



Status of implementation of the INSPIRE Directive – 2016 Country Fiches

COUNTRY FICHE Finland

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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 of Finland 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 2016** as a summary of the information acquired through:

- the 2016 [tri-annual INSPIRE implementation report](#),
- [monitoring report](#) in May 2016,

- (a [bilateral meeting](#) on the implementation of the INSPIRE Directive between the Commission and Finland.

1. State of Play

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

The content of the chapter is tagged according to 5 criteria of better regulation:

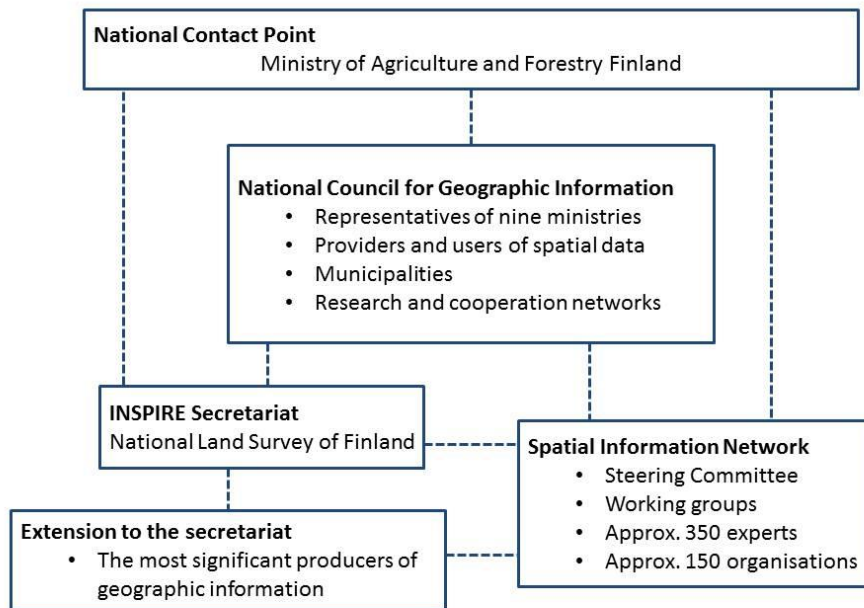
- **[Effectiveness]** How successful has the INSPIRE implementation been in achieving, progressing towards its objectives; progress made, gaps, what factors have influenced or why it has not yet been achieved regarding availability of services, data interoperability, sharing, data policy obstacles
- **[Efficiency]** Costs (numbers or difficulties to evaluate them); benefits (qualitative or quantitative) already visible.
- **[Relevance]** Is it still relevant to make data interoperable, remove obstacles of data sharing, drive collaboration between public services, necessary for National SDI, use cross-sector, requested by eGovernment, modernisation of public admin, etc.; support given by National Institutions for implementation
- **[Coherence]** Internal coherence of INSPIRE provisions proved by implementation; cross-border applications; coherence with other National and EU policies
- **[EU-added value]** Improvement of EU cross-border data management and use; use for environmental monitoring and reporting, use for and with Copernicus data; use cross-sector.

1.1 Coordination

- National Contact point

Name of public authority	Ministry of agriculture and forestry
Mailing address	PL 30, 00023 Valtioneuvosto
Telephone number	+ 35829516001
Fax number	
E-mail	kirjaamo@mmm.fi
Website address	www.mmm.fi
Contact person	Mr Antti Vertanen
Telephone number	+ 358407204001
E-mail	antti.vertanen@mmm.fi
Contact person substitute	Raimo Vajavaara
Telephone number	
E-mail	raimo.vajavaara@mmm.fi

- Coordination Structure



- The following ministries are represented in the National Council for Geographic Information: Ministry of the Interior, Ministry of Defence, Ministry of Finance, Ministry of Social Affairs and Health, Ministry of Agriculture and Forestry, Ministry of Transport and Communications, Ministry of Environment and Ministry of Employment and Economy.
- The following organisations are represented in the extended part of the secretariat and as such provide policy and implementation support: National Land Survey, Finnish Environmental Institute, Meteorological Institute, Geological Research Centre, Finnish Transport Agency, Natural Resources Institute Finland, City of Helsinki as the representative of the municipalities.
- Progress
 - The spatial information network is open to all parties and free of charge. Co-operation is voluntary, and the network includes more than 350 experts from about 150 organizations. The network consists of public administrations, private companies, municipalities and academic institutions. **[Effectiveness]**
 - INSPIRE implementation is also discussed with neighboring countries in the Nordic INSPIRE Network.
 - The province of Åland has started the update process of the legislation on spatial data infrastructure to remedy the shortcomings identified by the Commission. Goal is to get the changes into force by 2017.
 - The National Geographic Information Strategy was updated in 2013 and revised in 2016 to promote the availability of information and services, the opportunities for participation and the use of geographic information in support of decision-making. **[Effectiveness]**

1.2 Functioning and coordination of the infrastructure

- The INSPIRE Directive (2007/2/EC) was transposed in Finland in 2009 by the Spatial Information Infrastructure Decree (725/2009) and the Act on the Infrastructure for Spatial Information (421/2009). The Province of Åland has, on the basis of its autonomy, adopted its own Act (85/2010) and Decree (86/2010) on the implementation of the Directive.
- Finland connected their national discovery service to the EU geoportal, allowing for the publication of metadata for the available spatial data sets and services on the EU geoportal.
- More information is available through the Finnish geoportal at <http://www.paikkatietoikkuna.fi>.
- In the renewed National Geographic Information Strategy, the Ministry of Finance (as part of their responsibility on realizing interoperable public administration information systems under the IT Management Act (634/2011)) takes the lead on further aligning the infrastructure for spatial information with the public administration ICT Strategy to speed up the open data program, create new business opportunities and stimulate the further digitization of public

services. The revised spatial data reference architecture should be completed in June 2016.
[Coherence] [Relevance]

