

Monitoring INSPIRE Directive in Portugal: a three years review

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Goal

INSPIRE Monitoring and Reporting: The Portuguese approach

- methodology developed to analyse the INSPIRE Annex themes and identify the public authorities formally responsible for the production of the spatial data sets related to those themes.
- tool created to support authorities on the monitoring and reporting process.
- A three years review: the outcomes



Monitoring and Reporting



According to the INSPIRE Directive, Member States shall organise “a continuous monitoring of the implementation progress with respect to the targets set out by INSPIRE” and provide “a three yearly report to the Commission to describe the approach applied by the MS.

Monitoring (Annually)

MS shall establish a list of the **spatial datasets** corresponding to the themes included in the three Annexes of INSPIRE Directive (I, II e III) as well as the **spatial data services** grouped by type of service.

INSPIRE monitoring is based on a set of **indicators** which calculation relies on the information that characterizes the spatial data sets and the services of that list.

The **report** should describe the following aspects:

Reporting (Every three years)

- Organization, coordination and quality assurance;
- Contributions to the operation and coordination of infrastructure;
- Use of the infrastructure for spatial information;
- Data sharing agreements between public authorities;
- Costs and benefits related to Inspire Implementation

INSPIRE in Portugal

Portuguese National Contact Point

- Instituto Geográfico Português (IGP), since 2007.
- Integrated in Direcção Geral do Território (DGT) since 2012

Decree-Law n.º 180/2009, 7 August:

- Reviews the national spatial data infrastructure - National System for Geographic Information (SNIG);
- Transposes the INSPIRE Directive into national law;
- Establishes rules for the creation of spatial data infrastructures in Portugal
- Creates the Conselho de Orientação do SNIG (CO-SNIG) (SNIG orientation Committee), a strategic agency for SNIG
- Force SNIG and other spatial data infrastructures in Portugal to comply with the provisions of INSPIRE implementation rules.

Spatial data sets and services: Responsible Authorities

DGT (IGP) methodology to analyse INSPIRE Annex themes and identify the public authorities formally responsible for the production of spatial data sets and services related to those themes;

- Supported the first monitoring and report (2010)
- Public data providers awareness and their commitment.
- Directive Annexes themes Analysis and Public Authorities legal attributions analysis

**Formally responsible Public Authorities
(INSPIRE Focal Points Network)**

Themes definition

Themes description in the Annexes
Feature Concept Dictionary definitions

Geographic Information topics

Themes identification by the entities

Entity identification by Ministry

Entities forms

issues forms

themes forms

Entities list

On-line form: Data entry for monitoring INSPIRE

IGP created an on-line tool to support the authorities in the monitoring process.

Gestão das Redes SNIG e INSPIRE-PT

Área Reservada Entidades

Menu

Contacto Entidade
Ponto de Contacto
INSPIRE
Temas INSPIRE
Monitorização
Gestores de Metadados
Alterar Palavra-chave
Contactar
Administração

snig



Adicionar Serviços

| Identificação do Serviço | |
|------------------------------|--------------------------------|
| Nome*: | <input type="text"/> |
| Visualização (WMS): | <input type="checkbox"/> |
| Descarregamento (WFS, WCS): | <input type="checkbox"/> |
| Endereço (URL)* | <input type="text"/> |
| Utilização (hits/ano): | <input type="text" value="0"/> |
| Metadados | |
| Existência: | <input type="checkbox"/> |
| Conformidade Perfil MIG 1.2: | <input type="checkbox"/> |
| Publicação no SNIG: | <input type="checkbox"/> |

