Status of implementation of the INSPIRE Directive – 2016 Country Fiches

COUNTRY FICHE Austria

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 Austria 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 Austria representatives.

1. State of Play

A high-level view on the governance, use and impact of the INSPIRE Directive in Austria. 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 the public authority	National Contact Point (NCP) – INSPIRE
Contact information:	
Mailing address	Bundesministerium für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft (BMLFUW) Abteilung II/1; National Contact Point – INSPIRE Stubenring 1 1012 Wien Austria
Telephone number	+43 1 71100-6683
Telefax number	+43 1 71100-5198
Email address	wolfgang.fahrner@bmlfuw.gv.at
Organisation's website URL	www.bmlfuw.gv.at
Contact person	DI Wolfgang Fahrner
Telephone number	+43 1 71100-6683
Email address	wolfgang.fahrner@bmlfuw.gv.at
Contact person - substitute	Ing. Johann Sammet
Telephone number	+43 1 71100-6680
Email address	johann.sammet2@bmlfuw.gv.at

- Coordination Structure
    - Due to Austria's federal structure, coordination structures have been established at national as well as regional (Länder) level.
    - The federal ministry for agriculture, forestry, environment and water (Bundesminister für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft, BMLFUW) has established the national coordination body, consisting of representatives of the

ministries responsible for data sets or services within the scope of INSPIRE (the federal coordination body) and representatives of the Länder and the Austrian associations of cities and municipalities (see figure below).
- o The national coordination body can be supported by experts or expert groups.
- o Information about INSPIRE in Austria is provided through the website www.inspire.gv.at.

- • Progress
  - o The following measures have been implemented to improve quality assurance **[Efficiency]**:
    - ▪ Creation of a national helpdesk (https://assistenzstelle.inspire.gv.at/) to support Austrian public authorities in their INSPIRE implementation.
    - ▪ Creation of a working group and national guidelines for harmonising the approach to creating and maintaining metadata.
    - ▪ Usage of tools for automatic monitoring of services, validation of metadata and network services.
    - ▪ Operation of a redundant hardware component to ensure required availability of discovery services.
  - o It would be desirable that the EC provide tools for validation of data, metadata and network services as well as valid example data sets (e.g. in GML) **[Efficiency]**

1.2 Functioning and coordination of the infrastructure

- • While Austria does not have a comprehensive national spatial data policy or spatial data infrastructure (SDI), there are several SDIs at national, regional and local level, that have developed to support specific public tasks. These SDIs are now being adapted and enhanced in order to meet the INSPIRE requirements. **[Coherence]**
- • Around 40 data providers participate in the INSPIRE implementation in Austria. The main providers of data within the INSPIRE scope are national agencies (e.g. the national mapping, environmental, statistical, geological and meteorological agencies), the federal ministry for agriculture, forestry, environment and water (BMLFUW) and the Länder.
- • Since most municipalities lack the required infrastructure, their INSPIRE obligations are fulfilled on their behalf by the Länder. The agricultural and forestry computing centre (Land- und forstwirtschaftliches Rechenzentrum, LFRZ) also offers the provision of a service infrastructure that can be used by smaller data providers. **[Efficiency]**
- • The Länder have created a spatial data network called GEOLAND.AT, where they coordinate their GIS activities and which publishes a joint geoportal (providing also access to their INSPIRE services). GEOLAND.AT shall play a central role in the INSPIRE implementation of

the Länder and specifically help reaching synergies in the provision of network services. **[Coherence, Efficiency]**

- The users of the metadata solution GeoNetwork hold regular meetings, where also further development and maintenance of the software are being discussed and coordinated. **[Efficiency]**
- The Länder are providing a joint base map (www.basemap.at), which is freely available as a WMTS service. Similarly, a joint, nationwide transport graph (www.gip.gv.at/) is being developed in a cooperation between the federal and Länder level, which will provide a digital map of Austria's transport network available to all authorities. **[Coherence]**

1.3 Usage of the infrastructure for spatial information

- There are currently no reliable figures about the usage of INSPIRE services (and its evolutions over the past years), since their usage is often not monitored separately and estimates are following different methods and classifications.
- Several federal agencies, all Länder and cities and municipalities are operating web-based GIS applications providing public access to the spatial data of the public administration **[Effectiveness]**, e.g. through:
    - the Laender portal geoland.at,
    - the free base map www.basemap.at,
    - the view services provided by the national mapping agency (Bundesamt fuer Eich- und Vermessungswesen, BEV), especially for addresses and cadaster and the topographic map www.austrianmap.at,
    - the ZAMG website www.zamg.ac.at providing weather, climate and earthquake data, and
    - the portal www.naturgefahren.at providing data on natural risks.

