Introduction on data sharing in Europe the analysis performed by EJP SOIL WP6 – D6.2

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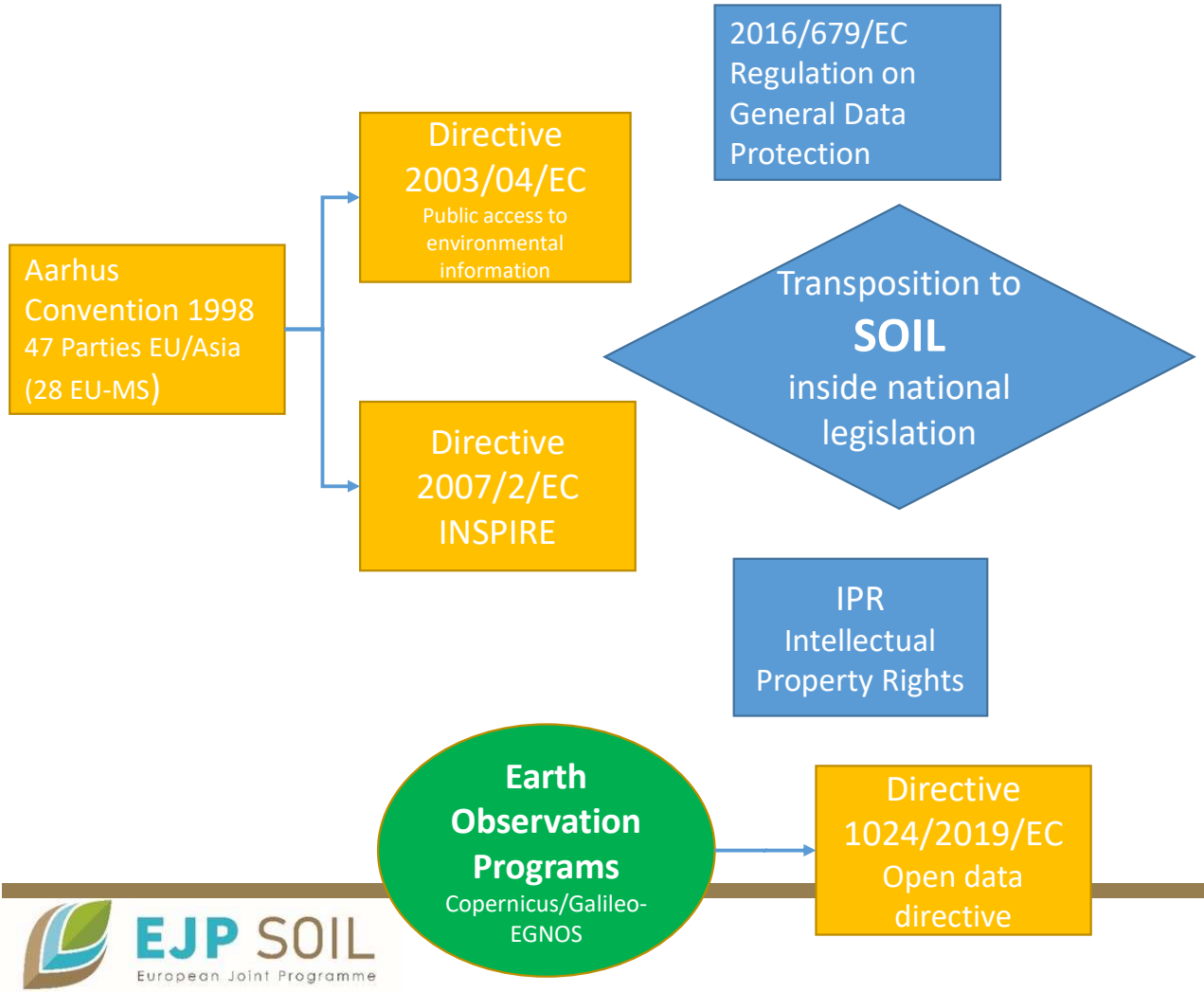
THE LEGAL FRAMEWORK IN EUROPE (FROM THE EJP SOIL D6.2)



The aim of the deliverable was to analyse the **state of implementation of the EU-Directives** and the implications linked to their transposition in relation to soil information.

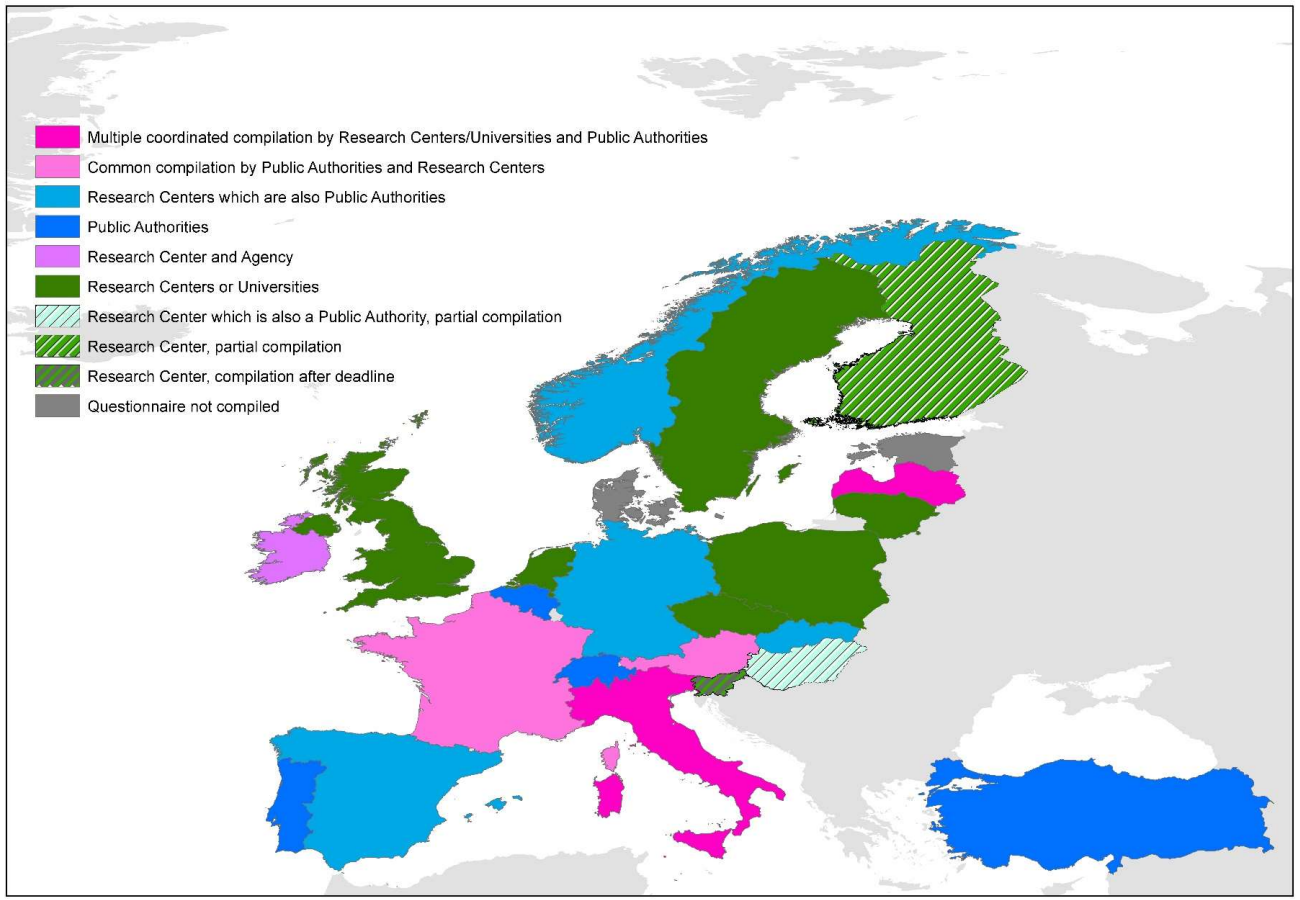
Agricultural soils are usually under private property in Europe, therefore the public right to have access to environmental information, must be balanced with the right of landowners in relation to their properties.