Adicionar

Gestão das Redes SNIG e INSPIRE-PT

Área Reservada Entidades

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Administração

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Adicionar CDG

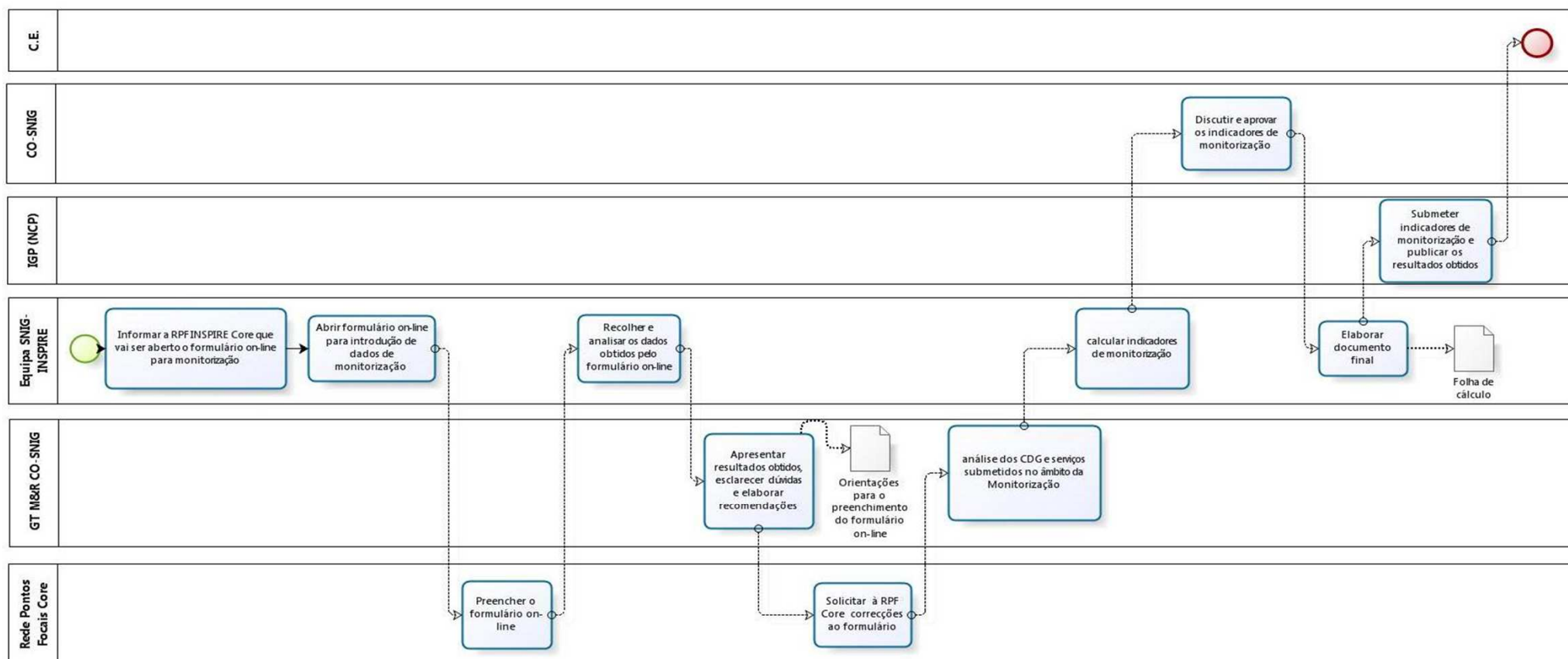
| Identificação do CDG | |
|--|------------------------------------|
| Tema*: | <input type="text"/> |
| Nome*: | <input type="text"/> |
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| Extensão | |
| <input type="radio"/> Portugal | |
| <input type="radio"/> Continente | |
| <input type="radio"/> Madeira | |
| <input type="radio"/> Açores | |
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| Cobertura Prevista* | |
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| <input type="radio"/> Continente | |
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| Metadados | |
| Existência: | <input type="checkbox"/> |
| Conformidade Perfil MIG 1.2: | <input type="checkbox"/> |
| Publicação no SNIG: | <input type="checkbox"/> |
| Serviços | |
| Visualização (WMS): | <input type="checkbox"/> |
| Descarregamento (WFS, WCS): | <input type="checkbox"/> |

* Campos Obrigatórios

Adicionar

Monitoring INSPIRE: Portuguese methodology

The general methodology applied in Portugal to monitoring the INSPIRE Directive



Monitoring INSPIRE: General indicators

| | |
|--------------------------|--|
| Metadata | <ul style="list-style-type: none"> • Existence (MDi1) • Conformity (MDi2) |
| Spatial data sets | <ul style="list-style-type: none"> • Geographical coverage (DSi1) • Conformity (DSi2) |
| Network services | <ul style="list-style-type: none"> • Accessibility of metadata through discovery services (NSi1) • Accessibility of spatial data sets through view and download services (NSi2) • Use of network services (NSi3) • Conformity of network services (NSi4) |

Monitoring INSPIRE: General indicators

MS collect the required information and calculate the monitoring indicators through a calculation sheet provided through the INSPIRE website.