1.4 Data Sharing Arrangements

- Generally speaking, Austria's federal structure has also caused the GI sector to develop heterogeneously and according to thematic requirements. This has had negative effects for data sharing across organisations. **[Coherence]**
- Many of the Länder and cities are providing their data (including spatial data within the INSPIRE scope) under an open licence (mainly "Creative Commons Namensnennung 3.0 Österreich", CC-BY 3.0 AT), and many of them participate in the Cooperation for Open Government Data in Austria. **[Effectiveness, Relevance]**
- Some organisations (e.g. ZAMG, AustroControl) have well-established data sharing arrangement with European or international partner organisations (e.g. EuroControl). In such cases, duplication of effort by providing the same data in different ways for INSPIRE, should be avoided. Similarly, environmental reporting obligations should be coordinated with the requirements for data sharing in INSPIRE. **[Efficiency, EU-added value]**
- The estimated high effort for data harmonization under INSPIRE and the lack of resources may be a challenge for an increased data sharing in the coming years. It will be important to develop clear use cases for data harmonization and to coordinate the usage of INSPIRE data for environmental reporting. **[EU-added value]**

1.5 Costs and Benefits

- Costs
    - So far, costs mainly occurred for the human resources for establishing INSPIRE services and workflows as well as investments in the IT infrastructure.
    - Future costs will largely occur for data harmonization and. given the high requirements for availability, the operation and maintenance of the infrastructure.
    - The total costs for the INSPIRE implementation in Austria between 2010–2012 were around 7,5M EUR, shared between the federal (60%) and Länder (40%) level. The municipalities did not occur large costs, since their obligations are largely covered by the Länder. **[Efficiency]**
- Benefits

- The coordination of the INSPIRE implementation between the affected data providers has had positive effects on the communication and cooperation between Austrian data providers at national, but also at European level. **[Effectiveness]**
- INSPIRE is often considered a driver for the creation of a modern SDI. **[Relevance]**
- However, many data providers still do not yet see any specific benefits. It is expected that benefits (simplified and more efficient data sharing, simplified environmental reporting) will occur in the mid to long term. **[Effectiveness]**
- Cost-benefit **[Efficiency]**
  - The cost-benefit ratio between the high estimated effort for data harmonization and the currently low usage of INSPIRE services is seen critical.
  - The benefits of the OGD initiative is seen positively, but it is expected that the lack of common data standards may create problems here in the near future.
  - The joint development of tools, through cooperation of Member States or the EC, is a positive development, that can help improve the implementation and use of INSPIRE.

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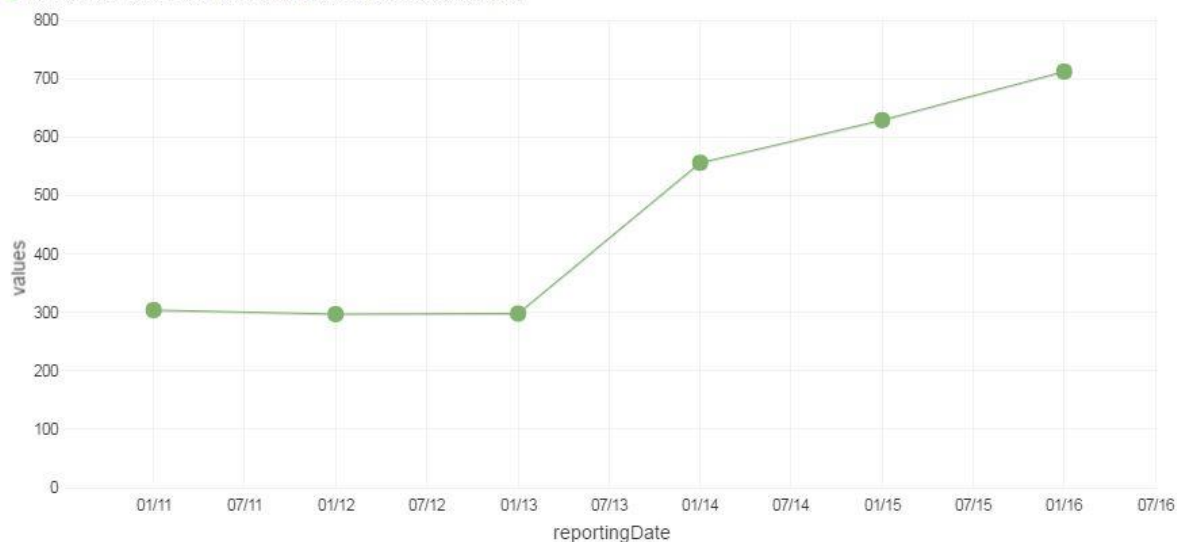
2.1. Identification of spatial data with relevance to the environment (step 1)

a. Evolution of the data offering

DSv_Num: number of spatial data sets for all Annexes
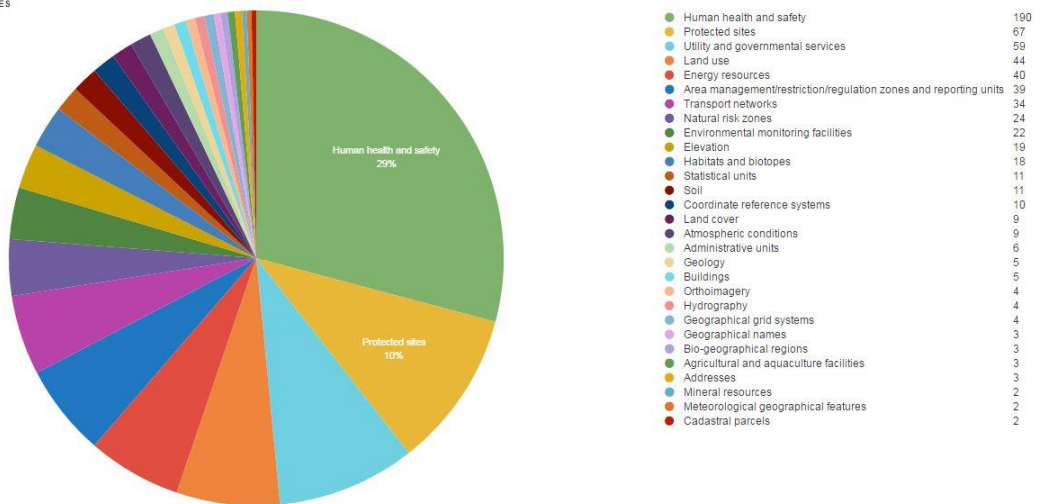