Member States are allowed to a certain **flexibility in the transposition of EU-Directives, given their national legislations**, therefore the national transposition may be changed substantially.

DIRECTIVE 2003/4/EC, on public access to environmental information
from the D6.2 regulatory framework at supranational level

OWNERSHIP	**Article 3 Access to environmental information upon request** **Article 3(5) For the purposes of this Article, Member States shall ensure that:** **(a) officials are required to support the public in seeking access to information;** **(b) lists of public authorities are publicly accessible; and** **(c) the practical arrangements are defined for ensuring that the right of access to environmental information can be effectively exercised, such as:** **— the designation of information officers;** **— the establishment and maintenance of facilities for the examination of the information required,** **— registers or lists of the environmental information held by public authorities or information points, with clear indications of where such information can be found.**
SHARING	**Article 4 Exceptions (to sharing)** **Article 4(2) Member States may provide for a request for environmental information to be refused if disclosure of the information would adversely affect: (a) the confidentiality of the proceedings of public authorities, where such confidentiality is provided for by law; (b) international relations, public security or national defence; (c) the course of justice, the ability of any person to receive a fair trial or the ability of a public authority to conduct an enquiry of a criminal or disciplinary nature; (d) the confidentiality of commercial or industrial information where such confidentiality is provided for by national or Community law to protect a legitimate economic interest, including the public interest in maintaining statistical confidentiality and tax secrecy; (e) intellectual property rights; (f) the confidentiality of personal data and/or files relating to a natural person where that person has not consented to the disclosure of the information to the public, where such confidentiality is provided for by national or Community law; (g) the interests or protection of any person who supplied the information requested on a voluntary basis without being under, or capable of being put under, a legal obligation to do so, unless that person has consented to the release of the information concerned; (h) the protection of the environment to which such information relates, such as the location of rare species. […] Member States may not, by virtue of paragraph 2(a), (d), (f), (g) and (h), provide for a request to be refused where the request relates to information on emissions into the environment.**

QUESTIONNAIRE ON SOIL DATA OWNERSHIP AND SHARING of the D6.2



7 **sections**:

a) general information on the respondent

b) soil data ownership, with reference to the Directive (2003/4/EC) on public access to environmental information

b) adoption/transposition of the **INSPIRE** Directive (2007/2/EC)

c) metadata, with reference to the INSPIRE Directive (2007/2/EC)

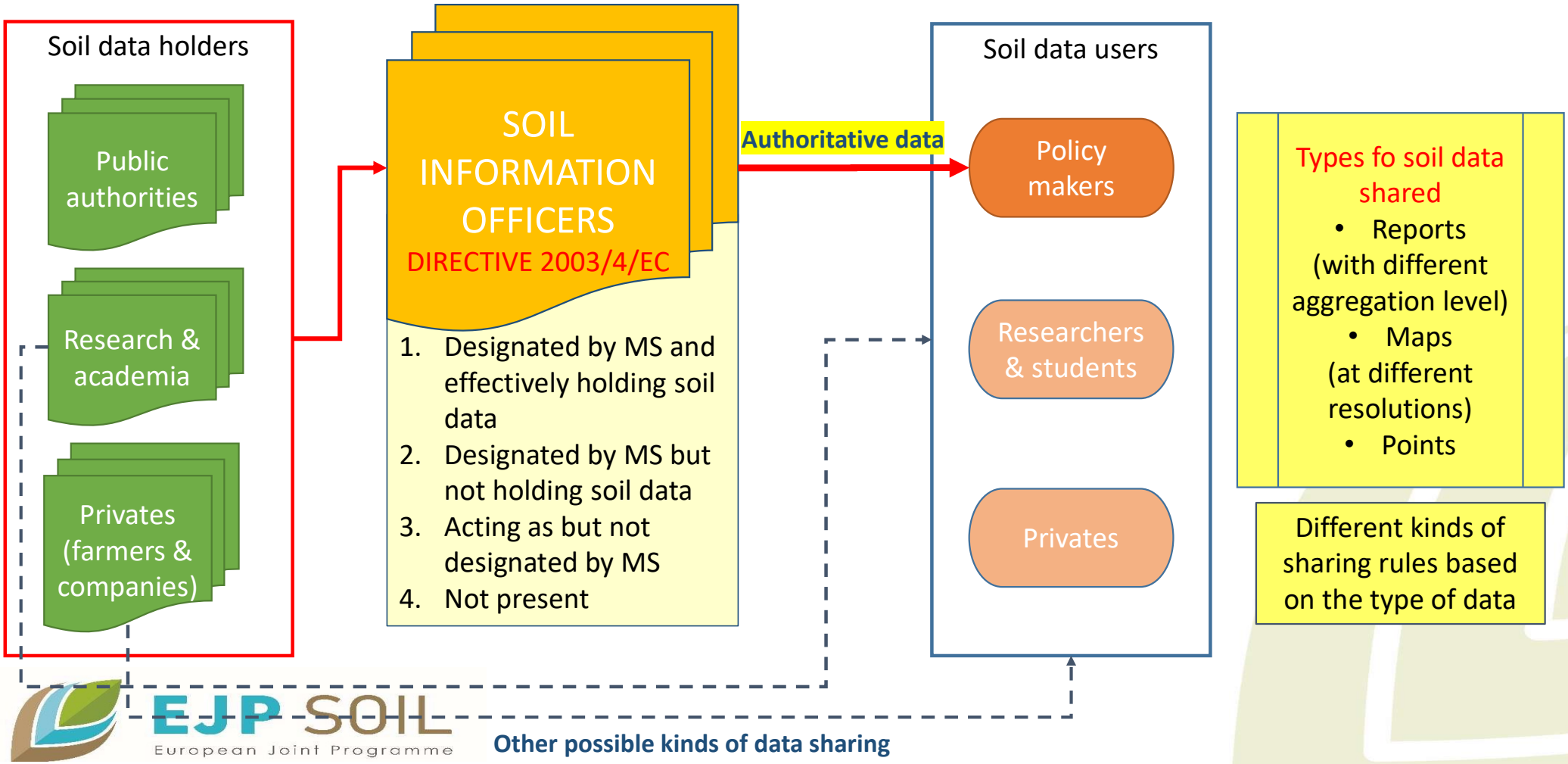
d) interoperability of spatial data sets and services, with reference to the INSPIRE Directive (2007/2/EC)