- Finland identified the following issues that hinder the implementation :
 - Lack of out-of-the-box software support for INSPIRE metadata and services. Customization is needed.
 - Need for better validation tools to test compliance.
 - Complexity of data harmonization.
 - Lack of budget.
- Following a bilateral meeting with the Commission in April 2016 the Ministry of Agriculture and Forestry prepared an action plan to address any remaining implementation issues. Special attention was given to addressing provisions of the INSPIRE Directive in relation to other EU Environmental Directives and further identification of environmental datasets that are marked as priority data by the Commission. Cooperation and coordination between the environmental actors in Finland will be strengthened.
- Over 90 nationwide spatial dataset have been identified across different administrative levels (municipalities, regional councils and other regional actors, national administrations) as the scope for implementation of the INSPIRE Directive.

1.3 Usage of the infrastructure for spatial information

- The use of geographic information has grown in recent years, mainly due to the increased public availability of information and the implementation of the INSPIRE Directive. The spatial infrastructure for searching, viewing and downloading has improved the accessibility of spatial data and has raised public awareness. **[Effectiveness]** The growth in use of download services has been significant, while the use of view services has somewhat stabilized.
- In 2015:
 - View services (WMS) were good for over 1.5 billion service requests, which is about three times more than in 2012.
 - Download services (WFS file download or direct access to the download) were good for over 150 million target request, which is about seven times more than in 2012.
 - The metadata search service had to handle approximately 2.8 million service requests.
 - Since the Finnish spatial data sets are also heavily used in many other ways, the amounts declared by the INSPIRE reporting are minimum estimates for the use.
- The national geoportal "Paikkatietoikkuna" provides a map interface, where the user can access and use over a 1000 maps in a comprehensive way. The geoportal is developed as open source code on the basis of the established geographic reference architecture and is available for reuse supporting a wide range of user interfaces and map publication. The geoportal is used daily by more than 2.000 different users and has 30.000 registered users. **[Effectiveness]**
- Furthermore broad access to spatial information is provided to the users by many different web applications serving specific use cases: municipal map, routing and planning services, nationwide routing services, geography education, public points of interest, cultural heritage, agricultural applications (crops, aid ...), environmental applications (flood map, water map ...), job opportunities ...
- Access to spatial data has clearly improved and the use increased. The increasing use of geographic information has also encouraged data providers to improve the quality of the data and develop data products and services that are better suited to user needs. Spatial information industry companies also played a significant role in promoting the use of spatial information e.g. Finnish Location Information Cluster, a consortium of geospatial information sector companies offering spatial information services.

1.4 Data Sharing Arrangements

- The opening up of public information has continued and most of the nationwide INSPIRE datasets are open. For the conditions of use a broad international CC BY 4.0 License applies (Creative Commons license), significantly simplifying the use of the data in different member states and by EU institutions. **[Relevance]**
- Environmental data have been open to the public since 2008. The National Land Survey opened the terrain data in 2012. After that, many other authorities including the largest municipalities have opened or are planning to open data for free re-use. In 2015, already more

than half of all the spatial data sets covered by the INSPIRE Directive are available as open data.

- Remaining barriers to the use of spatial data are:
 - Ambiguities in terms of use, unclear data policies and data protection related to privacy consideration that limit effective sharing of data.
 - The use of geographic information and adoption of new policies require new skills in a variety of industries, which causes challenges especially the economically tighter times.

1.5 Costs and Benefits

- In the period 2013-2015 Finland has invested an estimated total of about 7.8 million euros in the implementation of the INSPIRE Directive.
 - For the establishment and maintenance of network services, preparation of metadata, information harmonization and infrastructure development around EUR 4.4 million has been used.
 - Co-ordination, support, training, monitoring and development of centralized systems is used approximately EUR 3.4 million. A significant part of this effort is the same effort development of a national spatial data infrastructure.
- The spatial data infrastructure brings a lot of potential and tangible benefits to data providers and users. Benefits can be listed, but for the time being it is not possible to make estimations of their monetary value. The key benefits of the implementation of the infrastructure for spatial information as identified in a 2016 survey can be summed up as: **[Efficiency]**
 - Metadata catalogues allow for an overview of existing spatial data and supports users in finding relevant spatial information for their information needs.
 - Spatial data is more easily accessible and usable.
 - Network services provide more comprehensive access to better quality data that are up to date.
 - Location information is easier to use in teaching and research.
 - Metadata, services interfaces and the opening up of information for free use have automated data provisioning and created a type of data self-service. This has significantly simplified the work of data providers.
 - More services for Citizens are being developed.
 - Better conditions have been created for decision-making.

2 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 Finland on the [INSPIRE dashboard](#). **The provided statistics is not reflecting the data available on [INSPIRE geoportal](#).** The INSPIRE geoportal 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.