NUMBER OF SPATIAL DATA SETS FOR ALL ANNEXES (DSV_NUM)
(6) indicatorValue values per **1y** | (6 Hits) | Time correction: browser

*b. Data sets made available per INSPIRE theme in 2015*

NUMBER OF RECORD PER THEMES

Theme	Count
Human health and safety	190
Protected sites	67
Utility and governmental services	59
Land use	44
Energy resources	40
Area management/restriction/regulation zones and reporting units	39
Transport networks	34
Natural risk zones	24
Environmental monitoring facilities	22
Elevation	19
Habitats and biotopes	18
Statistical units	11
Soil	11
Coordinate reference systems	10
Land cover	9
Atmospheric conditions	9
Administrative units	6
Geology	5
Buildings	5
Orthoimagery	4
Hydrography	4
Geographical grid systems	4
Geographical names	3
Bio-geographical regions	3
Agricultural and aquaculture facilities	3
Addresses	3
Mineral resources	2
Meteorological geographical features	2
Cadastral parcels	2

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

NUMBER OF SPATIAL DATA SETS PER ANNEXES

● mdv11 (6) ● mdv12 (6) ● mdv13 (6) indicatorValue values per **1y** | (**18** Hits) | Time correction: browser
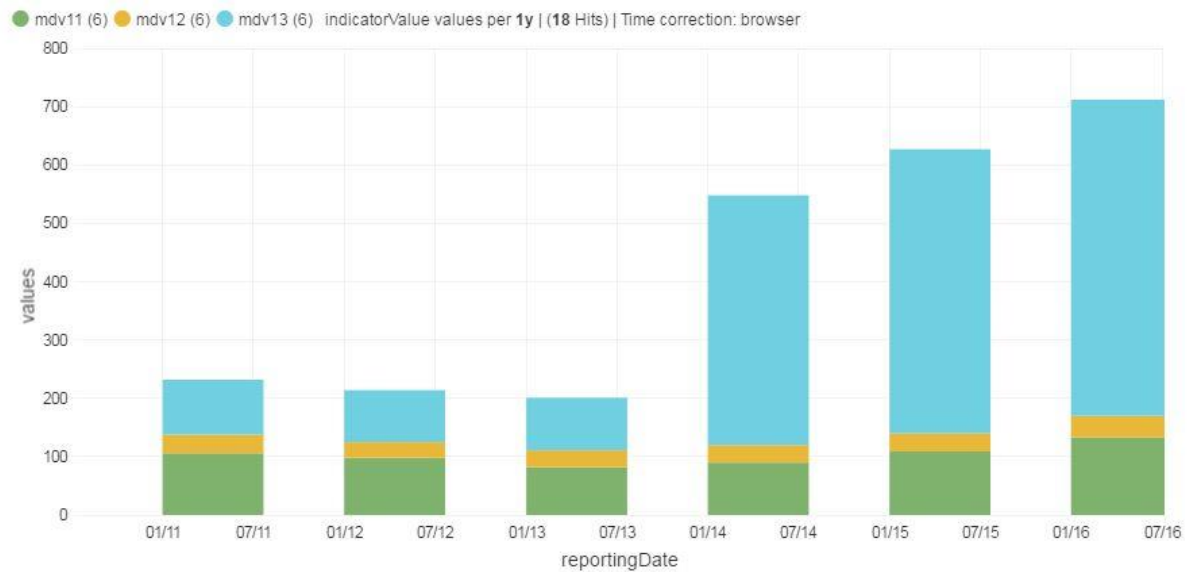
Evaluation of progress for step 1:

Austria has identified a total of 712 spatial data sets with relation to the themes listed in the INSPIRE annexes.

Additional spatial data sets have been identified in period from 2014-2016, mainly under Annex III data themes. A lot of relevant spatial data sets have already been identified for the different data themes. However, the identification could further improve by identifying and documenting spatial data sets required under the existing reporting and monitoring regulations of EU environmental law.