e) network services, with reference to the INSPIRE Directive (2007/2/EC)

f) conditions/limitations and incentives for soil data sharing, with reference to the INSPIRE Directive (2007/2/EC)

SOIL INFORMATION OFFICERS

from the D6.2 analysis on soil data ownership



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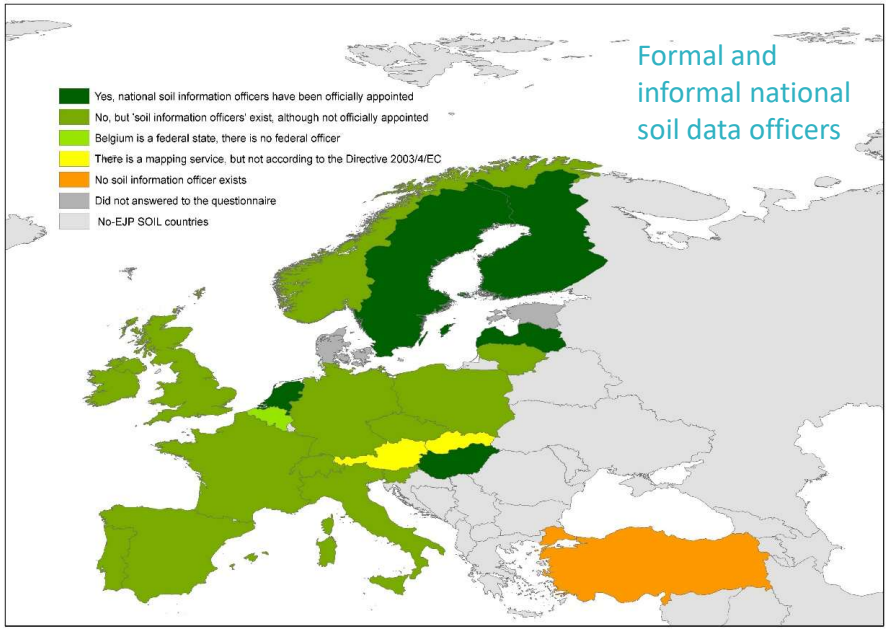
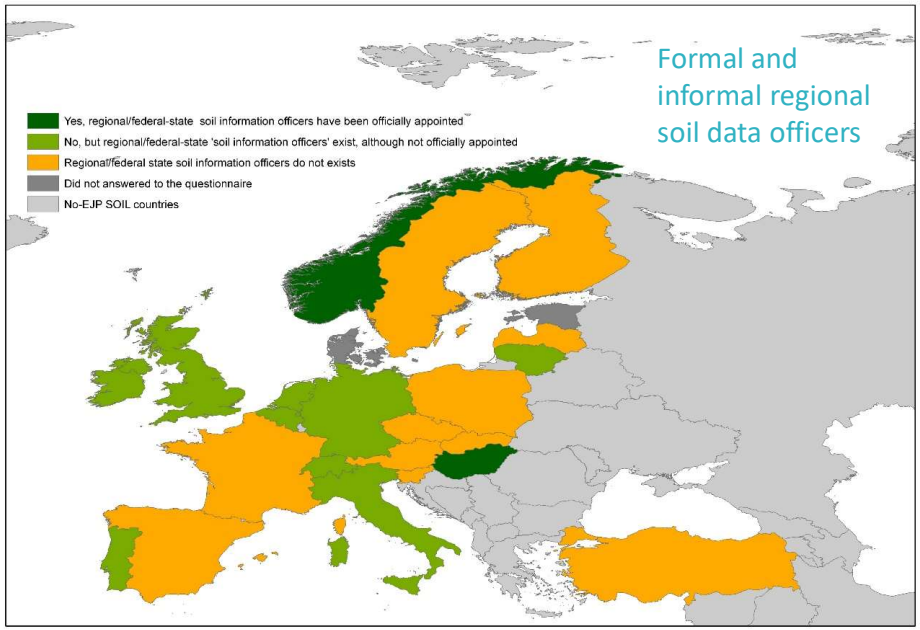
D6.2 - SOIL DATA information officers in EJP SOIL countries





Each country has its own peculiarities, and will be considered separately.

The EJP SOIL partner is the «officially» appointed soil information officer (national or regional): WR, NIBIO

The EJP SOIL partner is the «not officially» appointed soil information officer (national or regional): INRAE, CREA, THUNEN, LAMMC, Teagasc.

Information officers (offical or not) exist which are not the EJP SOIL partners, but a connection exists through Program Owners.

