



Food and Agriculture
Organization of the
United Nations



PILLAR 5

HARMONIZATION OF METHODS, MEASUREMENTS AND INDICATOR FOR THE SUSTAINABLE MANAGEMENT AND PROTECTION OF SOIL RESOURCES

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EUROPEAN SOIL
PARTNERSHIP

PILLAR 5 - BACKGROUND

- the information of Pillar 4 must first be gathered in a harmonized way
- the harmonization of terminology (soil classification and description), methods, indicators and evaluation methods and models *in order to develop regional policies for sustainable management of soil resources in Europe*
- The coordination of the European contributions to global efforts which focus on assessment and development of exchange standards for soil information, including the development of indicators and measures for monitoring the impact of relevant policy efforts to ensure European achievements, for example for the SDGs.



The main objective is to develop an over-arching mechanism for globally consistent and comparable harmonized soil information.

This mechanism includes the following working areas of harmonization:

- Soil profile observation and description
- Soil classification systems
- Soil mapping and soil property estimation
- Laboratory and field analytical data of soil
- Soil information exchange
- Soil data interpretation: agreed and representative indicator sets and evaluation functions to assess the impact and performance of the policies, projects and investments on soil.



LINK WITH PILLAR 4

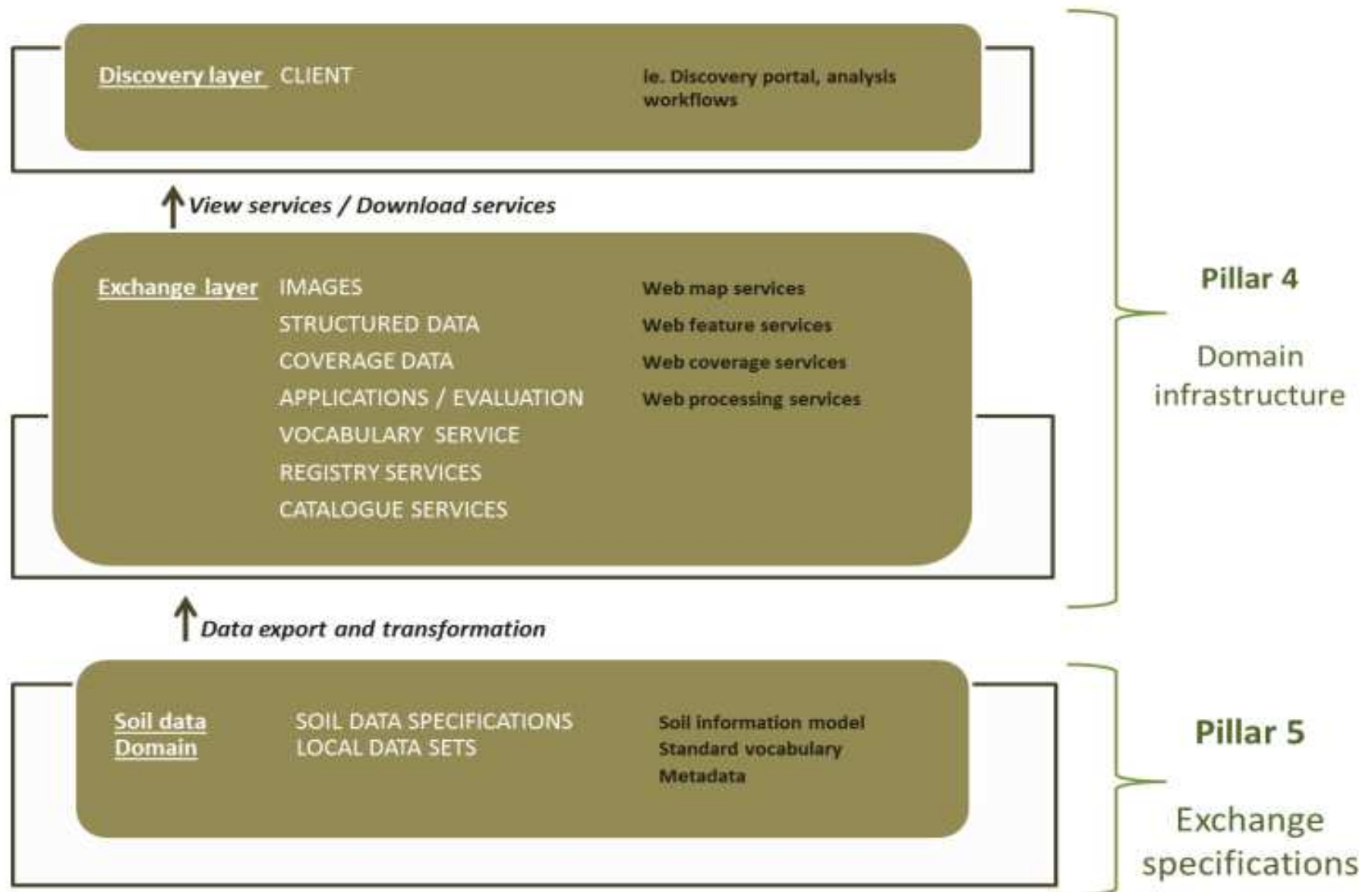


Figure 5: Overview of information model driven system architecture⁶

PILLAR 5 - GLOBAL RECOMMENDATIONS

- Develop an over-arching system for harmonized soil characterization
- Establish a mechanism for improving the comparability of soil data
- Develop a reference systems for soil profile description, soil classification and soil mapping
- Review existing practices for field sampling, sample preparation and measurement
- To enable the exchange of digital soil-related data, agreement is reached on a global soil information model, vocabulary service and meta-data standards.
- Review existing indicator systems and evaluation procedures and develop a harmonized approach based on common criteria, baselines and thresholds with the aim to monitor the state and response of soils