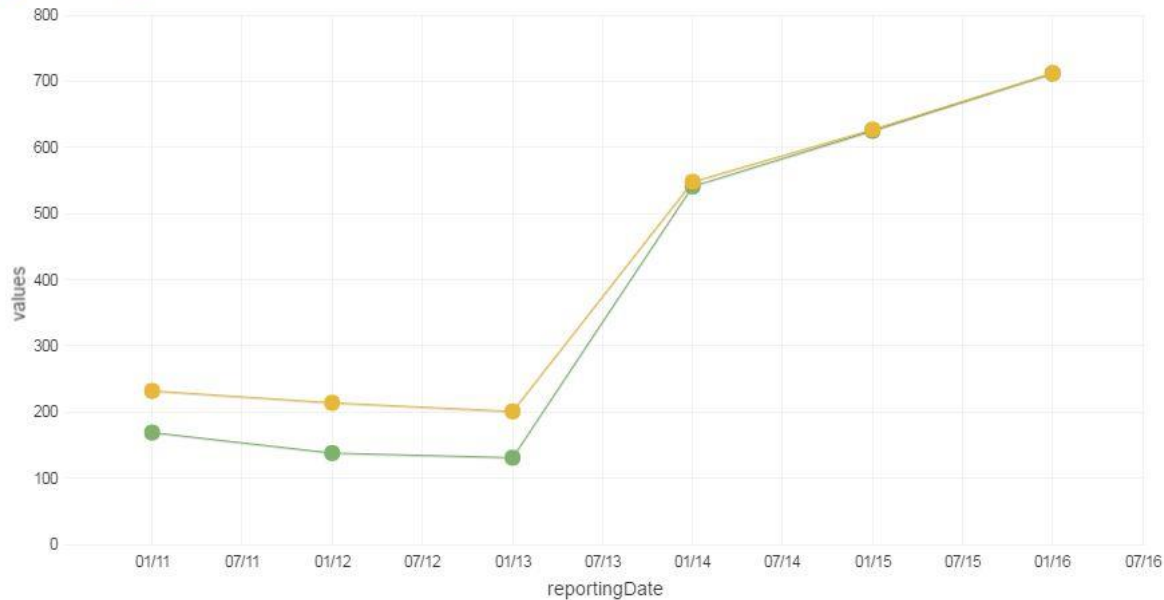## 2.2 Documentation of the data (metadata) (step 2)

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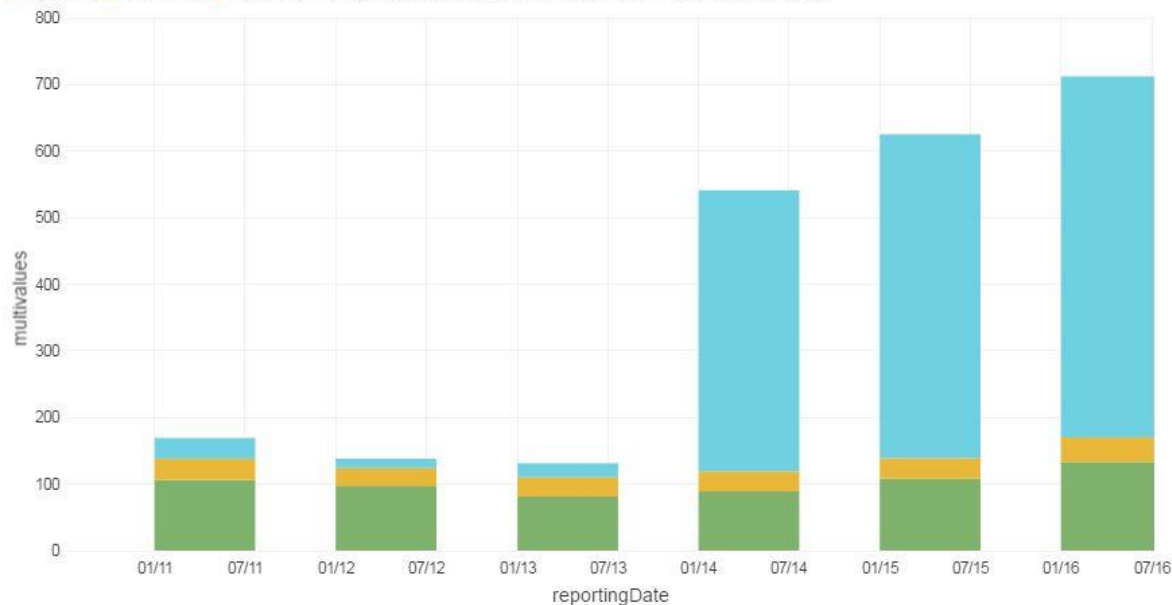
MDv2.2 (yellow): number of spatial data sets for Annex II that have conformant metadata