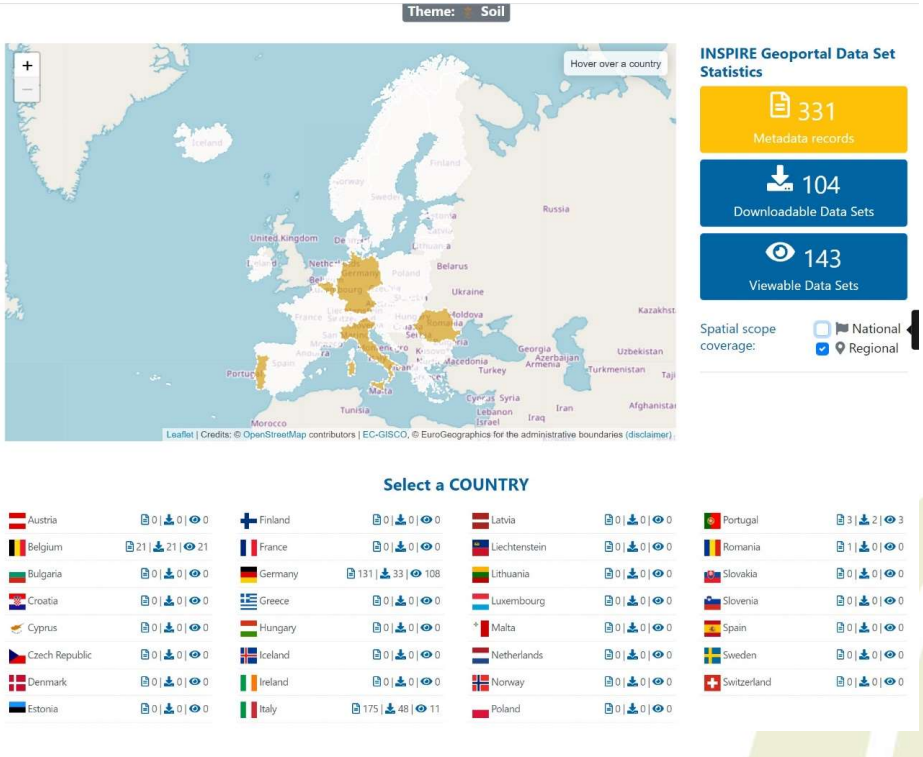
AWP3

National Hubs meeting to promote the organisation of NATIONAL SOIL MAPPING & SOIL MONITORING SERVICES

In order to produce «authoritative»maps and monitoring reports

WP1 WP8 WP6 WP9

The INSPIRE geoportal, theme: Soil



Very few soil data uploaded in the INSPIRE geoportal for the theme soil. The majority of EJP SOIL partners have their national/sub-national geoportals, but not all have. In any cases the information uploaded is not standardised/harmonised.

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Detailed review of this information in D6.2 report…

D6.2 and the Data Management Plan of EJP SOIL

SOIL DATA PRODUCED BEFORE AND OUTSIDE EJP SOIL	SOIL DATA PRODUCED INSIDE EJP SOIL
The **sharing rules** are **already defined by the data owners**. **In the D6.2** we have found the following **most frequent sharing rules for soil data**: 1) the **georeferenced point soil data** are recognised as 'personal data under European Directive' and need an authorization to be published online, which must be given by the respective landowners; 2) The **elaborated soil maps**, in whichever format (vector or raster), can be subject to Intellectual Property Rights, owned by the authors of those soil maps, or are published under specific licences, or are shared under the recognition of an economic payment. All these **sharing rules are (or should be) explicitly declared in the metadata repository**.	The EJP SOIL partners have agreed to follow the **FAIR principles** in the management of the **data resulting from** the research activities undertaken under the **EJP SOIL programme**, included the research activities undertaken under the internal projects of the EJP SOIL programme. Therefore, **for the WP6 final deliverables (D6.6 & D6.8)** the following is the technical/legal proposal: 1) They will consist of **elaborated soil maps** (grid format, resolution to be decided: 1km to 100m…) 2) **Country-driven approach** will be followed but with common procedures (WP6 cookbooks) 3) The **soil maps elaborated** will be **shared following FAIR principles** 4) **WP6 proposes CC-BY license**, that is open but with the recognition of intellectual property rights to those who have participated in the elaboration (explicitly declared in the metadata)

D6.2 Proposal of general agreement for soil data sharing among EJP SOIL partners, between EJP SOIL partners and other institutions at national level owning/holding soil data, and in relation to external EU public institutions.

1. The **point georeferenced soil data** eventually shared among EJP SOIL partners, and towards public institutions external to the EJP SOIL consortium, will **not** be **shared online**, **if there is not the declared consent from the data owner**, which may imply obligatorily for some countries/regions/owners of the EJP SOIL consortium, to get the consent from landowners;
2. The consent for the disclosure of point georeferenced soil data may not be needed only in case of **data on emissions into the environment**, which disclosure can be denied only if the disclosure adversely affects the international relations, the public security or national defense, the course of justice, the ability of any person to receive a fair trial or the ability of a public authority to conduct an enquiry of a criminal or disciplinary nature, and the intellectual property rights;
3. The **soil map data**, in whichever format (vector or raster), eventually shared among EJP SOIL partners, and towards public institutions external to the EJP SOIL consortium, **can be published online given** that in the metadata the sharing rules are declared, such as **intellectual property rights or specific licenses, as defined by the respective data owners**;
4. The **soil map data**, in whichever format (vector or raster), eventually shared among EJP SOIL partners, and towards public institutions external to the EJP SOIL consortium, **which are shared by their owners under the recognition of an economic payment**, could be published in metadata repositories explicitly declaring in the sharing rules the respective fees defined by the owners;
5. **A 'bottom-up' approach will be adopted** in the soil mapping activities promoted by the EJP SOIL involving the national/regional/federal-state soil data officers/services (official or not), **similarly as it is adopted by the pillar 4 of the Global Soil Partnership**;
6. The signing of **specific mutual agreements** for soil data sharing **between the EJP SOIL partners and external institutional owners of soil data** will be promoted inside each EJP SOIL country.

INTRODUCTION

WP6 "**Supporting harmonised soil information and reporting**"

But what does it mean, and why?