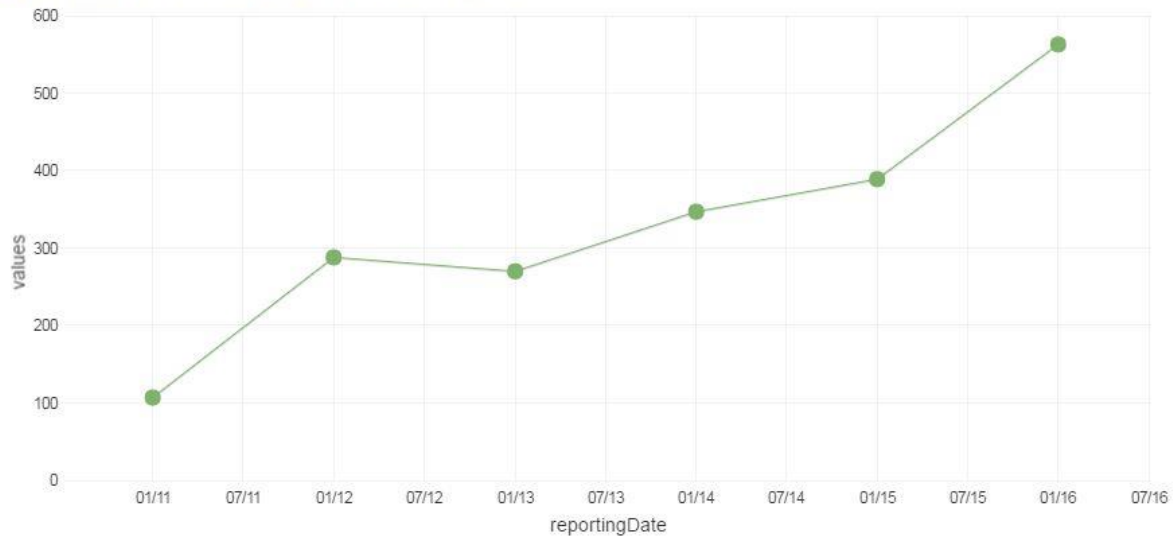
2.1. Identification of spatial data with relevance to the environment (step 1)

a. Evolution of the data offering

DSv_Num: number of spatial data sets for all Annexes

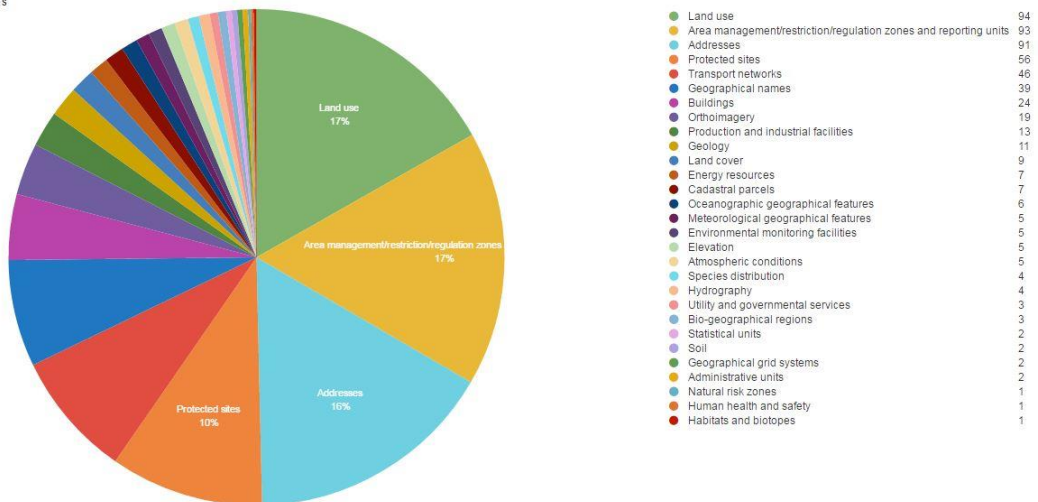
NUMBER OF SPATIAL DATA SETS FOR ALL ANNEXES (DSV_NUM)

● (6) indicatorValue values per 1y | (6 Hits) | Time correction: browser



b. Data sets made available per INSPIRE theme in 2015

NUMBER OF RECORD PER THEMES

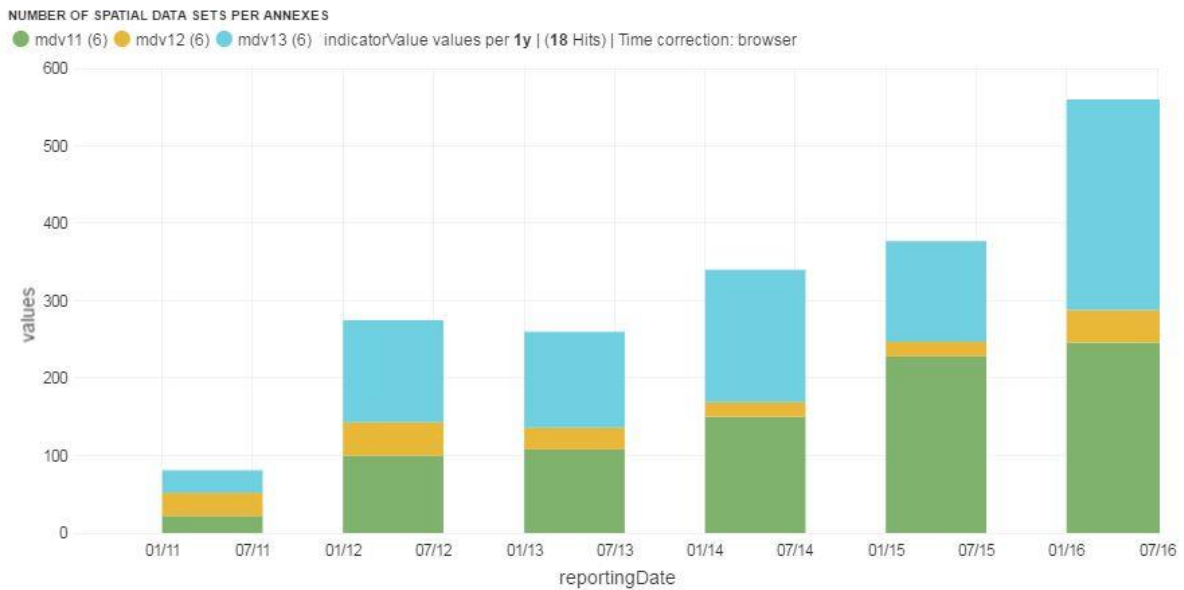


c. Data sets per annex (Annex 1 & 2: spatial reference data; Annex 3: environmental spatial data)

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

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

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



Evaluation of progress for step 1:

Finland has identified a total of 563 spatial data sets with relation to the themes listed in the INSPIRE annexes.