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

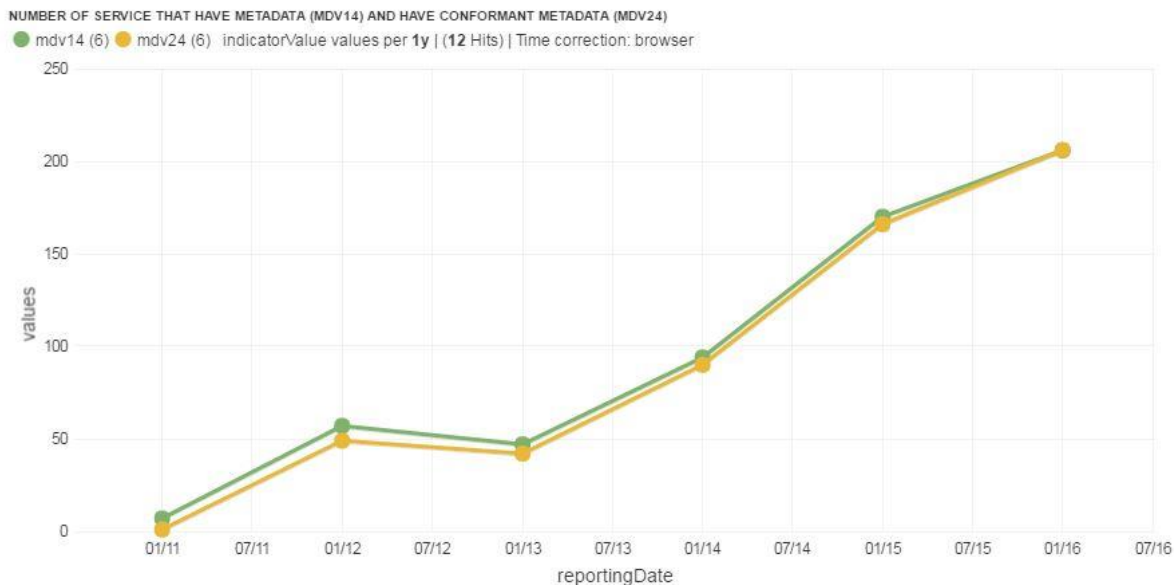NUMBER OF SPATIAL DATA SETS THAT HAVE CONFORMANT METADATA PER ANNEXES

mdv21 (6) mdv22 (6) mdv23 (6) indicatorValue multivalues per **1y** | (**18** Hits) | Time correction: browser

8

## 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

NUMBER OF SERVICE THAT HAVE METADATA (MDV14) AND HAVE CONFORMANT METADATA (MDV24)
● mdv14 (6) ● mdv24 (6) indicatorValue values per **1y** | (**12** Hits) | Time correction: browser

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)

%AGE OF SPATIAL DATA SETS AND SERVICES WITH CONFORMANT METADATA (MDI2)
● mdi2 (6) indicatorValue values per **1y** | (**6** Hits) | Time correction: browser

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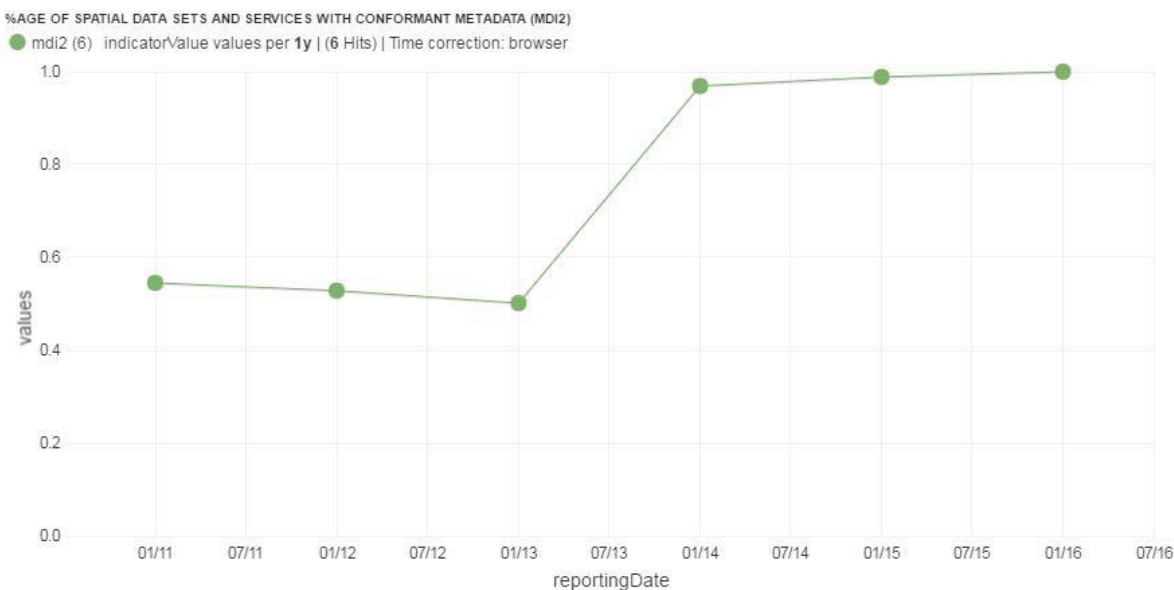
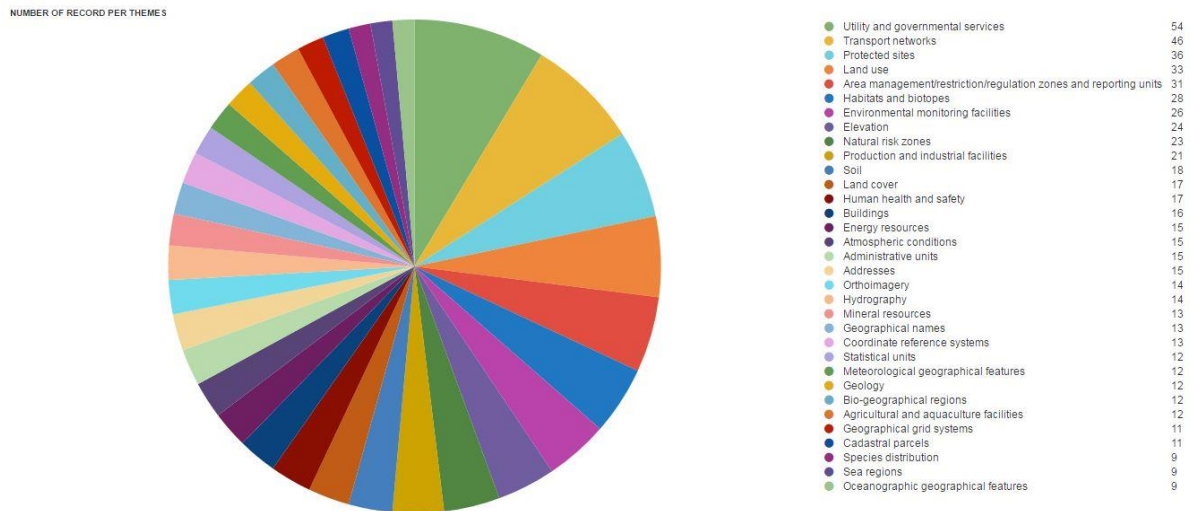**Evaluation of progress for step 2:**
Austria has documented and published metadata through a digital discovery service for 100% (712) of the identified spatial data sets and 100% (206) of the digital services. Overall, 100% of the metadata conforms to the INSPIRE metadata specifications.

