



Food and Agriculture
Organization of the
United Nations



PILLAR 1

PROMOTE SUSTAINABLE MANAGEMENT OF SOIL
RESOURCES FOR SOIL PROTECTION, CONSERVATION AND
SUSTAINABLE PRODUCTIVITY

Violette Geissen and Josiane Masson



EUROPEAN SOIL
PARTNERSHIP

PILLAR 1 BACKGROUND

Link to the GSP Pillar1

Increasing degree and extent of soil degradation

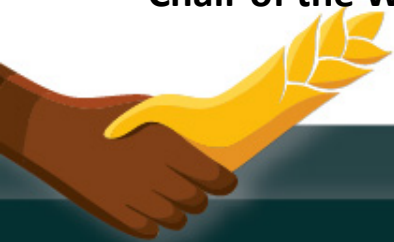
Many case studies with SSM present, but not linked and spattered

Urgent action is needed

- **Main objective of the Pillar 1**

- 1) Increasing sustainable soil management implementation
- 2) Costs and benefits from sustainable soil management practices
- 3) Sustainable soil management and soil fertility
- 4) Challenges and priorities for sustainable soil management implementation
- 5) Sustainable soil management coordination and monitoring

- **Chair of the Working Group for Pillar 1: Violette Geissen (Wageningen University, NL)**



Recommendations for the Pillar 1

- 1) Identification and implementation of SSM for all land uses at regional and national levels
Sustainable agricultural production should be supported by **balanced soil fertility, weed control and pest management.**
- 2) Assessment of barriers preventing the implementation/adoption of SSM and propose policy and technical solutions
- 3) Development/implementation of monitoring system to measure the progress of SSM implementation and effects on soil quality
- 4) Facilitation of capacity building by GSP

Links to the other Pillars

Implementation: strongly linked with Pillars 2 and 5

Generation of technical infos: strongly relies on Pillars 3 and 4



PILLAR 1 SPECIFICITY OF THE EUROPEAN CONTEXT

State of European soils

According to the EU State of soil report (2012) and SWSR (2015), the main problems in Europe are

- soil sealing
- salinization
- contamination.

Additional threats:

- organic carbon changes, nutrient imbalance, soil erosion by wind or water, loss of soil biodiversity, desertification, landslides.

Policy context

- EU Soil policy, modernization and simplification of the Common Agricultural Policy (CAP)
- Voluntary Guidelines for Sustainable Soil Management (VGSSM)
- Existing networks (at all levels) —to be enhanced.



PILLAR 1 OUTPUTS

Recommendation 1

Appropriate sustainable soil management practices (SSM) and systems should be identified for all land uses at regional and national levels and be implemented at appropriate scales.

Action

1. Identification of case studies with successfully implemented SSM
2. Identification of existing networks of stakeholders and existing/past projects related to SSM
 - Possible partners: Project partners from FP7, Horizon 2020, Life and national projects, farmer associations, NGOs and relevant initiatives (e.g. organic farming, agro-ecology, conservation agriculture, permaculture etc.)
 - Timeline: from Sept. 2017
 - Budget and funding: to be discussed

Outcome 1

Integrated map on European SSM case studies related to land use, soil threats and pedoclimatic zones

Outcome 2

Establishment of a SSM network(s) with stakeholders of the case studies and scientists, policy makers



PILLAR 1 CONCEPT

Recommendation 1

Inventory of all EC funded projects on SSM (FP7, Horizon2020, Live) by WU/EC DG ENV/JRC

Identification of farmers associations, NGOs and other relevant initiatives by JRC/DG ENV