A lot of relevant spatial data sets have already been identified for the different data themes. Further improvement is expected by identifying and documenting spatial data sets required under the existing reporting and monitoring regulations of EU environmental law.

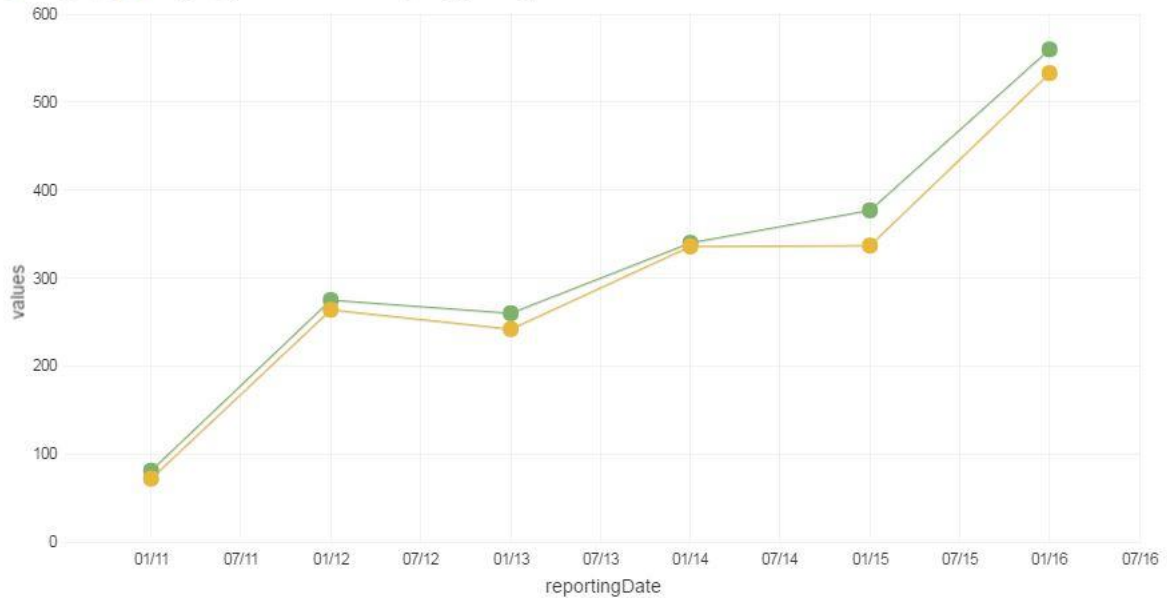
2.2 Documentation of the data (metadata) (step 2)

a. Evolution of documented data and conformity of the documentation

MDv1_DS (green): number of spatial data sets for all Annexes that have metadata

MDv2_DS (yellow): number of spatial data sets for all Annexes that have conformant metadata

NUMBER OF SPATIAL DATA SET THAT HAVE METADATA (MDV1_DS) AND HAVE CONFORMANT METADATA (MDV2_DS)
 ● mdv1_ds (6) ● mdv2_ds (6) indicatorValue values per 1y | (12 Hits) | Time correction: browser



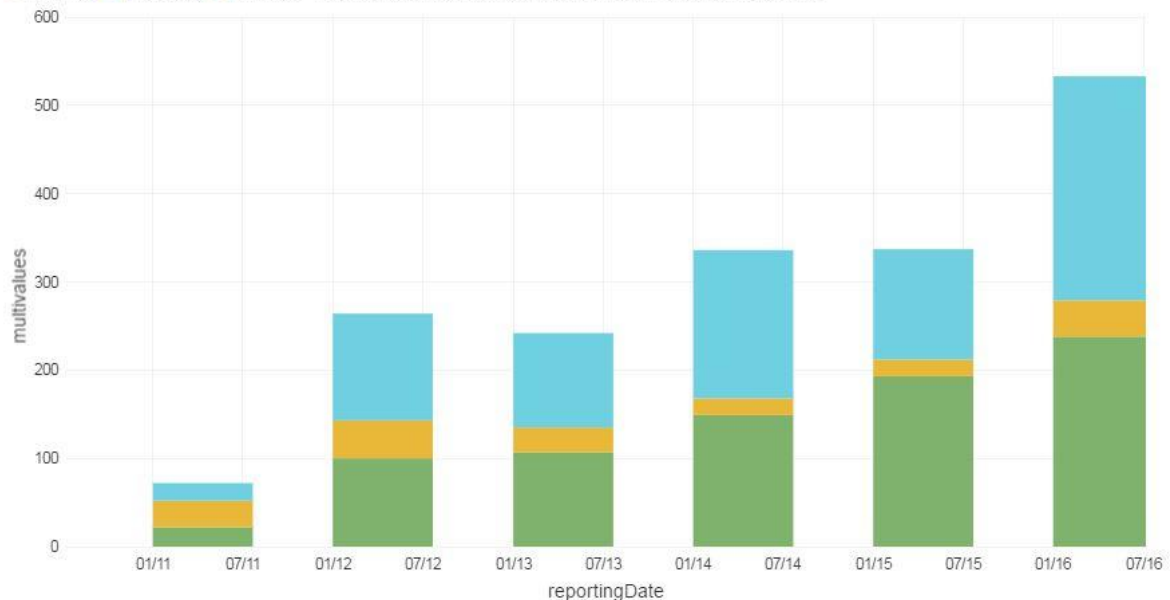
b. Documented data per annex in 2015

MDv2.1 (green): number of spatial data sets for Annex I that have conformant metadata