| | | Indicator set | | Metadata | | Data Sets | | Services | | | |
|-----------------------|--------------|---------------|-----------------|-----------|------------|------------|------------|-----------|-----------|------|------------|
| | | | | Existence | Compliance | Extend | Compliance | MD Access | DS Access | Use | Compliance |
| Member State: PT | | Indicator | | | | | | | | | |
| | | | Indicator Name | MDi1 | MDi2 | DSi1 | DSi2 | NSi1 | NSi2 | NSi3 | NSi4 |
| | | | Indicator Value | 68% | 54% | 96% | 0% | 51% | 19% | 0 | 0% |
| | | | Numerator | 324 | 260 | 51.517.671 | 0 | 244 | 81 | 0 | 0 |
| | | | Denominator | 478 | 478 | 53.589.169 | 435 | 478 | 435 | 0 | 0 |
| Spatial Data Sets | | | | | | | | | | | |
| | All Annexes | | SubInd. Name | | | | | NSi1.1 | | | |
| | | | SubInd. Value | | | | | 50% | | | |
| | | | Numerator | | | | | 219 | | | |
| | | | Denominator | | | | | 435 | | | |
| | Annex I | | SubInd. Name | MDi1.1 | MDi2.1 | DSi1.1 | DSi2.1 | | | | |
| | | | SubInd. Value | 67% | 58% | 98% | 0% | | | | |
| | | | Numerator | 122 | 105 | 13.580.088 | 0 | | | | |
| | | | Denominator | 182 | 182 | 13.807.440 | 182 | | | | |
| | Annex II | | SubInd. Name | MDi1.2 | MDi2.2 | DSi1.2 | DSi2.2 | | | | |
| | | | SubInd. Value | 73% | 46% | 96% | 0% | | | | |
| | | | Numerator | 46 | 29 | 6.144.457 | 0 | | | | |
| | | | Denominator | 63 | 63 | 6.415.983 | 63 | | | | |
| | Annex III | | SubInd. Name | MDi1.3 | MDi2.3 | DSi1.3 | DSi2.3 | | | | |
| | | | SubInd. Value | 67% | 52% | 95% | 0% | | | | |
| | | | Numerator | 128 | 98 | 31.793.126 | 0 | | | | |
| | | | Denominator | 190 | 190 | 33.365.746 | 190 | | | | |
| Spatial Data Services | | | | | | | | | | | |
| | All services | | SubInd. Name | MDi1.4 | MDi2.4 | | | NSi1.2 | | NSi3 | NSi4 |
| | | | SubInd. Value | 65% | 65% | | | 58% | | 0 | 0% |
| | | | Numerator | 28 | 28 | | | 25 | | 0 | 0 |
| | | | Denominator | 43 | 43 | | | 43 | | 0 | 0 |

Spatial data sets: Distribution by INSPIRE themes

2010

| Anexo | Tema | CDG |
|--------------|--|------------|
| I | 1. Coordinate reference systems | 36 |
| I | 2. Geographical grid systems | 16 |
| I | 3. Geographical names | 19 |
| I | 4. Administrative units | 14 |
| I | 5. Addresses | 1 |
| I | 6. Cadastral parcels | 3 |
| I | 7. Transport networks | 18 |
| I | 8. Hydrography | 53 |
| I | 9. Protected sites | 22 |
| A I | Total | 182 |
| II | 1. Elevation | 17 |
| II | 2. Land cover | 15 |
| II | 3. Orthoimaginery | 9 |
| II | 4. Geology | 22 |
| A II | Total | 63 |
| III | 1. Statistical units | 5 |
| III | 2. Buildings | 14 |
| III | 3. Soil | 2 |
| III | 4. Land use | 9 |
| III | 5. Human health and safety | 0 |
| III | 6. Utility and governmental services | 18 |
| III | 7. Environmental monitoring facilities | 18 |
| III | 8. Production and industrial facilities | 2 |
| III | 9. Agricultural and aquaculture facilities | 3 |
| III | 10. Population distribution – demography | 1 |
| III | 11. Area management/restriction/regulation | 61 |
| III | 12. Natural risk zones | 10 |
| III | 13. Atmospheric conditions | 0 |
| III | 14. Meteorological geographical features | 2 |
| III | 15. Oceanographic geographical features | 12 |
| III | 16. Sea regions | 11 |
| III | 17. Bio-geographical regions | 1 |
| III | 18. Habitats and biotopes | 1 |
| III | 19. Species distribution | 6 |
| III | 20. Energy resources | 3 |
| III | 21. Mineral resources | 11 |
| A III | Total | 190 |
| CDG | Total (Ano 2010) | 435 |