Inventory of all national projects identified by **national focal points**

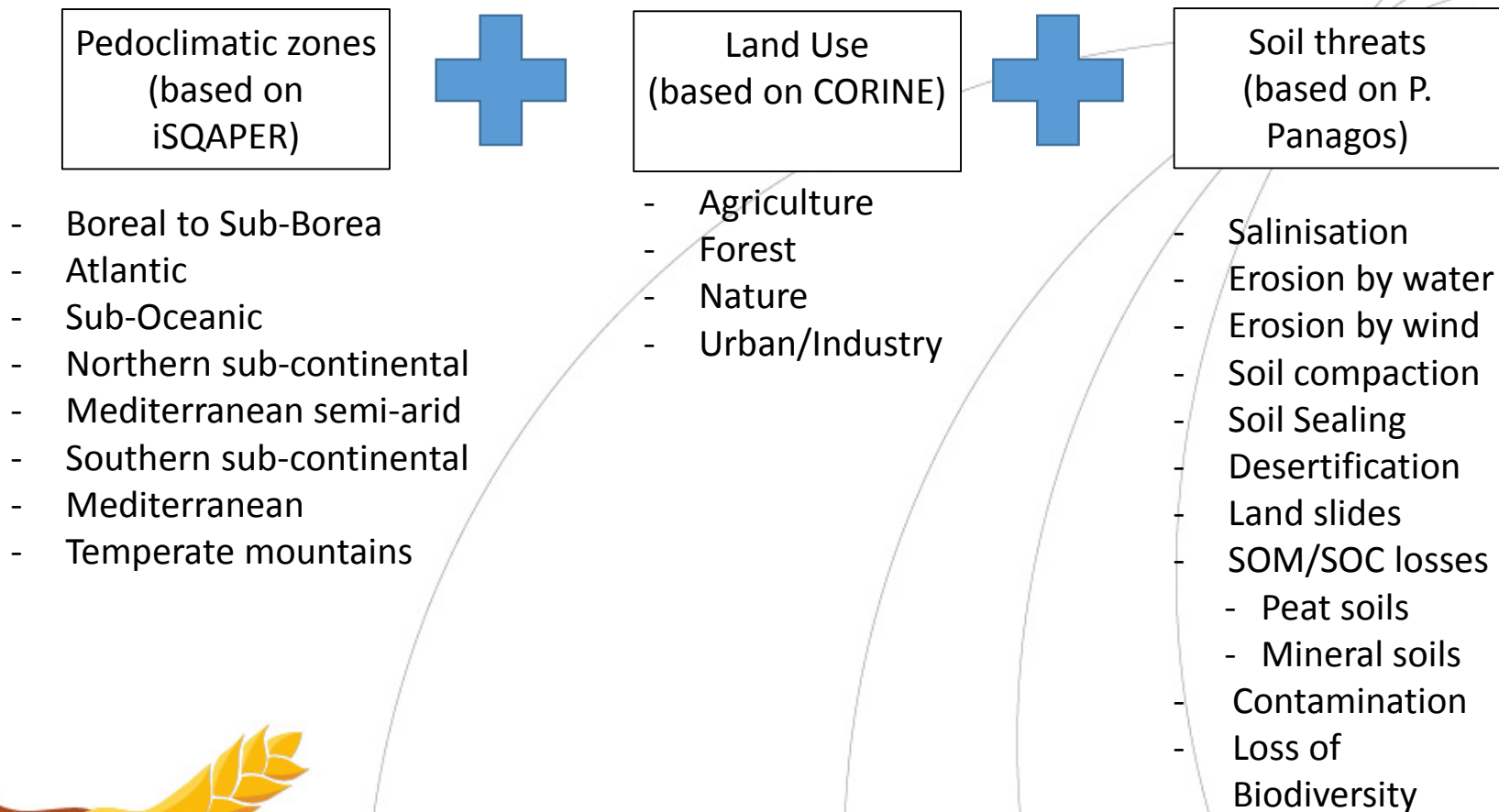
- Localization of case studies in combined maps of land use, pedoclimatic zone and soil threat
- Localization of stakeholder networks
- Activation of interaction between the existing networks