MDv2.2 (yellow): number of spatial data sets for Annex II that have conformant metadata

MDv2.3 (blue): number of spatial data sets for Annex III that have conformant metadata

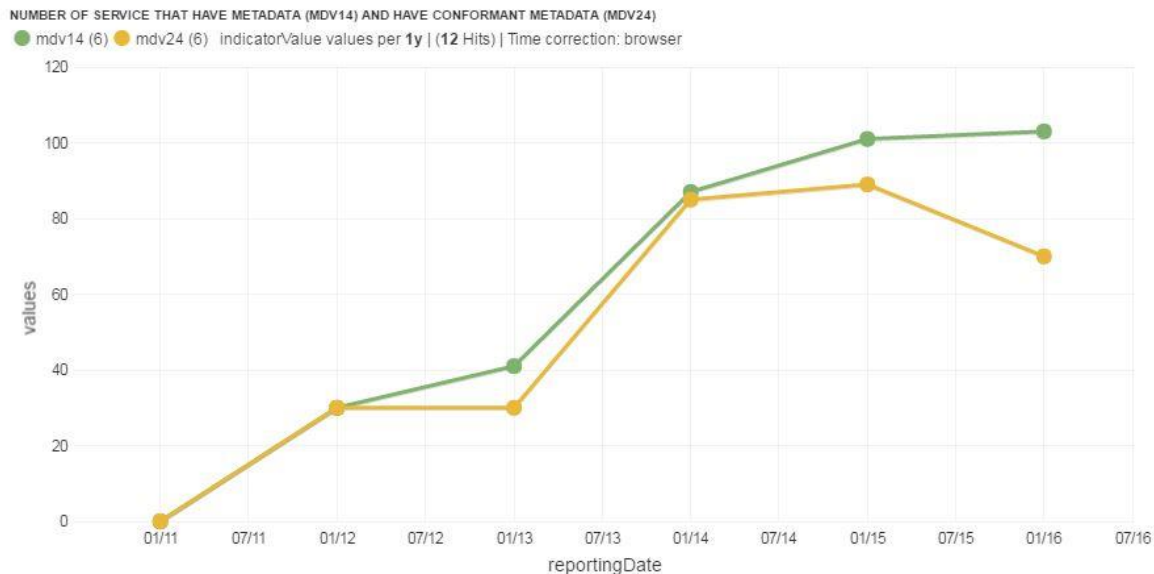
NUMBER OF SPATIAL DATA SETS THAT HAVE CONFORMANT METADATA PER ANNEXES
 ● mdv21 (6) ● mdv22 (6) ● mdv23 (6) indicatorValue multivalues per 1y | (18 Hits) | Time correction: browser



c. Evolution of documented services and conformity of the documentation

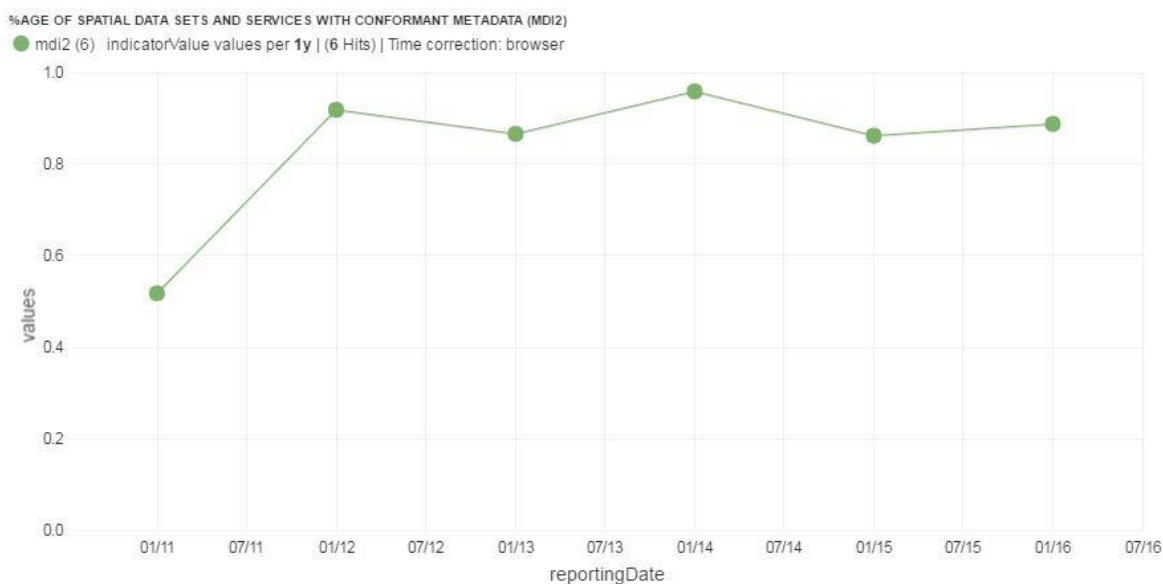
MDv1.4 (green): number of spatial data services that have metadata

MDv2.4 (yellow): number of spatial data services that have conformant metadata



d. Evolution of the overall conformity of the documented metadata

MDi2 = (number of spatial data sets for all Annexes that have conformant metadata + number of spatial data services that have conformant metadata) / (number of spatial data sets for all Annexes + number of spatial data services)



Evaluation of progress for step 2:

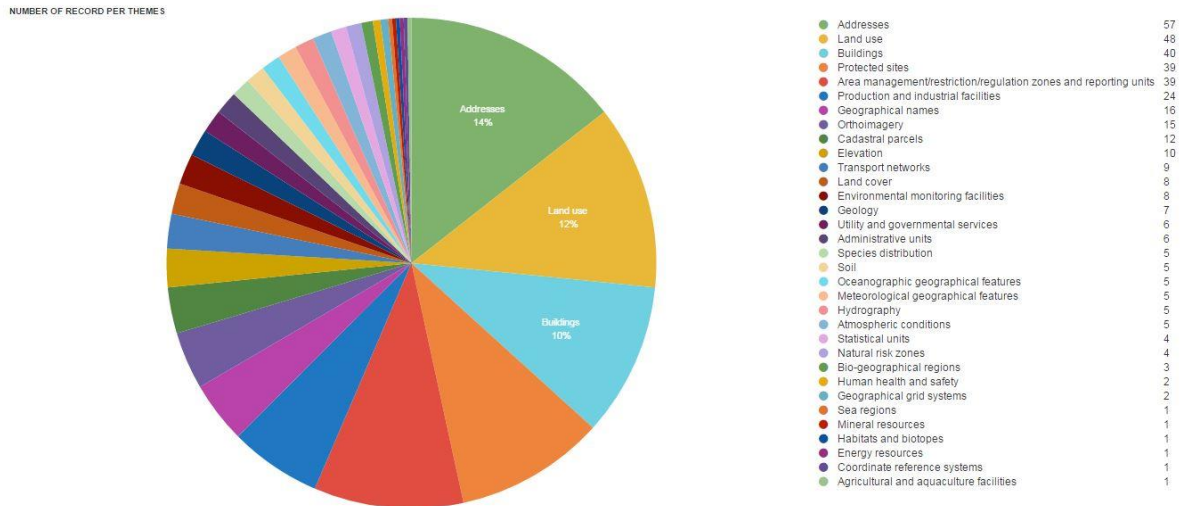
Finland has documented and published metadata through a digital discovery service for 99,46% (560 out of 563) of the identified spatial data sets and 88,80% (103 out of 116) of the digital services. Overall, 88,81% of the metadata conforms to the INSPIRE metadata specifications.

It shows a high level of maturity.

2.3. Accessibility of the data through digital services (step 3)

a. Digitally accessible spatial data per INSPIRE theme in 2015

Note: This figure reflects the amount of spatial data sets made available through a digital service, not the amount of available digital services. A digital service can make several spatial data sets available.



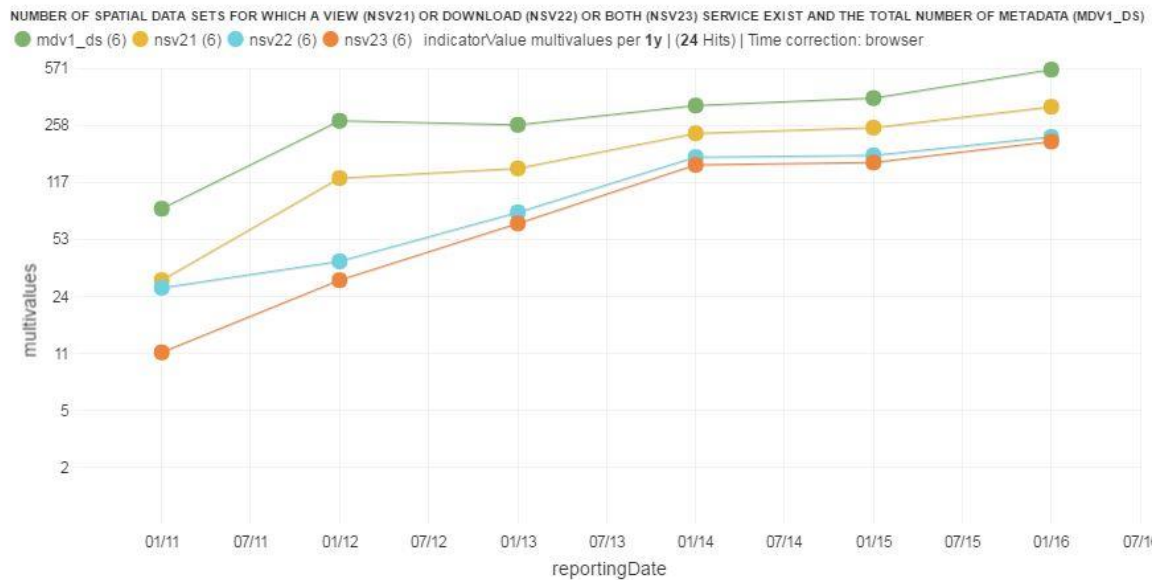
b. Evolution of spatial data made accessible through digital services