Request for soil indicators

MAPS&MONITORING

CURRENT SITUATION

ESDAC EU-WIDE SOIL MAPS & LUCAS SOIL MONITORING

May not be representative

NATIONAL SOIL MAPS & SOIL MONITORING

Not EU-harmonised

EJP SOIL WP6

EJP SOIL TECHNICAL SOLUTION

EU-WIDE HARMONISED NATIONAL SOIL MAPS & SOIL MONITORING. WITH LUCAS AS *DE FACTO* STANDARD

MEMBER STATES DECISION

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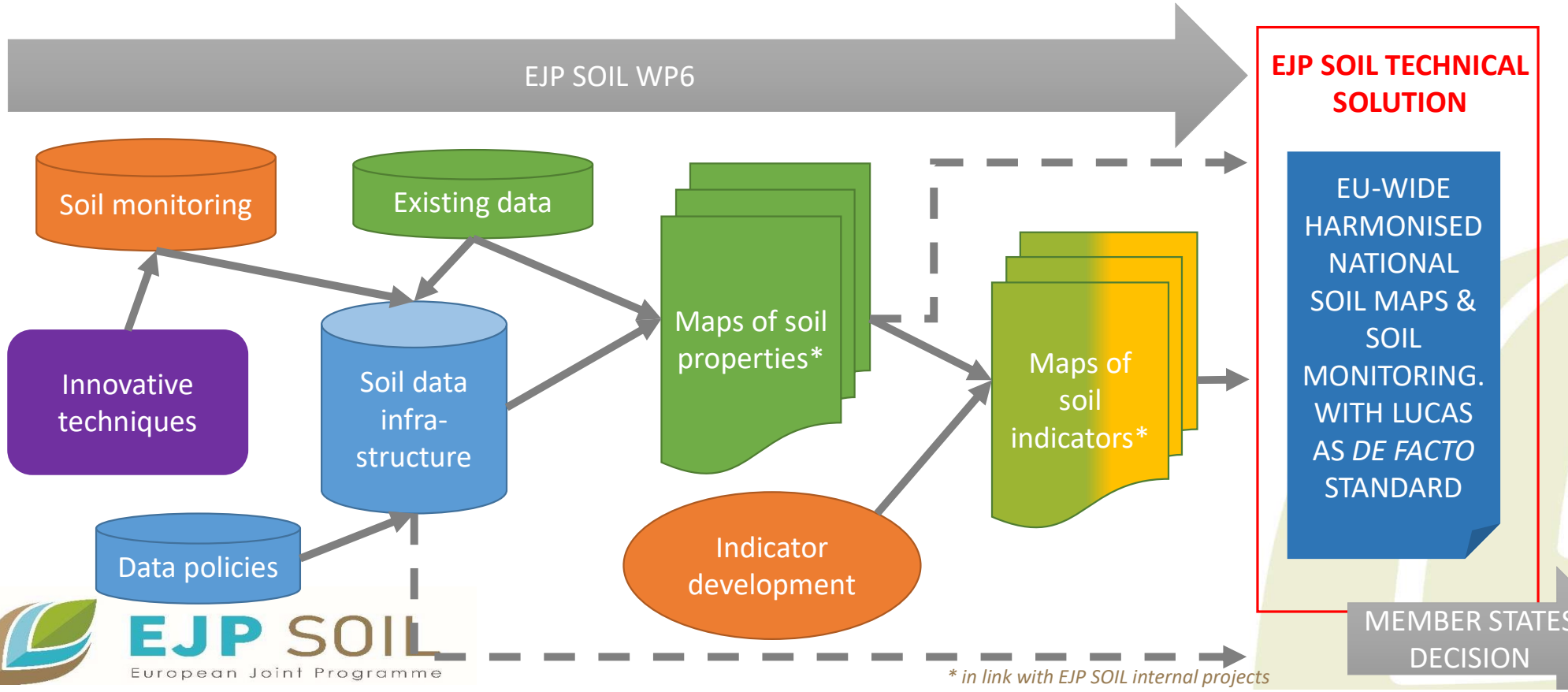
INTRODUCTION

WP6 "**Supporting harmonised soil information and reporting**"

But what does it mean, and why?



Benefits and drawbacks for a country driven approach

- National information (maps and monitoring) is authorative and therefore used in the application of national soil protection policies
- National information (maps and monitoring) better suits the national needs and specifics on soil, land uses and climate, and is often more detailed
- Diversity of national systems makes information exchange across borders and assessment of implications and evaluation of EU soil policy difficult
- EU LUCAS Soil monitoring started because data sharing was difficult 20 years ago, while there was a need for (harmonised) soil data in Europe
- We have entered the information age and exchange (*as is* and standardised) becomes technically possible
- This allows better information at EU level and better informed policies, transboundary research: efficient, coordinated action
- EJP SOIL is a technical project, decision to cooperate is for Member States at policy level

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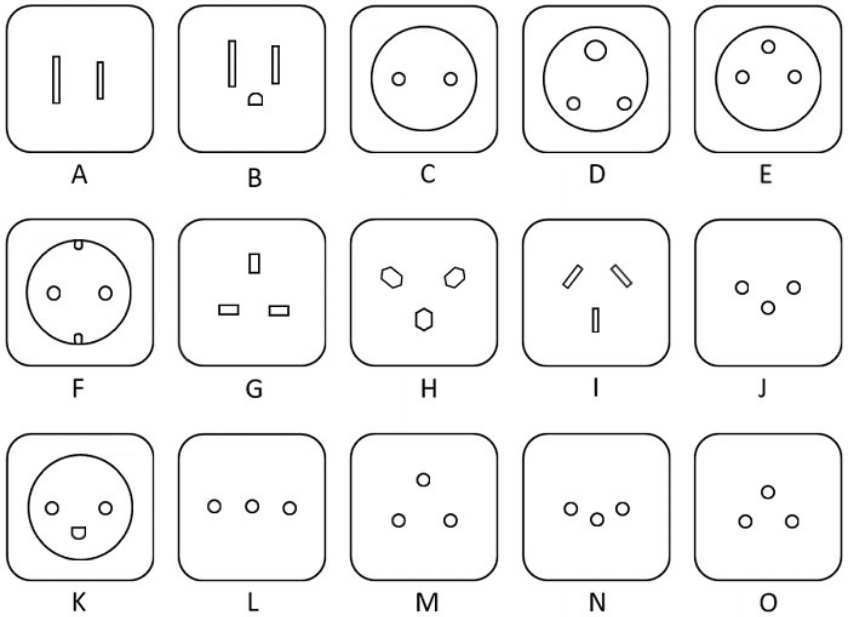
BUT STANDARDISED DATA IS STILL NOT HARMONISED DATA