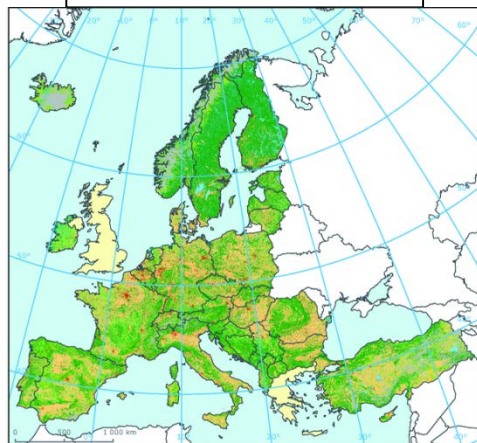
PILLAR 1 CONCEPT

Recommendation 1

Compiling and mapping of all case studies + stakeholders networks from EU-funded and national projects with respect to SSM in different pedoclimatic zones, land use and under specific soil threats



Corine LandUse



Corine land-cover types — 2006



Add case studies and networks from EU and national projects

Recare

SoilCare

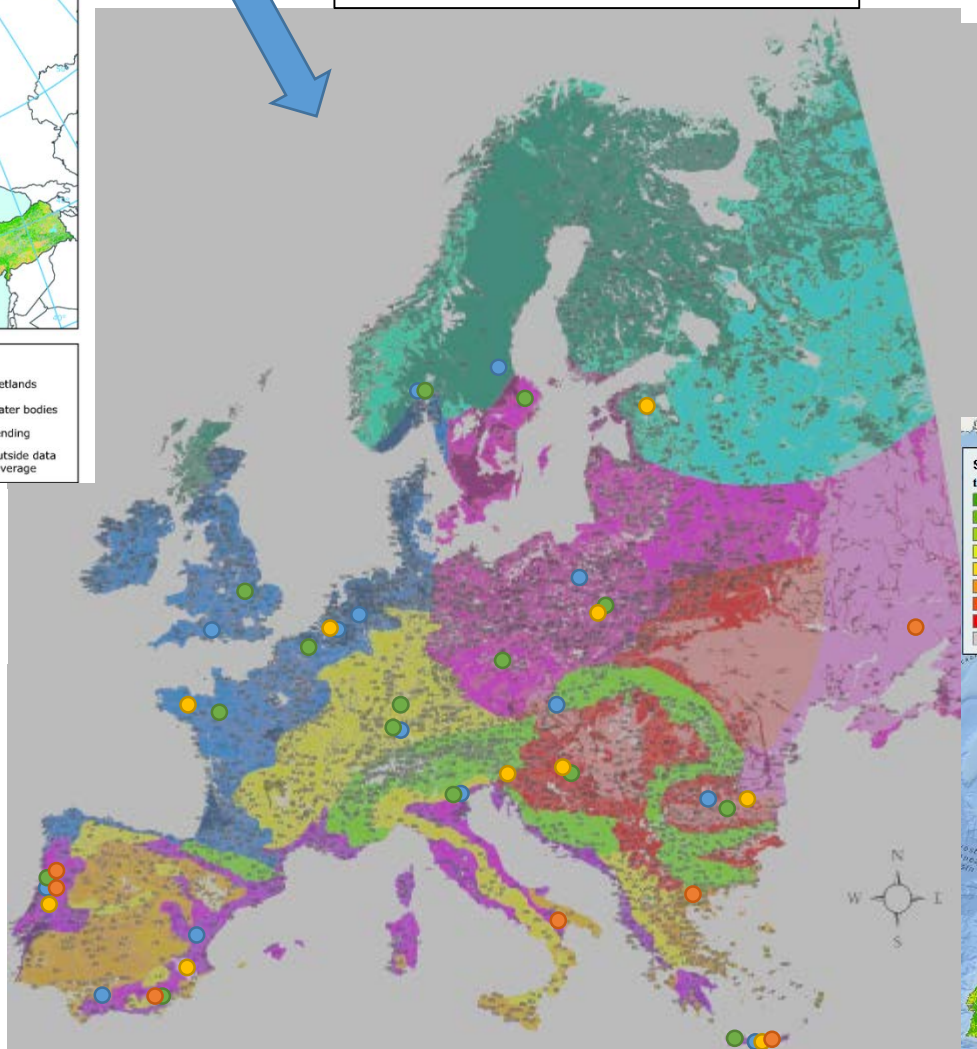
iSQAPER

Desire

Click project name to enlarge matching case studies temporarily

PILLAR 1 CONCEPT

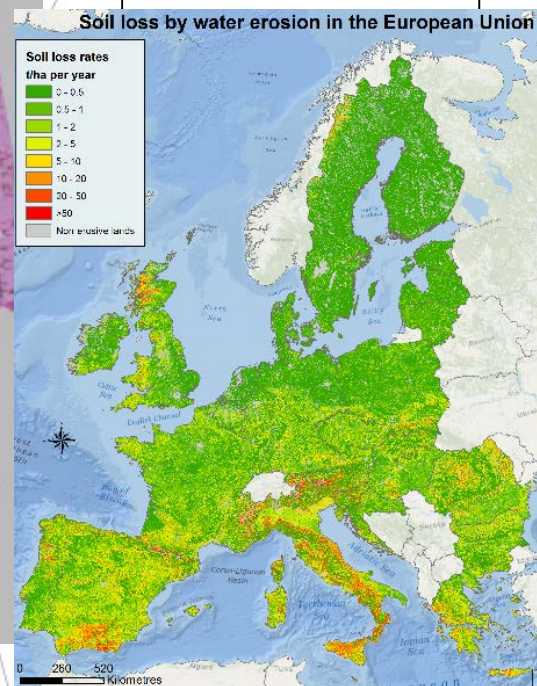
iSQAPER Pedoclimatic zones



Recommendation 1

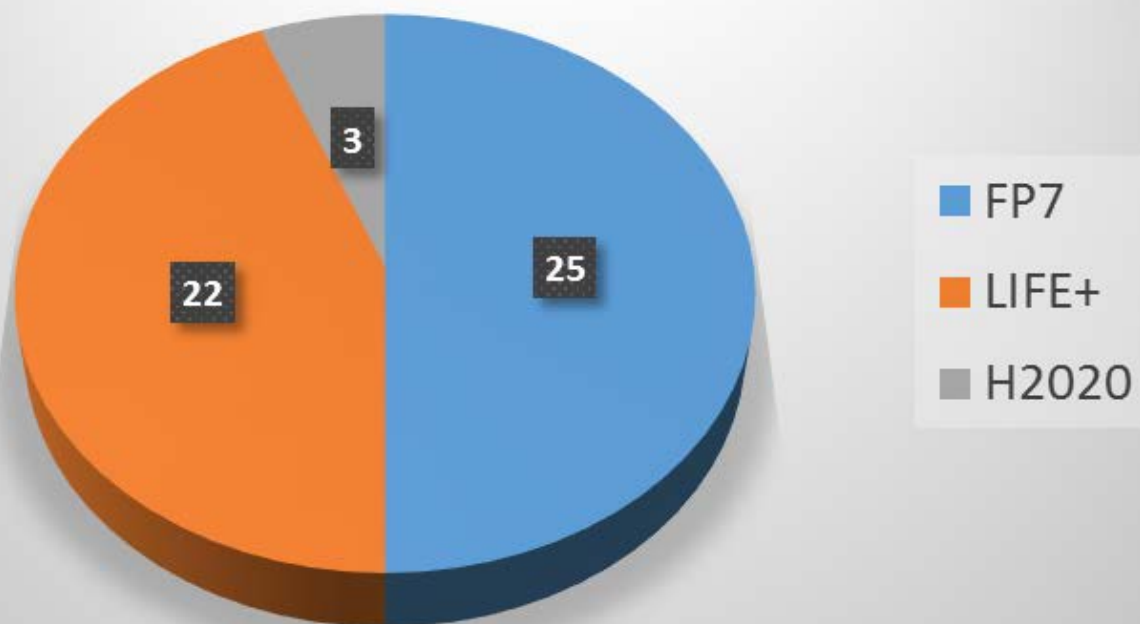
Combine maps

Soil threat



EUROPEAN SOIL PARTNERSHIP

Projects



Links to google sheets:

International projects

<https://docs.google.com/spreadsheets/d/1jyShfBYZ2evWjOKol-sXJcj2YtyU7IjMfOIMI0yLGPK/edit?usp=sharing>

National projects

https://docs.google.com/spreadsheets/d/1M0z3etunRlsPYksp_QXlIdH9p20XTZUCRU4fcxSTzUU/edit?usp=sharing



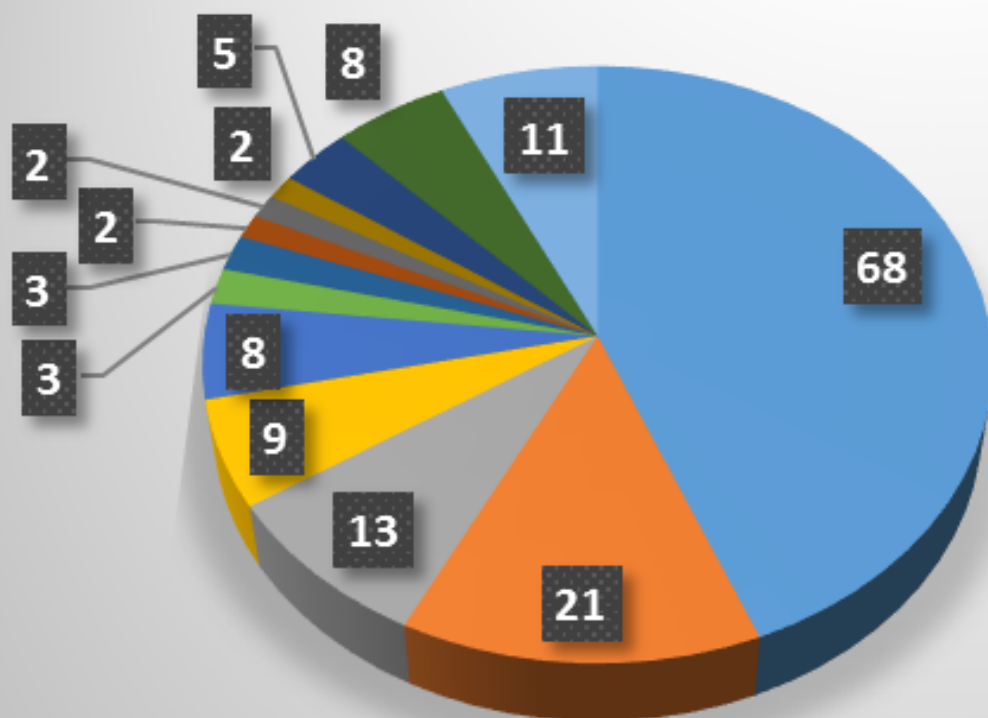
FP7(63)		H2020(21)		LIFE+(22)	
Project Acronym	Study Sites	Project Acronym	Study Sites	Project Acronym	Study Sites
ISOIL	9	LANDMARK		FP&	1
DIGISOIL	3	iSQAPER	14	LIFE SOIL-Montana	
E_SOTER		DiverIMPACTS	7	LIFE-Kinnekulle	1
SOILSERVICE				LIFE-Life to Koli	1
SoilCAM	2			LIFE+ AGRICARBON	3
ISOSOIL	1			LIFE- So.S	
MODELPROBE	4			LIFE - SOILPRO	2
UMBRELLA	2			LIFE - DEMETER	
UPSOIL	4			LIFE - Crops for better soils	
SORBENT				LIFE - LIFE REGEN FARMING	2
SOILTREC				LIFE - HELPSOIL	1
ECOFINDERS	5			LIFE - LIFEWASTE	1
MINOTAURUS	6			LIFE - PROSODOL	1
INBIOSOIL				LIFE - BIOREM	1
NUTRI-STAT				LIFE - ReSoil	1
SMARTSOIL	6			LIFE - New Life	1
CATCH-C				LIFE - Soil 4 Wine	1
PLANTOID				LIFE - Life Saving	1
BIOECOSIM				LIFE - AGROSTAT	1
MISAFE				LIFE - BIOREWIT	1
RE CARE	18			LIFE - The Green Deserts	1
SOIMON				LIFE - Save our Soil for Life	1
SORBENT-DEMO	2				
POLLINS					
INTELLIREMED	1				