It shows a very 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.

NUMBER OF RECORD PER THEMES

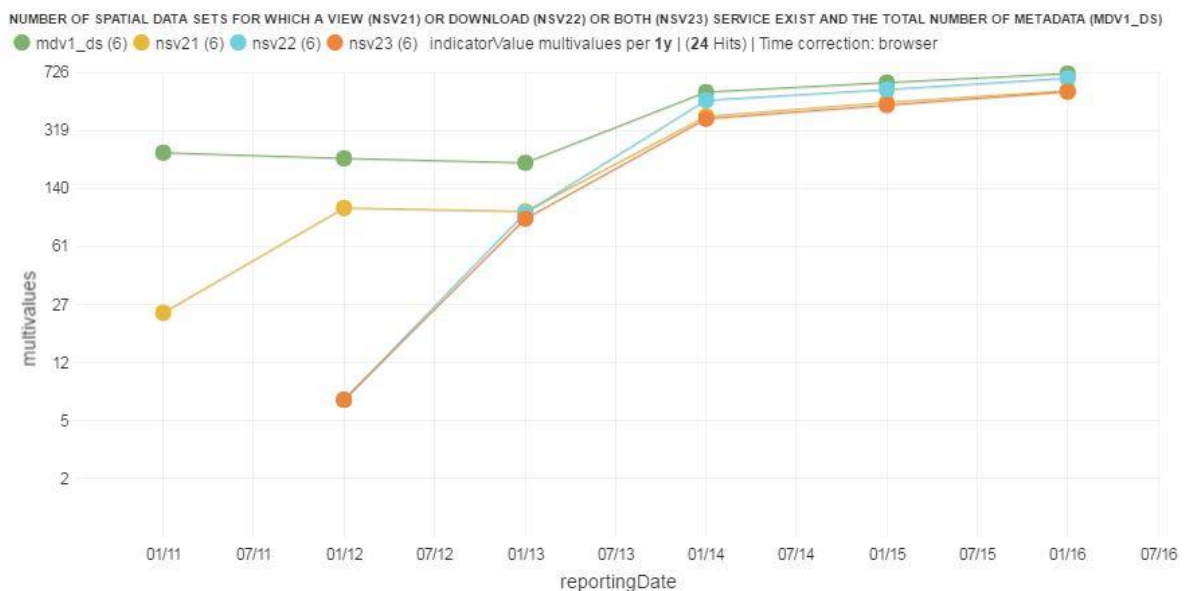| Theme	Count
Utility and governmental services	54
Transport networks	46
Protected sites	36
Land use	33
Area management/restriction/regulation zones and reporting units	31
Habitats and biotopes	28
Environmental monitoring facilities	26
Elevation	24
Natural risk zones	23
Production and industrial facilities	21
Soil	18
Land cover	17
Human health and safety	17
Buildings	16
Energy resources	15
Atmospheric conditions	15
Administrative units	15
Addresses	15
Orthoimagery	14
Hydrography	14
Mineral resources	13
Geographical names	13
Coordinate reference systems	13
Statistical units	12
Meteorological geographical features	12
Geology	12
Bio-geographical regions	12
Agricultural and aquaculture facilities	12
Geographical grid systems	11
Cadastral parcels	11
Species distribution	9
Sea regions	9
Oceanographic geographical features	9

