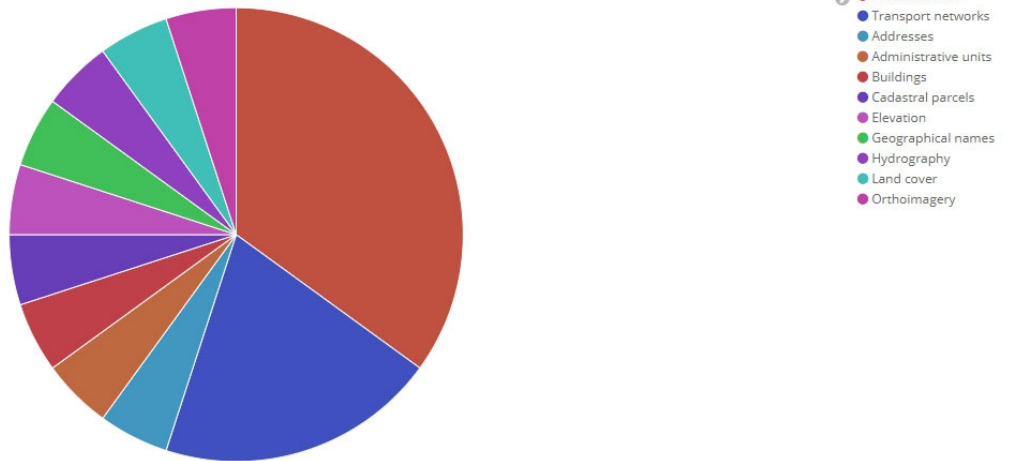


Country fiche / accessibility

Accessibility of the data through digital services (step 3)

Digitally accessible spatial data per INSPIRE theme (reference year 2018)

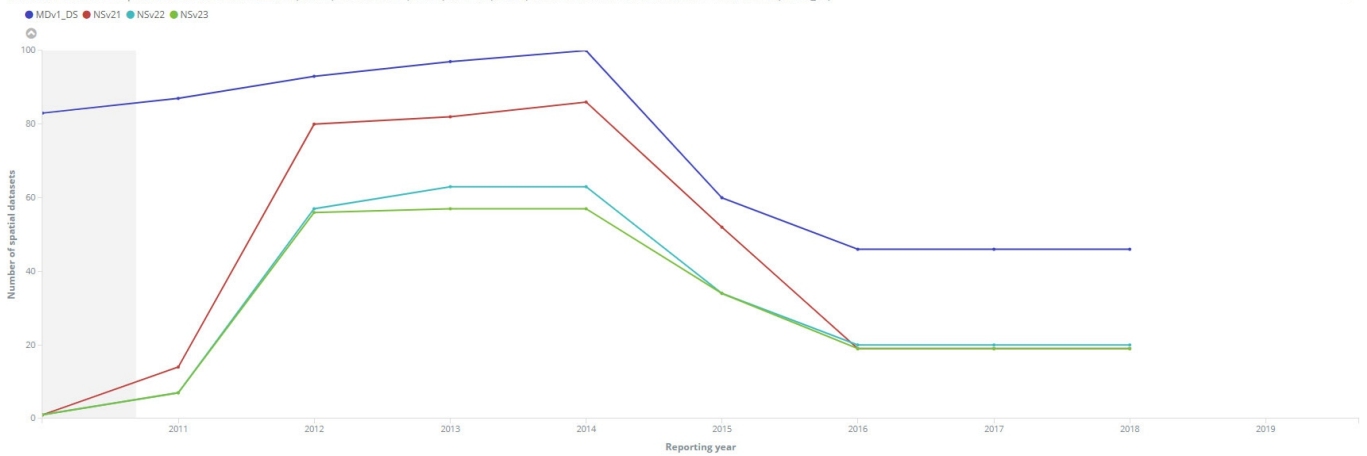
INSPIRE Raw data (datasets available through services) by themes