2011

| Anexo | Tema | CDG |
|--------------|--|------------|
| I | 1. Coordinate reference systems | 38 |
| I | 2. Geographical grid systems | 17 |
| I | 3. Geographical names | 21 |
| I | 4. Administrative units | 14 |
| I | 5. Addresses | 2 |
| I | 6. Cadastral parcels | 8 |
| I | 7. Transport networks | 27 |
| I | 8. Hydrography | 50 |
| I | 9. Protected sites | 81 |
| A I | Total | 258 |
| II | 1. Elevation | 27 |
| II | 2. Land cover | 27 |
| II | 3. Orthoimaginery | 16 |
| II | 4. Geology | 47 |
| A II | Total | 117 |
| III | 1. Statistical units | 3 |
| III | 2. Buildings | 14 |
| III | 3. Soil | 5 |
| III | 4. Land use | 79 |
| III | 5. Human health and safety | 8 |
| III | 6. Utility and governmental services | 33 |
| III | 7. Environmental monitoring facilities | 15 |
| III | 8. Production and industrial facilities | 3 |
| III | 9. Agricultural and aquaculture facilities | 2 |
| III | 10. Population distribution – demography | 1 |
| III | 11. Area management/restriction/regulation | 30 |
| III | 12. Natural risk zones | 8 |
| III | 13. Atmospheric conditions | 106 |
| III | 14. Meteorological geographical features | 1 |
| III | 15. Oceanographic geographical features | 12 |
| III | 16. Sea regions | 12 |
| III | 17. Bio-geographical regions | 1 |
| III | 18. Habitats and biotopes | 1 |
| III | 19. Species distribution | 5 |
| III | 20. Energy resources | 3 |
| III | 21. Mineral resources | 11 |
| A III | Total | 353 |
| CDG | Total (Ano 2011) | 728 |

2012

| Anexo | Tema | CDG |
|--------------|--|------------|
| I | 1. Coordinate reference systems | 38 |
| I | 2. Geographical grid systems | 17 |
| I | 3. Geographical names | 23 |
| I | 4. Administrative units | 14 |
| I | 5. Addresses | 2 |
| I | 6. Cadastral parcels | 8 |
| I | 7. Transport networks | 27 |
| I | 8. Hydrography | 60 |
| I | 9. Protected sites | 82 |
| A I | Total | 271 |
| II | 1. Elevation | 27 |
| II | 2. Land cover | 31 |
| II | 3. Orthoimaginery | 30 |
| II | 4. Geology | 48 |
| A II | Total | 136 |
| III | 1. Statistical units | 5 |
| III | 2. Buildings | 14 |
| III | 3. Soil | 5 |
| III | 4. Land use | 91 |
| III | 5. Human health and safety | 8 |
| III | 6. Utility and governmental services | 33 |
| III | 7. Environmental monitoring facilities | 15 |
| III | 8. Production and industrial facilities | 3 |
| III | 9. Agricultural and aquaculture facilities | 1 |
| III | 10. Population distribution – demography | 1 |
| III | 11. Area management/restriction/regulation | 31 |
| III | 12. Natural risk zones | 8 |
| III | 13. Atmospheric conditions | 113 |
| III | 14. Meteorological geographical features | 1 |
| III | 15. Oceanographic geographical features | 12 |
| III | 16. Sea regions | 2 |
| III | 17. Bio-geographical regions | 1 |
| III | 18. Habitats and biotopes | 1 |
| III | 19. Species distribution | 5 |
| III | 20. Energy resources | 3 |
| III | 21. Mineral resources | 10 |
| A III | Total | 363 |
| CDG | Total (Ano 2012) | 770 |