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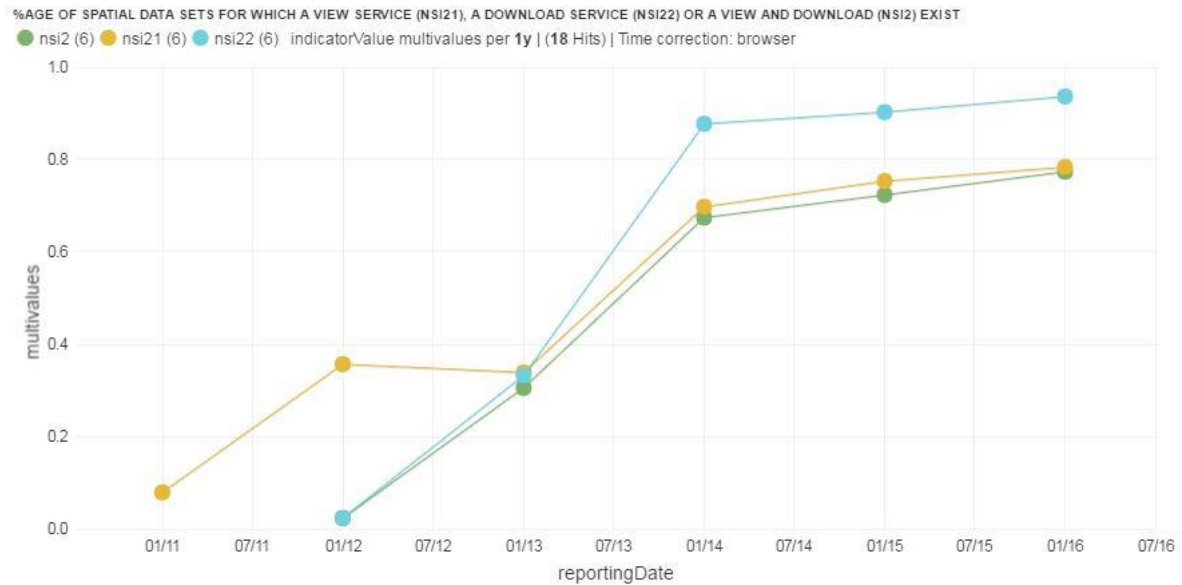NSv2.3 (orange): number of spatial data sets for which both a view and a download service exists

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)

mdv1_ds (6)　nsv21 (6)　nsv22 (6)　nsv23 (6)　indicatorValue multivalues per **1y** | (**24** Hits) | Time correction: browser

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

%AGE OF SPATIAL DATA SETS FOR WHICH A VIEW SERVICE (NSI21), A DOWNLOAD SERVICE (NSI22) OR A VIEW AND DOWNLOAD (NSI2) EXIST
● nsi2 (6) ● nsi21 (6) ● nsi22 (6)   indicatorValue multivalues per **1y** | (**18 Hits**) | Time correction: browser

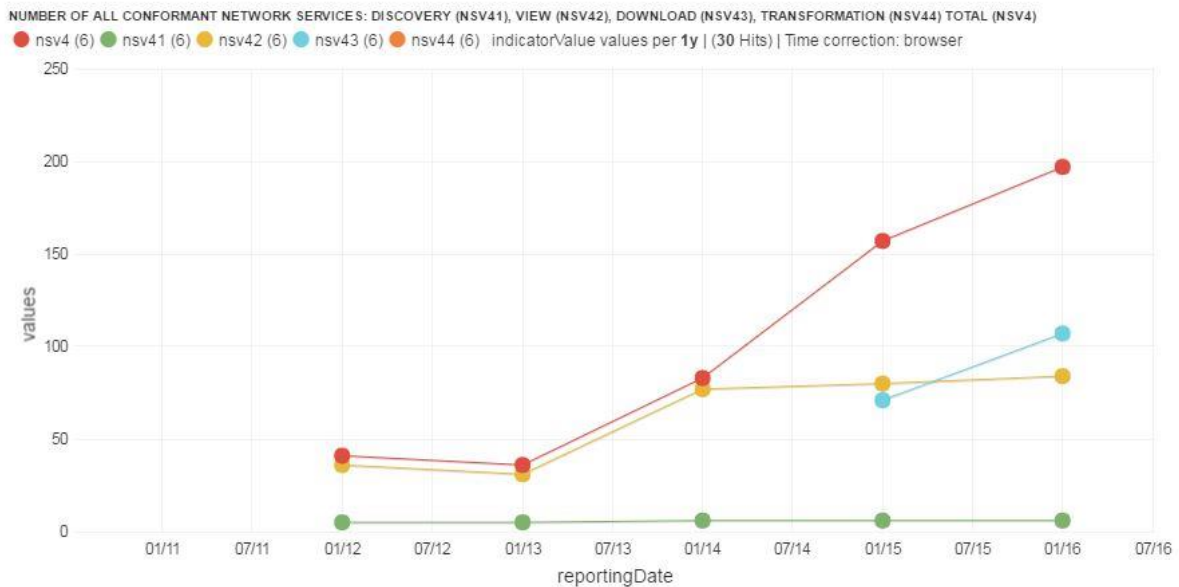## c. Evolution of the conformity of the digital services

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

NUMBER OF ALL CONFORMANT NETWORK SERVICES: DISCOVERY (NSV41), VIEW (NSV42), DOWNLOAD (NSV43), TRANSFORMATION (NSV44) TOTAL (NSV4)
● nsv4 (6) ● nsv41 (6) ● nsv42 (6) ● nsv43 (6) ● nsv44 (6)   indicatorValue values per **1y** | (**30 Hits**) | Time correction: browser

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Evaluation of progress for step 3:

Austria has:

- 78,37% of its data sets accessible for viewing through a view service;

- 93,67% of its data sets accessible for download through a download service.

95,63% of the available digital services are conformant to the INSPIRE network service specifications (197 out of 206).

Austria shows that it has built the necessary capacity and competences to make data accessible through digital INSPIRE network services. The technical conformity of the available services with the INSPIRE network service is very high.