MDV1_DS (green): number of spatial data sets for all Annexes that have metadata

NSv2.1 yellow): number of spatial data sets for which a view service exists

NSv2.2 (blue): number of spatial data sets for which a download service exists

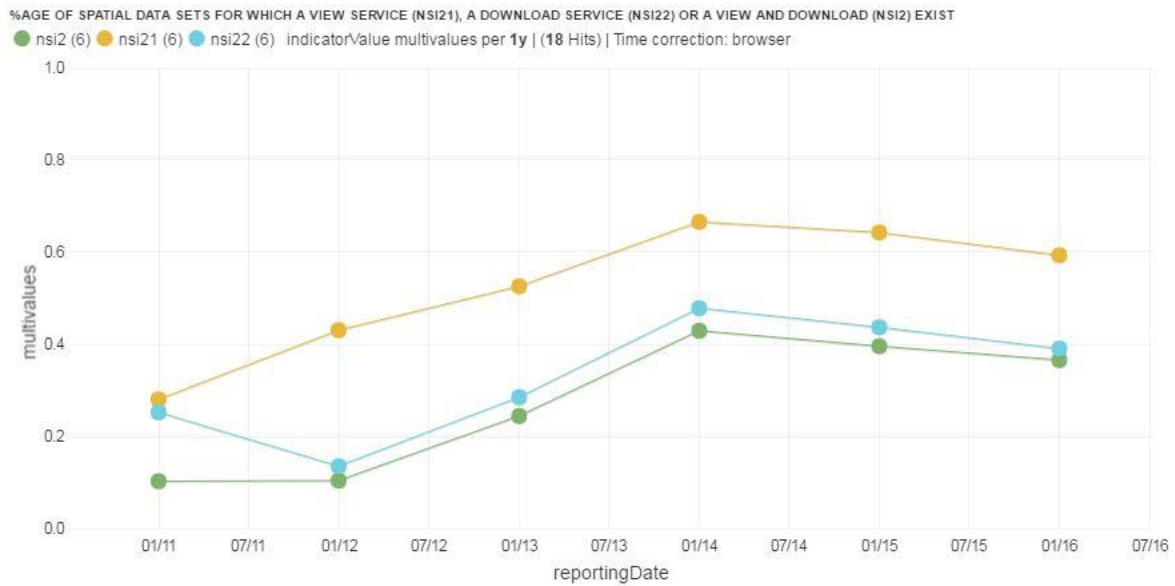
NSv2.3 (orange): number of spatial data sets for which both a view and a download service exists



NSi2 (green) = number of spatial data sets for which both a view and a download service exists / number of spatial data sets for all Annexes

NSi2.1 (yellow) = number of spatial data sets for which a view service exists / number of spatial data sets for all Annexes

NSi2.2 (blue) = number of spatial data sets for which a download service exists / number of spatial data sets for all Annexes



c. Evolution of the conformity of the digital services

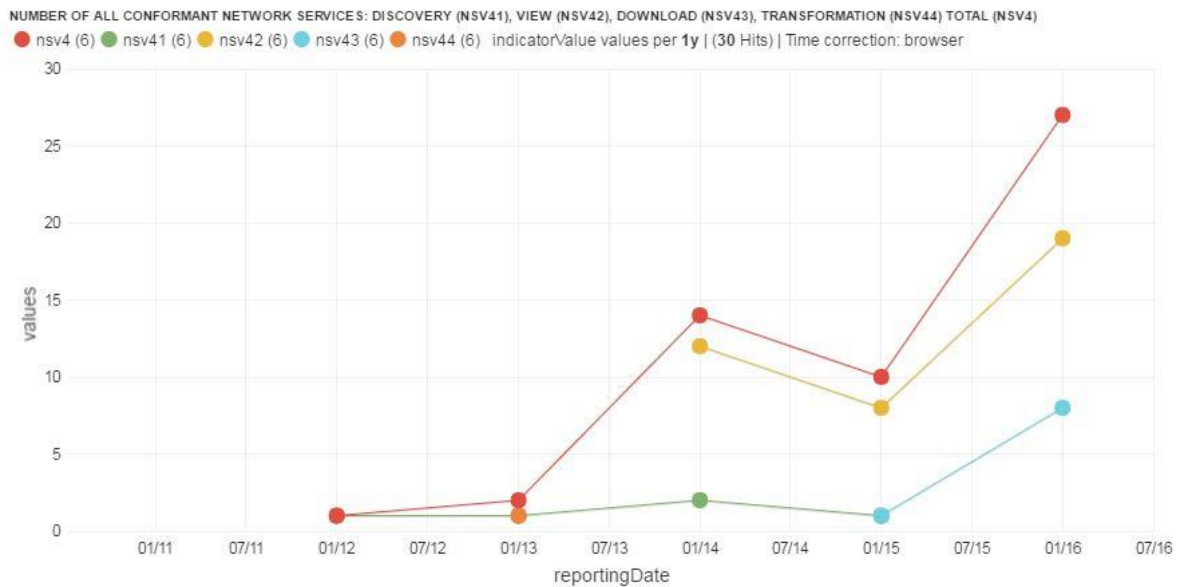
NSv4 (red): number of all conformant network services

NSv4.1 (green): number of conformant discovery network services

NSv4.2 (yellow): number of conformant view network services

NSv4.3 (blue): number of conformant download network services

NSv4.4 (orange): number of conformant transformation network services



Evaluation of progress for step 3:

Finland has:

- 59,32% of its data sets accessible for viewing through a view service;
- 39,07% of its data sets accessible for download through a download service.

23,27% (27 out of 116) of the available digital services are conform to the INSPIRE network service specifications.

The Finland shows that it has built some capacity and competences to make data accessible through digital INSPIRE network services. However many of data sets are still not available through the services. The technical conformity of the available services with the INSPIRE network service specifications is low and should be improved.

2.4. 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](#)). The deadlines for implementation of the spatial data interoperability are in the future: 23/11/2017 for Annex I data and 21/10/2020 for Annex II and III data.

a. Evolution of the conformity with INSPIRE interoperability specifications for spatial data