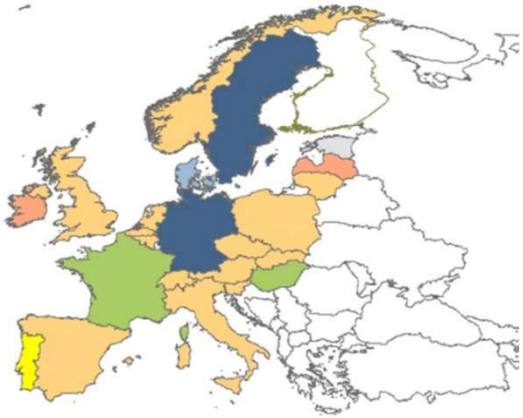
STANDARDISED DATA
explicit data = FAIR



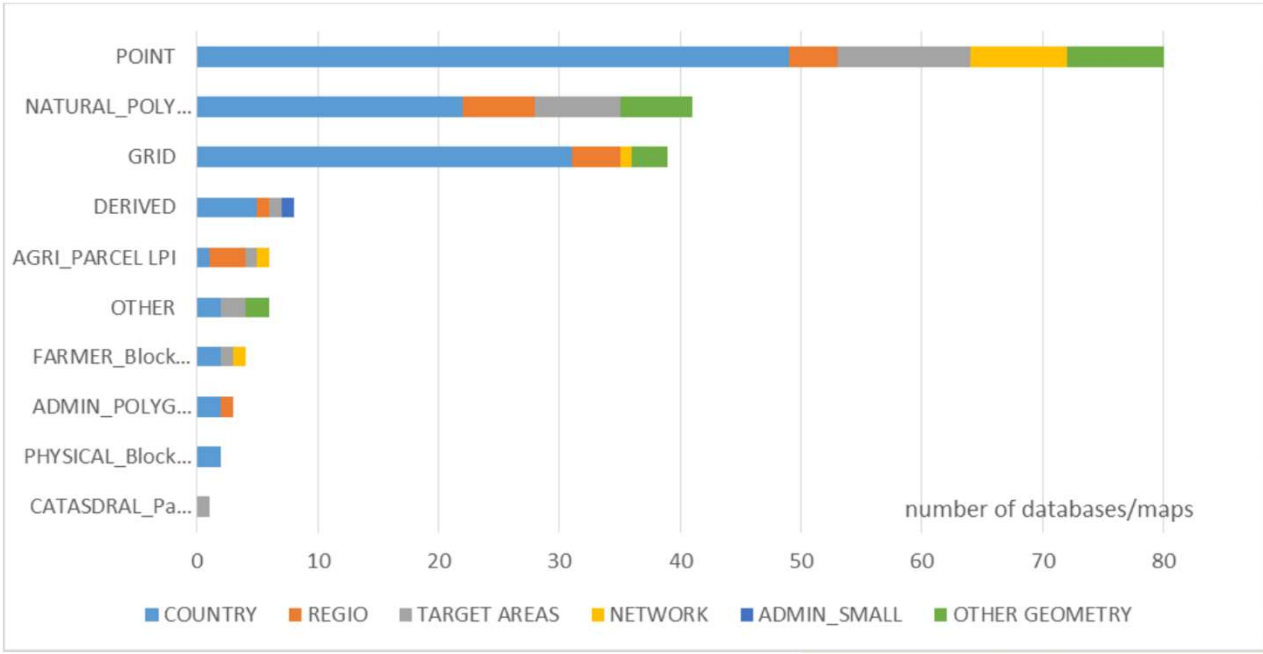
HARMONISED DATA
transformed data to a common standard

Standardisation is describing data in the same way (agreed definitions, structure, format)
Harmonisation is translating data to the same units, lab methods, definitions, etc.

D6.1 – available data (formats)



- Wide variety of formats and standards
- Not always soil database or SIS due to lack of skilled staff, resources time
- Lack of communication/coordination between organisations
- Lack of standards
- Mainly point, then polygon, then grid datasets
- Soil properties often available, threats/management less
- Often variation in methods and spatio-temporal resolution



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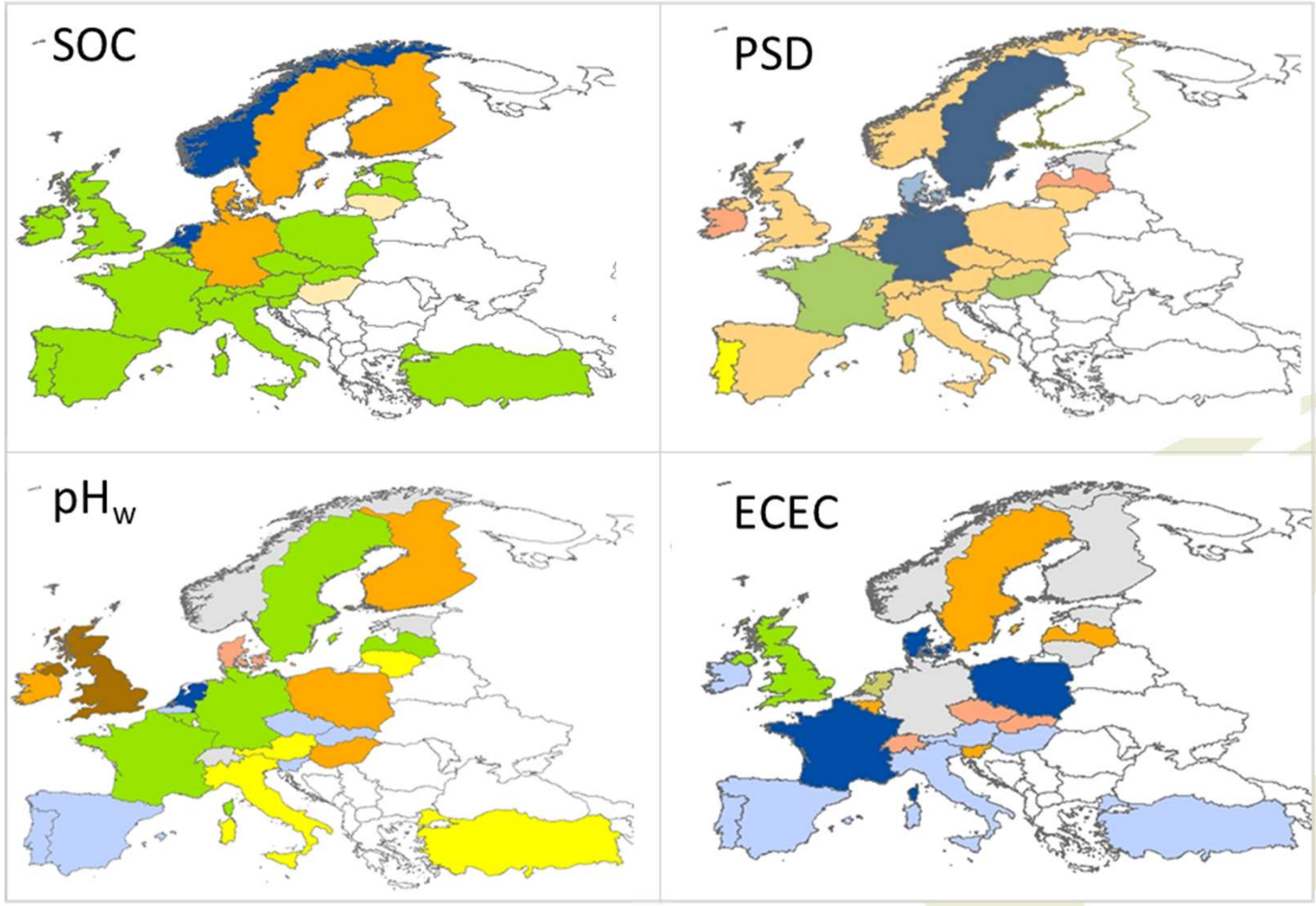
The diversity of methods or sets of methods used to measure a given soil property in each country.