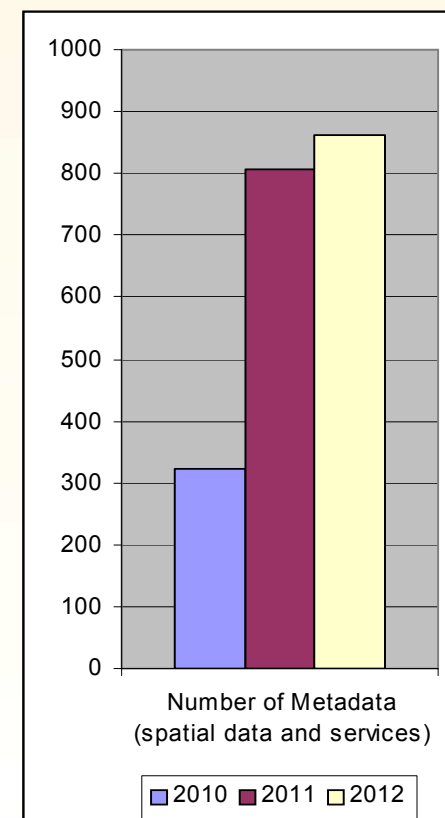
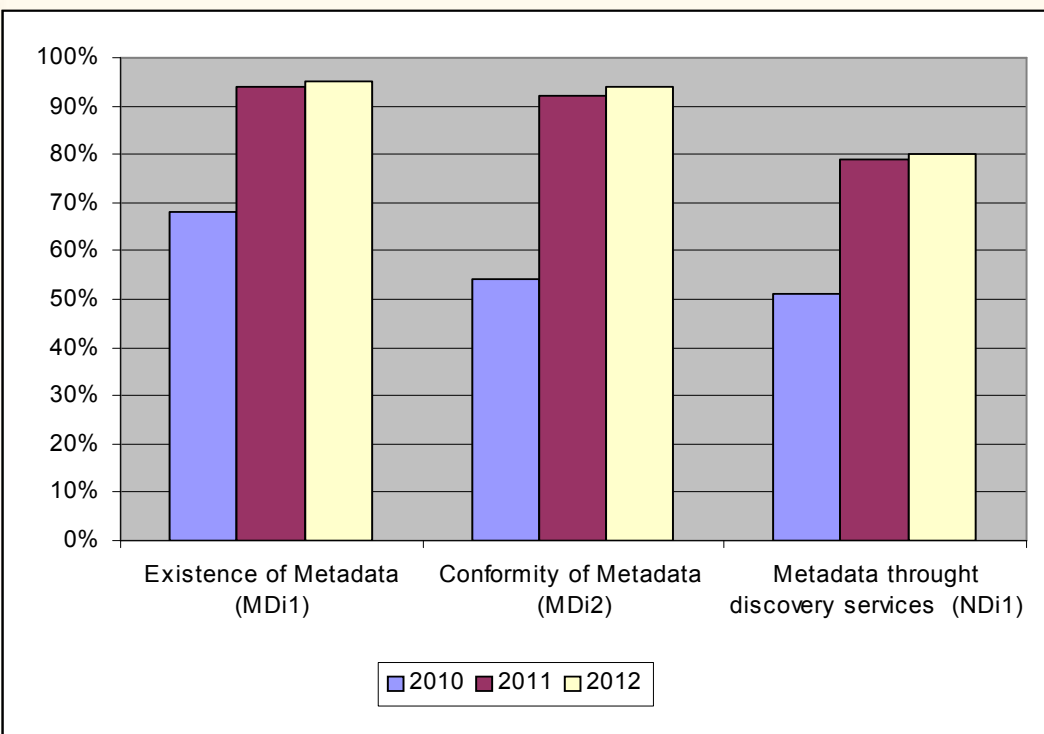
Monitoring INSPIRE Directive in Portugal: a three years review

Metadata indicators

Metadata

- **MDi1** - to measure the **existence of metadata** for the spatial data sets and services.
- **MDi2** - to measure the **conformity of metadata** for spatial data sets and services.

| | 2010 | 2011 | 2012 |
|--|------|------|------|
| Existence of Metadata (MDi1) | 68% | 94% | 95% |
| Conformity of Metadata (MDi2) | 54% | 92% | 94% |
| Metadata through discovery services (NDi1) | 51% | 79% | 80% |
| Number of Metadata (spatial data and services) | 324 | 806 | 862 |