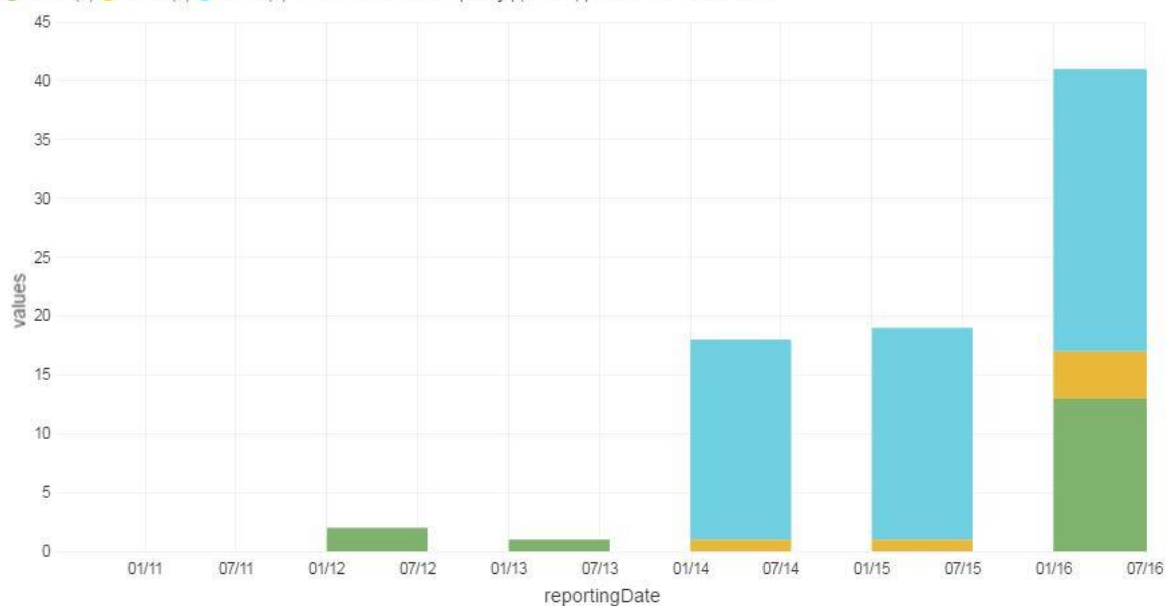
DSv2.1 (green): number of conformant spatial data sets with conformant metadata for Annex I

DSv2.2 (yellow): number of conformant spatial data sets with conformant metadata for Annex II

DSv2.3 (blue): number of conformant spatial data sets with conformant metadata for Annex III

NUMBER OF CONFORMANT SPATIAL DATA SETS PER ANNEXES

● dsv21 (6) ● dsv22 (6) ● dsv23 (6) indicatorValue values per 1y | (18 Hits) | Time correction: browser



Evaluation of progress for step 4:

Finland reported 41 data sets to be conform to the INSPIRE interoperability specifications in 2015.

We can conclude that Finland has started its preparations for the 2017/2020 data interoperability deadlines.

3. Outlook

Finland has critically reviewed their INSPIRE implementation in 2015 and developed an action plan to remediate identified implementation issues and further improve the overall conformity of the implementation. The following actions are set up to directly address previously identified issues:

Toime NRO	2016				2017				2018				
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
P 1													
P 2													
P 3													
P 4													
P 5													
P 6													
M 1													
M 2													
M 3													
M 4													
V 1													
V 2													
V 3													
H 1													
H 2													

a. Spatial Data (P)

- P1. Identifying missing environmental data + including them in the SDI
- P2. Further complete the offering of missing data for the Åland island
- P3. Promoting the implementation of harmonised INSPIRE data products.
- P4. Compiling a national list of spatial data services
- P5. Implementing and introducing a version of the list (cfr. 4) service
- P6. Increased support and training for the use/implementation of spatial data and services

b. Metadata (M)

- M1. Updating the national search service
- M2. Increased support and training for the creation of metadata
- M3. Address shortcomings of Local Administrations as regards metadata
- M4. Create metadata descriptions concerning spatial data services

c. Network Services (V)

- V1. Support and training for network services.
- V2. Increasing monitoring of the compatibility and quality of INSPIRE network services
- V3. Addressing shortcomings in INSPIRE network services

d. Horizontal Implementation (H)

- H1. Obtaining the commitment of decision makers
- H2. Improved geodata cooperation

4. Summary - How is Country doing?

INSPIRE key obligation	Overall implementation status and trend	Outlook	<p align="center">Dashboard Legend</p> <p>Implementation Status:</p> <p>😊: implementation of this provision is well advanced or (nearly) completed. Outstanding issues are minor and can be addressed easily.</p> <p>😐: implementation of this provision has started and made some progress but is still far from being complete. Outstanding issues are significant and need to be addressed to ensure that the objectives of the legislation can still be reached by 2020.</p> <p>😞: Implementation of this provision is falling significantly behind or has not even started. Serious efforts are necessary to close implementation gap.</p> <p>Trend:</p> <p>↗️: the trend of the implementation is positive.</p> <p>➡️: the trend of the implementation is neutral.</p> <p>↘️: the trend of the implementation is negative.</p> <p>Outlook:</p> <p>🟢: clear and targeted actions have been identified which allow reaching the objectives of the legislation in an effective way.</p> <p>🟡: No real progress has been made in the recent past or actions which have been identified are not clear and targeted enough to predict a more positive outlook.</p> <p>🔴: no actions have been identified to overcome identified implementation gaps.</p>
Ensure effective coordination	😊 ↗️	🟢	
Data sharing without obstacles	😐 ↗️	🟢	
Step 1: Identify spatial datasets	😐 ↗️	🟢	
Step 2: Document 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.	😐 ↗️	🟢	

Specific recommendations:

For each Member State, the accessibility of environmental data (based on what the INSPIRE Directive envisages) as well as data-sharing policies have been systematically reviewed.

Finland has indicated in the 3-yearly INSPIRE implementation report that the necessary data-sharing policies allowing access and use of spatial data by national administrations, other Member States' administrations and EU institutions without procedural obstacles are available and implemented. Driven by the Open Programme for making public databases available to all interested parties, spatial data is largely being published as open data.

Assessments of monitoring reports issued by Finland and the spatial information that Finland has published on the INSPIRE geoportal indicate that not all spatial information needed for the evaluation and implementation of EU environmental law has been made available or is accessible. The larger part of this missing spatial information consists of the environmental data required to be made available under the existing reporting and monitoring regulations of EU environmental law.

Suggested action

- Identify and document all spatial data sets required for the implementation of environmental law, and make the data and documentation (metadata) at least accessible 'as is' to other public authorities and the public through the digital services foreseen in the INSPIRE Directive.