The same color within a map indicates the same applied methodology.
SOC- soil organic carbon content;
PSD- particle size distribution;
pHw- pH value, in water;
ECEC- effective cation exchange capacity.



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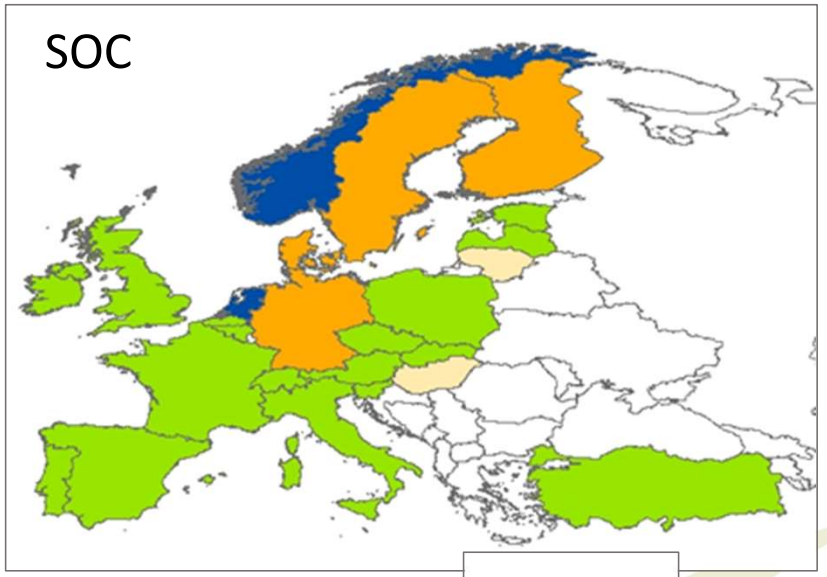
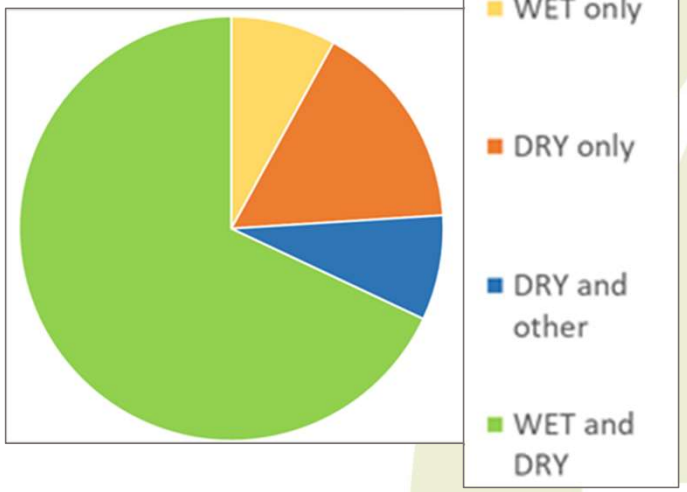
Diversity of methods - example

SP 1.3 Organic C	databases			applied method					
Country	Relevant for topic	data policy	(at least a part of it) open access or freely available for EJP SOIL	WET_WB	WET_TYURIN	WET_OTHER	DRY_W_LOSS	DRY_ADC	other
Austria	4	FPO	eBOD	yes	no	yes	no	yes	no
Belgium Flanders	2	F	DOV, SOCMB	yes	no	no	no	yes	no
Belgium Wallonia	3	P	-	yes	no	no	yes	yes	no
Czech Republic	3	PO	-	yes	no	yes	no	yes	no
Denmark	5	RP	DDSM	no	no	no	yes	yes	no
Estonia	3	FRO	KESE, SMI	no	yes	no	no	yes	no
Finland	2	P	-	no	no	no	no	yes	no
France	4	FP	RMQS, BDAT	no	no	yes	no	yes	no
Germany	1	F	BZE_LW	no	no	no	no	yes	no
Hungary	1	P	-	no	yes	no	no	no	no
Ireland	3	PO	-	yes	no	no	no	yes	no
Italy	5	FP	SISI, PPD, NS	yes	no	yes	no	yes	no
Latvia	7	RP	LLU	no	yes	no	no	yes	no
Lithuania	1	F	DR10LT	no	yes	no	no	no	no
Netherlands	3	O	-	no	no	no	no	yes	yes
Norway	3	FP	NSS	no	no	no	no	yes	yes
Poland	4	FRP	MChGO,MonFrm	no	yes	no	no	yes	no
Portugal	4	FP	INFSOL, PROSOL	yes	no	yes	no	yes	no
Slovakia	2	P	-	yes	yes	no	no	yes	no
Slovenia	1	F	SPSLO	yes	no	no	no	no	no
Spain	5	P	-	yes	no	no	no	yes	no
Sweden	5	FP	SOILCOM	no	no	no	yes	yes	no
Switzerland	1	F	SWISOIL	yes	no	no	no	yes	no
Turkey	1	P	-	yes	no	yes	no	yes	no
United Kingdom	7	FRP	NSI_Top, NSISC88, NSISC09,AFBI 5K, TEL_XRF	yes	no	no	yes	yes	no
%*				52	24	24	16	88	8





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T6.1 Decisions, based on the knowledge collected up to know