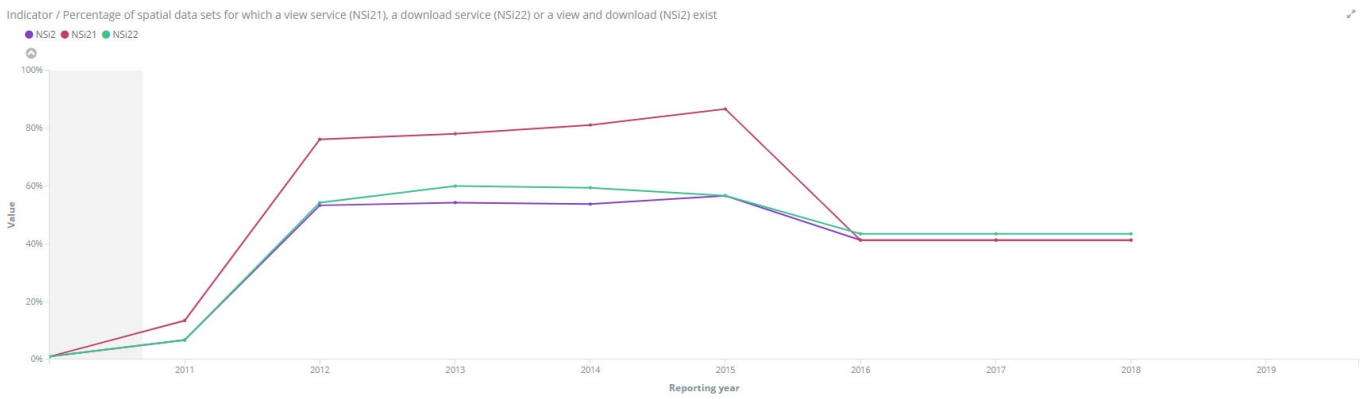


Country fiche / Evolution of spatial data accessible through services

Evolution of spatial data made accessible through digital services

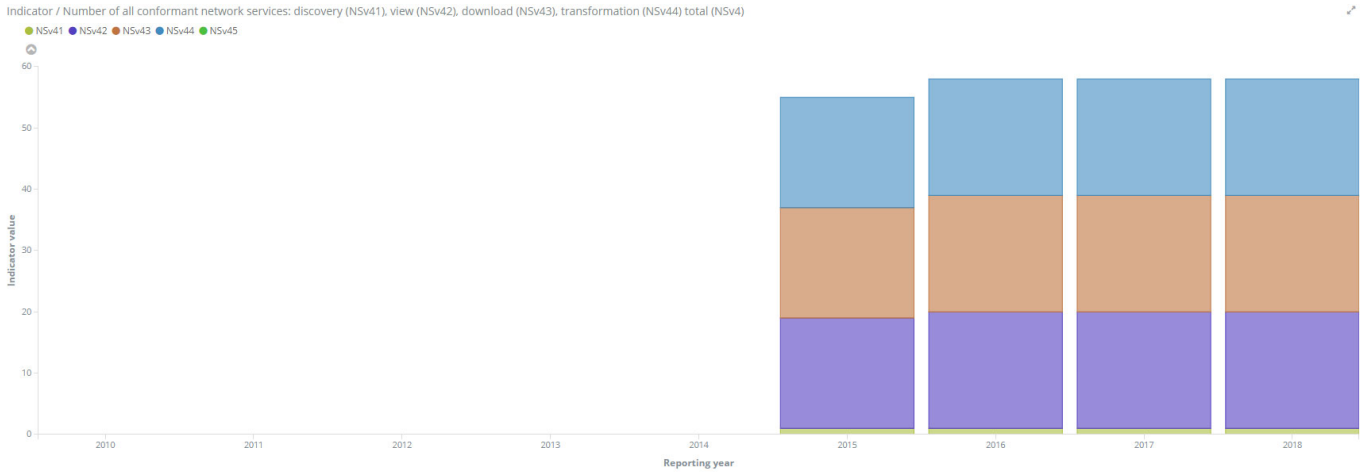
Indicator / Number of spatial data sets for which a view (NSv21) or download (NSv22) or both (NSv23) service exist and the total number of metadata (MDv1_ds)





Country fiche / Evolution of the conformity of the digital services

Evolution of the conformity of the digital services

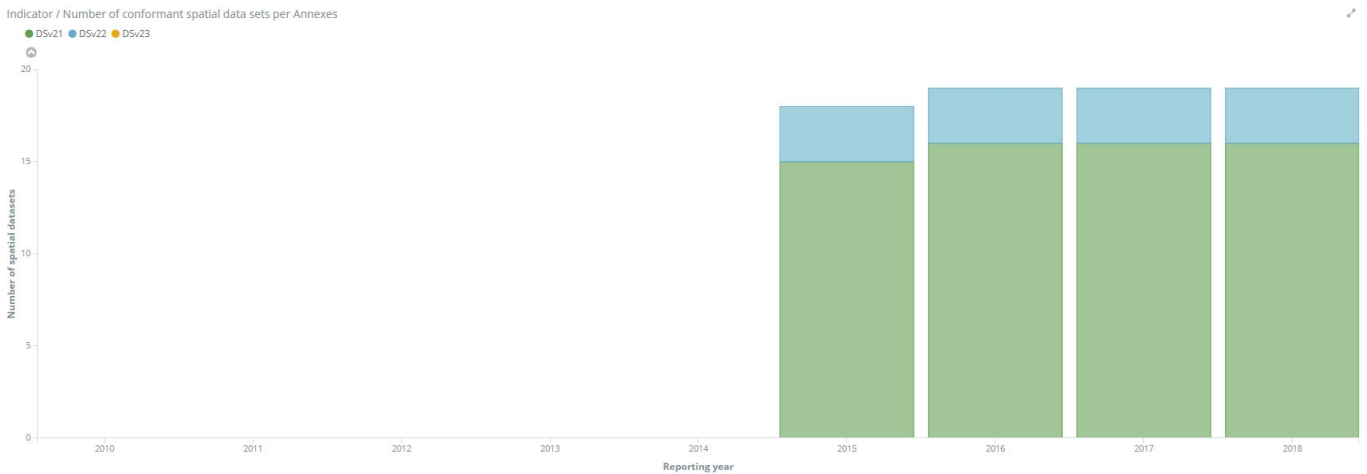


Country fiche / Interoperability

Interoperability of spatial data sets (step 4)

The interoperability of spatial data sets is an outlook on the readiness of Member States to make their spatial data interoperable according to the interoperability specifications laid down in the INSPIRE interoperability implementing regulation (Commission Regulation (EU) No 1089/2010 <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02010R1089-20131230&qid=1400675738563>). The deadlines for implementation of the spatial data interoperability are 23/11/2017 for Annex I data and 21/10/2020 for Annex II and III data.

Evolution of the conformity with INSPIRE interoperability specifications for spatial data



- DSv2.1: number of conformant spatial data sets with conformant metadata for Annex I
- DSv2.2: number of conformant spatial data sets with conformant metadata for Annex II
- DSv2.3: number of conformant spatial data sets with conformant metadata for Annex III