People willing to collaborate in setting up a database about national projects dealing with sustainable soil management

Name	email	Country
Dr. Taru Sandén	taru.sanden@ages.at	Austria
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Isabel Lopes	ilopes@ua.pt	Portugal
Eduardo Costantini	edoardo.costantini@crea.gov.it	Italy

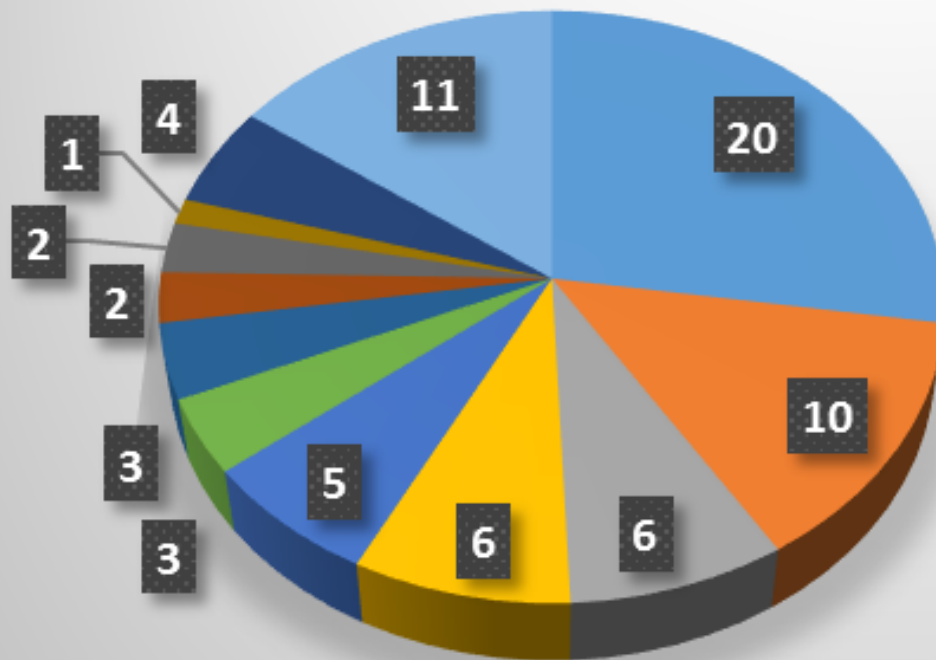
threats studied in projects



- Soil contamination/remediation
- SOC losses
- Soil Biodiversity
- Water pollution
- Soil degradation
- Soil Sealing
- Water erosion
- Desertification
- Landslides
- Overgrazing
- Other
- Contamination/Biodiversity
- Multiple (other)