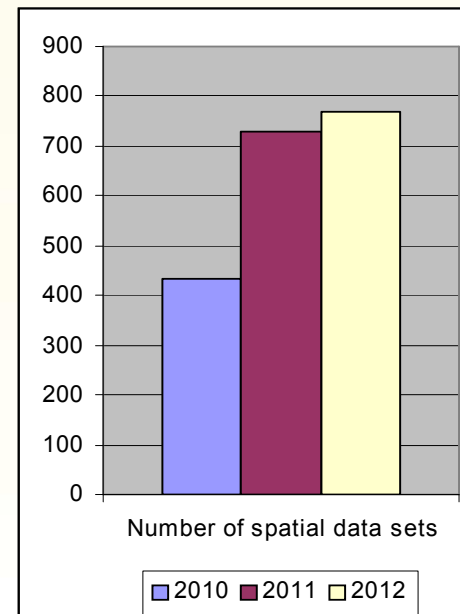
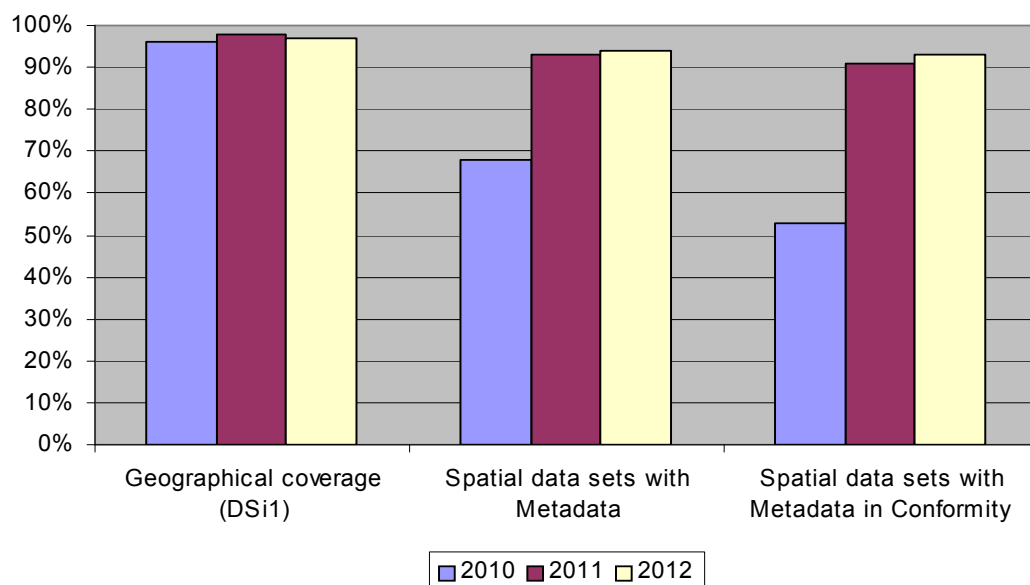


Spatial data sets indicators

Spatial data sets

- **DSi1** - to measure the **geographical coverage** of the spatial data sets.
- **DSi2** - to measure the **conformity** of spatial data sets.

| | Total | | |
|---|-------|------|------|
| | 2010 | 2011 | 2012 |
| Geographical coverage (DSi1) | 96% | 98% | 97% |
| Spatial data sets with Metadata | 68% | 93% | 94% |
| Spatial data sets with Metadata in Conformity | 53% | 91% | 93% |
| Number of spatial data sets | 435 | 728 | 770 |



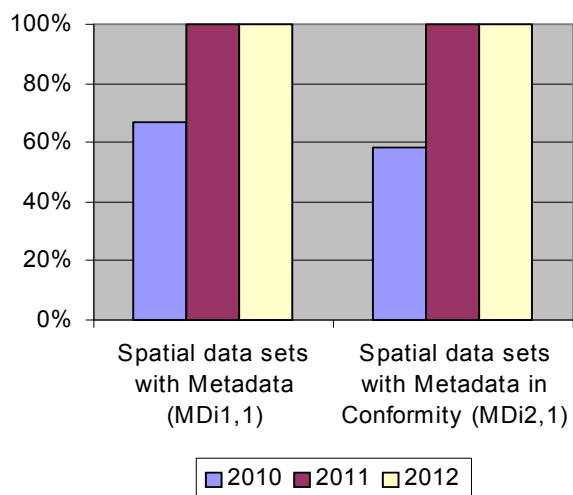
Spatial data sets indicators: Metadata existence and conformity

03-12-2010 - Metadata available for spatial data sets (Annex I e II)

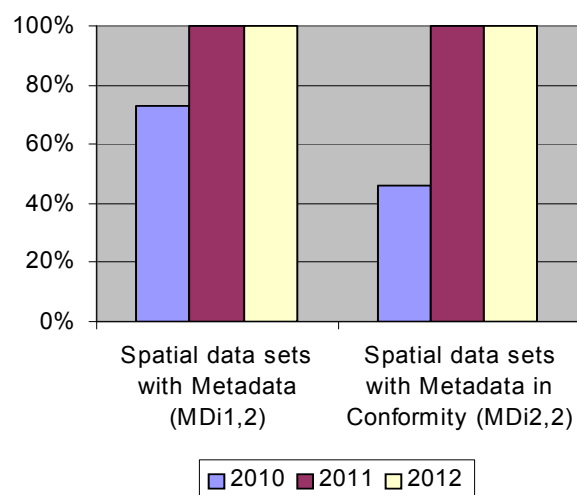
03-12-2013 - Metadata available for spatial data sets (Annex III)

| | Annex I | | | Annex II | | | Annex III | | |
|---|---------|------|------|----------|------|------|-----------|------|------|
| | 2010 | 2011 | 2012 | 2010 | 2011 | 2012 | 2010 | 2011 | 2012 |
| Geographical coverage (DSi1) | 98% | 98% | 98% | 96% | 99% | 98% | 95% | 97% | 97% |
| Spatial data sets with Metadata (MDi1, Annex I, II and III) | 67% | 100% | 100% | 73% | 100% | 100% | 67% | 87% | 88% |
| Spatial data sets with Metadata in Conformity (MDi2, Annex I, II and III) | 58% | 100% | 100% | 46% | 100% | 100% | 52% | 82% | 85% |
| Number of spatial data sets | 182 | 258 | 271 | 63 | 117 | 136 | 190 | 353 | 363 |