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 (yellow): number of conformant spatial data sets with conformant metadata for Annex I
DSv2.2 (green): 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
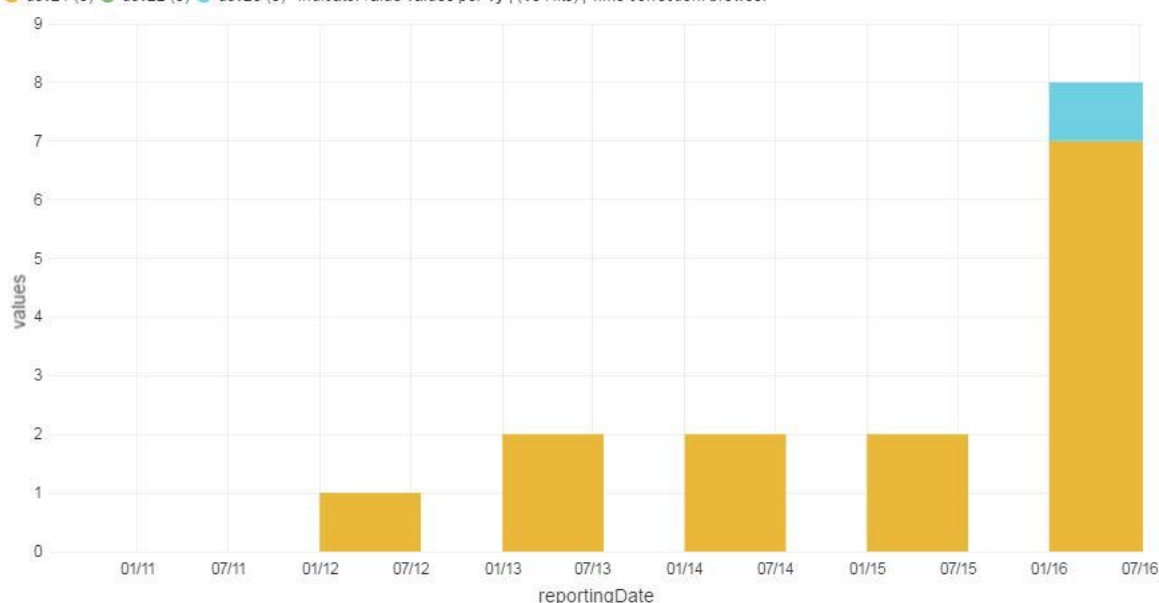
Evaluation of progress for step 4:

Austria has reported 8 data sets to be conform to the INSPIRE interoperability specifications in 2015.

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

3. Outlook

Austria has reviewed their INSPIRE implementation and provided an [action plan](#) in 2016 to remediate existing implementation issues and further improve the overall conformity of the implementation.

The following actions are set up to directly address previously identified issues:

a. Coordination (1.1; 1.2)

- Creation of a national helpdesk (https://assistenzstelle.inspire.gv.at/) to support Austrian public authorities in their INSPIRE implementation and to foster knowledge exchange, including through the organisation of workshops.
- Identification of potential gaps in the data sets provided under INSPIRE with respect to the data sets included in the list of priority data sets for environmental reporting and derivation of priorities for implementation.

b. Data sharing and exchange (1.4)

- none

c. Metadata (2.2)

- Creation of a working group and national guidelines for harmonising the approach to creating and maintaining metadata. Helpdesk support to data providers for creating conformant metadata.

d. Network services (2.3)

- none

e. Data Interoperability (2.4)

- Organisation of workshops and other events to foster the knowledge exchange on data harmonization, both inside Austria and cross-border (e.g. with Germany in the domain of water).

INSPIRE key obligation	Overall implementation status and trend	Outlook	Dashboard Legend
Ensure effective coordination	☺ ↗	⊙ (green)	**Implementation Status:** ☺: implementation of this provision is well advanced or (nearly) completed. Outstanding issues are minor and can be addressed easily.
Data sharing without obstacles	☺ ↗	⊙ (green)	😐: 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.
Step 1: Identify spatial datasets	☺ ↗	⊙ (green)	☹: implementation of this provision is falling significantly behind or has not even started. Serious efforts are necessary to close implementation gap.
Step 2: Document datasets (metadata)	☺ ↗	⊙ (green)	**Trend:** ↗: the trend of the implementation is positive.
Step 3: Provide services for identified spatial datasets (discovery, view, download)	☺ ↗	⊙ (green)	→: the trend of the implementation is neutral. ↘: the trend of the implementation is negative.
Step 4: Make spatial datasets interoperable by aligning them with the common data models.	😐 ↗	⊙ (green)	**Outlook:** ⊙ (green): clear and targeted actions have been identified which allow reaching the objectives of the legislation in an effective way. ⊙ (yellow): 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. ⊙ (red): no actions have been identified to overcome identified implementation gaps.

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.

Austria 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. Austria has no common data-sharing policies for all administrative levels in the federated state, resulting in a differentiated landscape of terms for access and use ranging from open data policies to policies aiming at recovering data acquisition and management costs.

Following the assessments of monitoring reports issued by Austria and the spatial information that Austria has published on the INSPIRE geoportal not all spatial information needed for the evaluation and implementation of EU environmental law has been made available or is accessible. However, at least the majority of the data required to be made available under the existing reporting and monitoring regulations of EU environmental law has been published on the INSPIRE geoportal.

Suggested actions
- Critically review the effectiveness of its data policies and amend them, taking 'best practices' into consideration.
- Identify and document all spatial data sets required for the implementation of environmental law, and make the data and documentation at least accessible 'as is' to other public authorities and the public through the digital services foreseen in the INSPIRE Directive.