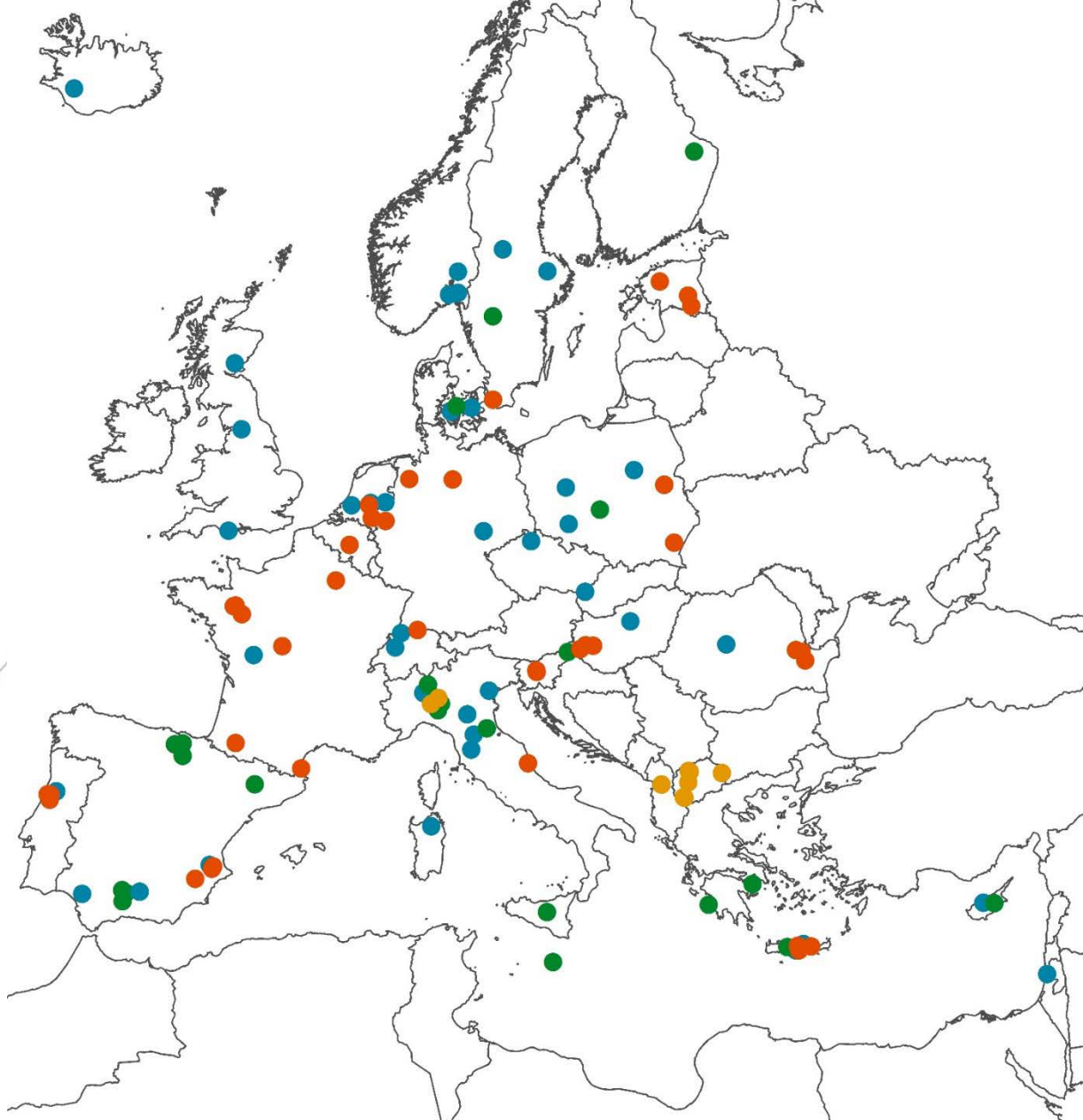
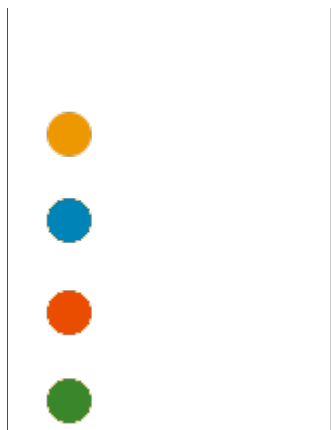
study sites per threat



- Soil contamination/remediation
- SOC losses
- Soil Biodiversity
- Water pollution
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- Soil Sealing
- Water erosion
- Desertification
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- Overgrazing
- Other
- Contamination/Biodiversity
- Multiple (other)