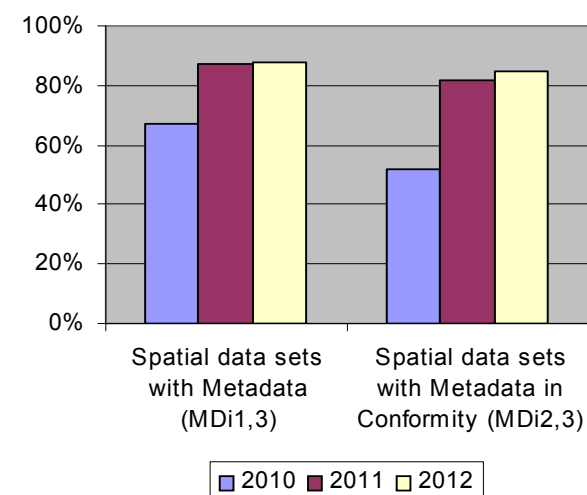
Annex I



Annex II



Annex III

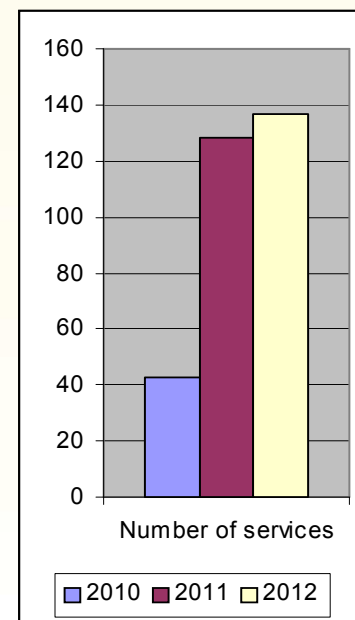
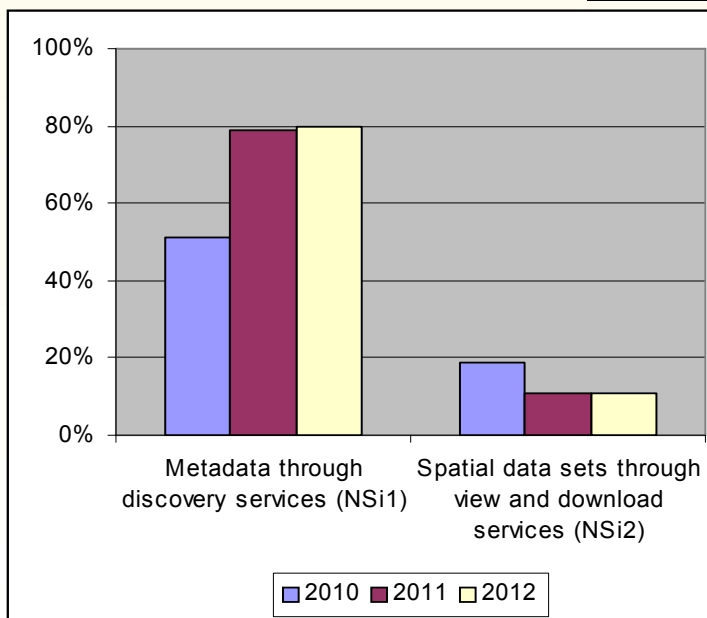


Services indicators

Network services

- **NSi1** - to measure the **accessibility of metadata** for the spatial data sets and services through **discovery services**.
- **NSi2** - to measure the **accessibility of spatial data sets** through **view and download services**
- **NSi3** – to measure the **use** of all network services
- **NSi4** - to measure the **conformity** of the network services

| | 2010 | 2011 | 2012 |
|---|------|------|------|
| Metadata through discovery services (NSi1) | 51% | 79% | 80% |
| Spatial data sets through view and download services (NSi2) | 19% | 11% | 11% |
| Number of services | 43 | 128 | 137 |