EUROPE-SPECIFIC ADDITIONAL PILLAR 5 ELEMENTS

- Europe has an intensive history of harmonization activities, mainly due to JRC, EEA + ETC + Europe-wide experts groups and networks.
- Harmonization is still a demanding area of action.
- The global P5IP is also valid for the European Soil Partnership, further region-specific modifications are needed. Previous activities in Europe can be used as a basis (e.g. EEA indicator system).
- Pillar 5 provides the opportunity to check thoroughly the importance of international activities related to harmonization, and to connect to national activities:
 - INSPIRE vocabulary services for soil data
 - Developments towards a Universal Soil Classifications
 - Europe-wide network of soil laboratories (e.g. connected to European Union Reference Laboratories EURL)



IMPLEMENTATION STRUCTURE AND PARTICIPATION

- Within this framework, the network of international soil information institutions (INSII), as described in Pillar 4, requires some expansion and additional working groups:

- ☐ ad-hoc working group for harmonization of soil mapping (temporary assignment)

- ☐ Working Group for the harmonization of Soil Analysis (long-term)

- ☐ Working Group for the review and expansion of Soil Indicators



Highlights for discussion:

Policy processes require indicators derived from national soil data (e.g. SDG). Applying harmonized indicators, using agreed and harmonized evaluation methods are the fundamental basis. This is also needed to build a European soil monitoring system based on national systems.



	Recommendation / actions	Description of outputs	Partners	Timeline	Budget and Funding
1	Revision of the European soil mapping guideline (see also Pillar 4, action 5)	<ul style="list-style-type: none"> – Revise the ESNB Manual of Procedures – Integrate options to use remote sensing and digital soil mapping (e.g. eSOTER project) – Refine the nested system (see GS Soil project) – Develop a European soil map legend (using the soil regions concept) based on WRB 	ESP-INSII ad-hoc WG soil mapping	end 2018	In-kind
2	Soil profile description standard	<ul style="list-style-type: none"> – will be covered by the global Pillar 5 Implementation Plan (P5IP) 	global INSII		In-kind



	Recommendation / actions	Description of outputs	Partners	Timeline	Budget and Funding
3	Soil classification : WRB	<ul style="list-style-type: none"> – For status as of 2012: see GS Soil – Improve national correlation methods – Document challenges and solutions 	ESP-INSII	2017/2020	In-kind
4	Reference laboratories	<ul style="list-style-type: none"> – Establish Europe-wide network of soil laboratories building on existing initiatives (e.g. European Union Reference Laboratories EURL, EU Biosoil project) – Selection and establishing a leading laboratory, which implements the web site, produces and distributes reference material, build a data base for calibration and QA, ring tests, evaluations and reporting – see also global P5IP 	ESP-INSII/NRC Soil, WG Soil Analysis	2018-2020	Lead laboratory: € 350,000



	Recommendation / actions	Description of outputs	Partners	Timeline	Budget and Funding
5	Best practice soil analysis	<ul style="list-style-type: none"> – Interact with global level INSII P5 for developing best practice recommendations and procedures for soil sampling, storage, analysis – Liaise with ISO TC 190 and CEN 	ESP-INSII/NRC Soil, WG Soil Analysis, lead laboratory	2018/2019	In-kind
6	Soil Information model	<ul style="list-style-type: none"> – Analyse the implementation status for interoperable soil data according to INSPIRE, and the degree of harmonization – Develop concept to address coordination needs – ESP INSII members to test the model, and to define and implement use cases – Liaising with networks according global P5IP: GODAN Soil Data WG 	ESDAC and ETC ULS ESP INSII	2018	In-kind



	Recommendation / actions	Description of outputs	Partners	Timeline	Budget and Funding
7	Indicators	<ul style="list-style-type: none"> – Develop a soil indicator concept about the state and response of soils under the effect of policies, management and climate change (incl. discussion and feedback with EUR-INSII) – Build on EEA and FP6-ENVASSO indicators – Identify research needs to propose to Pillar 3 – Coordinate with global level approach (INSII) 	ETC ULS and EIONET NRC Soil	2017/2018	In-kind
8	Evaluation methods - review	<ul style="list-style-type: none"> – Review of existing evaluation methods (EU-HYDI, ENVASSO, RAMSOIL, other projects): gaps, challenges, solutions – Harmonization needs and cost estimation (link Pillar 3 research) 	Contractor ESP-INSII (WG Methods)	2018	€ 50,000 (if possible in-kind)
9	Evaluation methods - WIKI	<ul style="list-style-type: none"> – Content-management system: formula collection, documentation, sources 	Contractor	2018	€ 50,000 (if possible in-kind)



PILLAR 5 DISCUSSION – NEXT STEPS

Comment/remarks

Role of the national focal points

- Involvement
- Identification of national institutions that can contribute

Budget and Funding Possibilities

Working group on Pillar 5

- Who is willing (or knows someone) to contribute actively to the WG pillar 5 (set a timeline)