- Harmonise (lab) methods to LUCAS
- Federated infrastructure is most suitable
- Exchanging gridded data is more feasible due to data policies
- Exchanging existing soil data (point or maps) depends by country (specific sharing rues). EJP SOIL supports in the serving soil data as is: indicate options, tools, capacity building, solving current issues: codelists, draft schema, templates, etc.
- Data policy: for existing data, as is; for new data, CC-BY license
- Cooperation with EU Soil Observatory for soil data infrastructure
- EJP SOIL (WP6) is a technical project, not an authoritative decision body for countries

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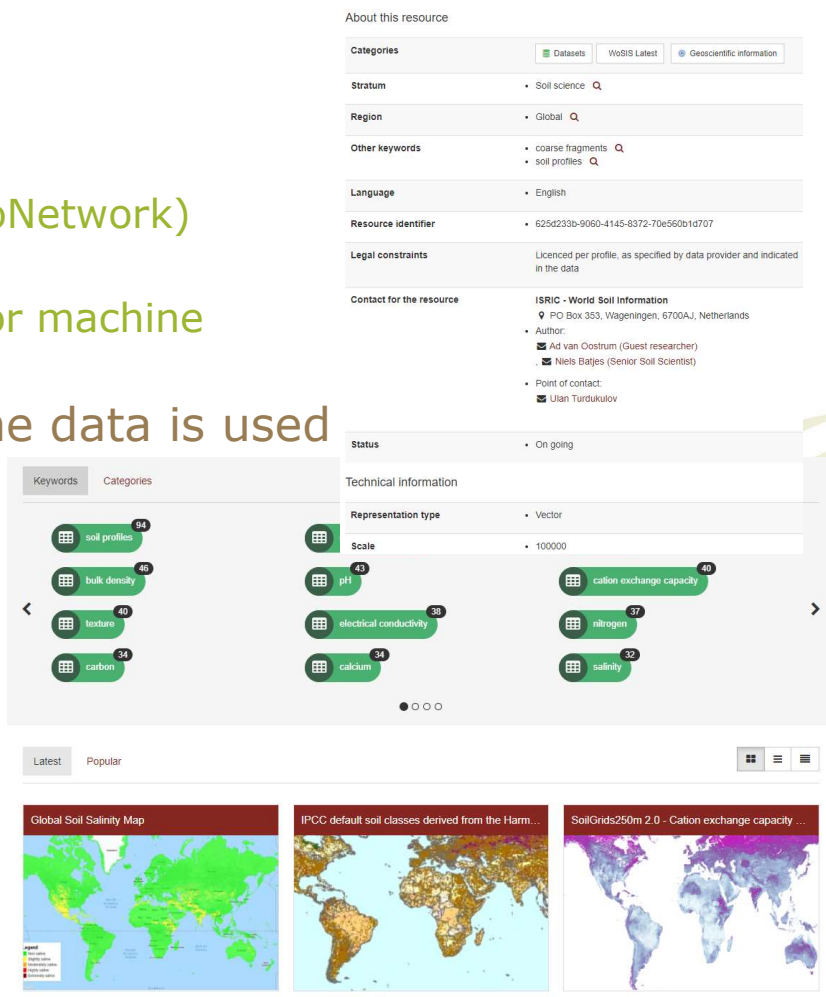
Serving soil data

- Options:
  - Serving data *as is* and metadata catalogue (eg. GeoNetwork)
  - Serving standardised data in a catalogue
  - Serving standardised data and put up webservice for machine approachable data endpoint
- The first requires standardisation every time the data is used
- The second saves time on standardisation but is not queryable
- The third saves time, is queryable and the most FAIR and usable
- !This is not harmonised data yet!



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Steps for serving soil data according to INSPIRE

- Steps needed:
  - Metadata creation and publication
  - Transform from a local data model to INSPIRE encoding
  - Publish data in a download service
- For all steps more manual or automated, more advanced or more basic tools are available
- EJP SOIL aims to provide an overview of options for partners

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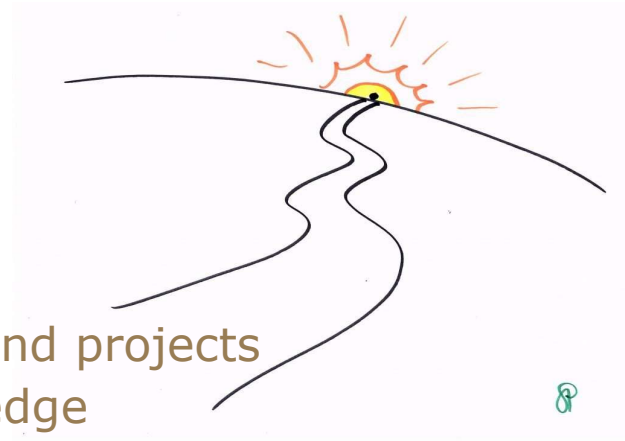
D6.1 Context and infrastructure



- Europe is rich in initiatives (ESP, NRC Soil, EJP, etc.) and projects
- Provide a rich set of experiences, network and knowledge
- Work on pieces of the puzzle: how to unite the puzzle?
- No *One size fits all* in data organisation: countries have different needs and existing systems
- An ontology and (soil) data standards are needed
- INSPIRE implementation for soil deadline autumn 2020. Some countries are ready, most are not or not accessible
- Best practice: good documentation of metadata, adherence to existing standards, making data findable, accessible, interoperable and reusable (FAIR)
- Point on the horizon: easy and FAIR exchange of standardized soil data in Europe according to data policy in an information infrastructure

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What WP6 needs to do in general tasks

- EJP SOIL aims to provide an overview of options towards data sharing for partners
- Solve roadblocks that now make data serving according to INSPIRE Metadata and Soil cumbersome:
  - Develop and publish international codelists (Dictionary)
  - Encourage/perform implemented INSPIRE ontology (grammar)
  - Solve grid issues and draft schema together with INSPIRE experts
- Set up capacity building
- Provide mapping between common schemas (eg INSPIRE and GloSIS)
- Discuss and cooperate with EU Soil Observatory to align efforts and needs

Stakeholder meeting 19-21 October
20 October 10.00-12.30 Data Integration

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What can you do as country/partner?

- Review the inventory of the current status in your country (use D6.1, D6.2, D6.3) on soil data storage, serving, data policies, sources at other institutes perhaps
- Develop national codelists according to a template we can provide and deposit at (national or INSPIRE or global) codelist registry
- Adopt international codelists when possible (to be published soon)
- Mapping your national schema to the INSPIRE schema (for point data) using software and training provided if needed
- Provide your national data online in a download service
- Meetings with national stakeholders and National Hubs

- Email us if you can help with the general tasks: fenny.vanegmond@wur.nl

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