Sistema Nacional
de Informação
Geográfica

European SDI
Best Practice
Award 2009



ISTANBUL 2012



Dissemination

<http://snig.igeo.pt/inspire>



INSPIRE EU

O que é
Temas
Calendário
Consultas
Site INSPIRE
Geoportal
Disposições de execução
Arquivo documental

INSPIRE PT

Quem é quem
Enquadramento Legal
Reuniões
Ações de divulgação
Monitorização e Relatórios
Formação
Perguntas frequentes

Adoption
Roadmap
Implementing Rules
Monitoring and Reporting
Metadata
Data Specifications
Network Services
Spatial Data Services
Data and Service Sharing

Stakeholder Participation
Stakeholder Participation
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Organisations
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Select the year **2010** 2011

| INSPIRE Monitoring & Reporting 2011 (Reference Year 2010) | | | |
|--|-----------------------------|--------------------------------|------------------------------|
| Member States Country www | Monitoring Indicators | Reporting Original language | English |
| AT Austria's website | Austria's indicators | Austria's report (AT) | Austria's report (EN) |
| BE Belgium's website | Belgium's indicators | Belgium's report (BE) | Belgium's report (EN) |
| BG Bulgaria's website | Bulgaria's indicators | Bulgaria's report (BG) | Bulgaria's report (EN) |
| CY | | | |
| CZ Czech Republic's website | Czech Republic's indicators | Czech Republic's report (CZ) | Czech Republic's report (EN) |
| DE Germany's website | Germany's indicators | Germany's report (DE) | Germany's report (EN) |
| DK Denmark's website | Denmark's indicators | Denmark's report (DK) | Denmark's report (EN) |
| EE Estonia's website | Estonia's indicators | Estonia's report (EE) | Estonia's report (EN) |
| EL Greece's website | Greece's indicators | Greece's report (EL) | Greece's report (EN) |
| ES Spain's website | Spain's indicators | Spain's report (ES) | Spain's report (EN) |
| FI Finland's website | Finland's indicators | Finland's report (FI) | Finland's report (EN) |
| FR France's website | France's indicators | France's report (FR) | France's report (EN) |
| HU Hungary's website | Hungary's indicators | | Hungary's report (EN) |
| IE Ireland's website | Ireland's indicators | | Ireland's report (EN) |
| IT Italy's website | Italy's indicators | Italy's report (IT) | Italy's report (EN) |
| LT Lithuania's website | Lithuania's indicators | Lithuania's report (LT) | Lithuania's report (EN) |
| LU Luxembourg's website | Luxembourg's indicators | | Luxembourg's report (EN) |
| LV Latvia's website | Latvia's indicators | Latvia's report (LV) | Latvia's report (EN) |
| MT Malta's website | | | Malta's report (EN) |
| NL Netherlands's website | Netherlands's indicators | Netherlands's report (NL) | Netherlands's report (EN) |
| PL Poland's website | Poland's indicators | Poland's report (PL) | Poland's report (EN) |
| PT Portugal's website | Portugal's indicators | Portugal's report (PT) | Portugal's report (EN) |
| RO Romania's website | Romania's indicators | Romania's report (RO) | Romania's report (EN) |
| SE Sweden's website | Sweden's indicators | | Sweden's report (EN) |
| SI Slovenia's website | Slovenia's indicators | Slovenia's report (SI) | Slovenia's report (EN) |



HEADLINES

News: 20-Jan-2012: INSPIRE
Conference 2012: Call for p

NEWS EVENTS

- 14-Jun-12 Technical
Guidance for the
implementation of INSPIRE
Download Services Published
- 11-May-12 INSPIRE
Conference 2012: Draft
programme published
- 25-Apr-12 New report: A
Conceptual Model for
Developing Interoperability
Specifications in Spatial Data
Infrastructures
- 20-Mar-12 Registration to
the INSPIRE Conference 2012
is now open
- 13-Mar-12 Consultation on
the EU environment policy
priorities for 2020: Towards a
7th EU Environment Action
Programme

<http://inspire.jrc.ec.europa.eu>

Monitoring INSPIRE Directive in Portugal: a three years review



INSPIRE identified problems

New perspectives



Decree-Law n.º 180/2009, 7 August: 2012 - A step forward

Review the national spatial data infrastructure - National System for Geographic Information (SNIG):

- . Web Site Interface
- . Using metadata;
- . Establishing partnerships among relevant data providers;
- . Ecommerce platform development
- . Promoting data quality associated with fitness for use

New Portuguese National Contact Point:

Monitoring INSPIRE Directive in Portugal: a three years review
Direcção Geral do Território (DGT)