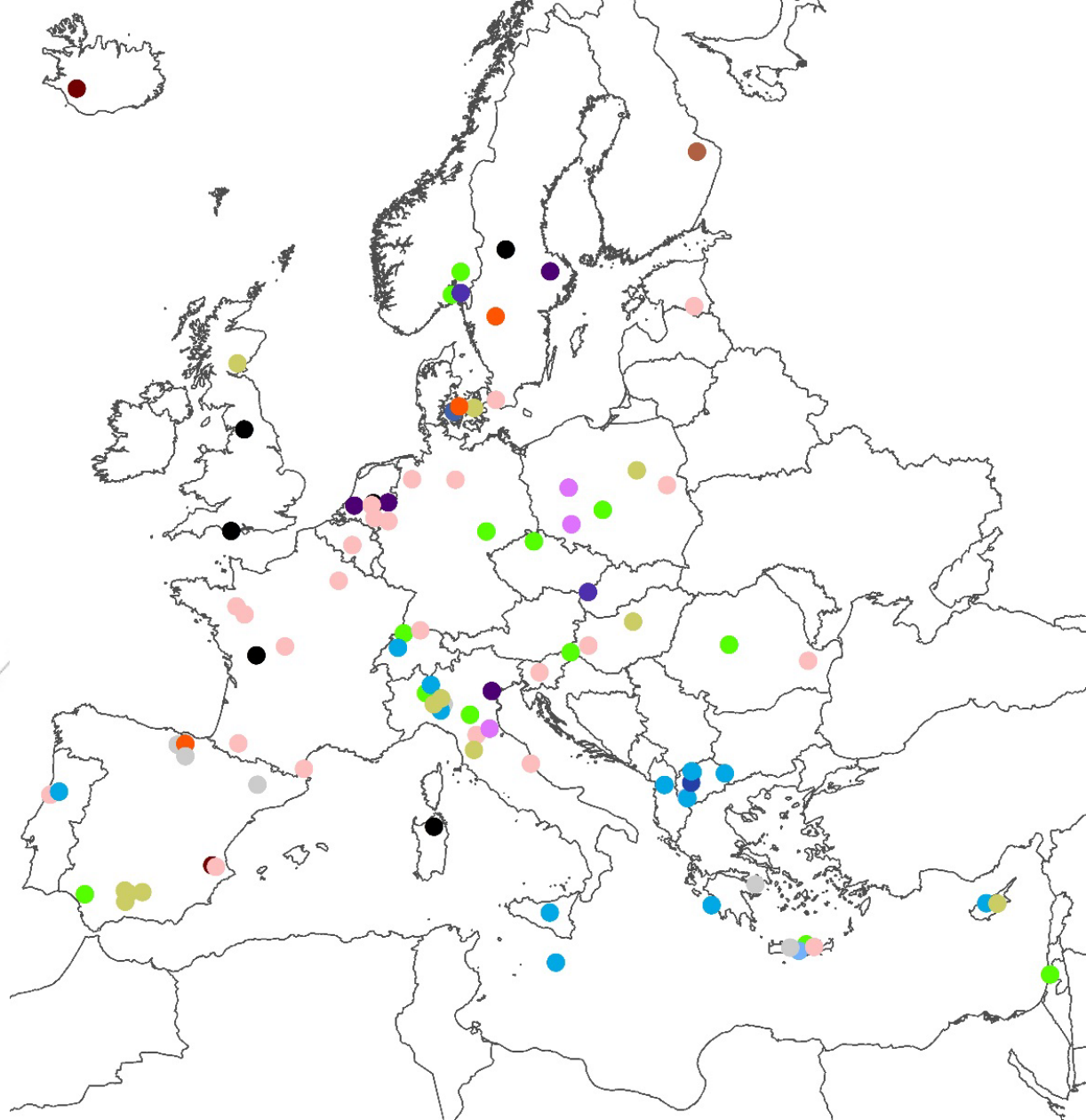
For 33 study sites is the soil threat unknown

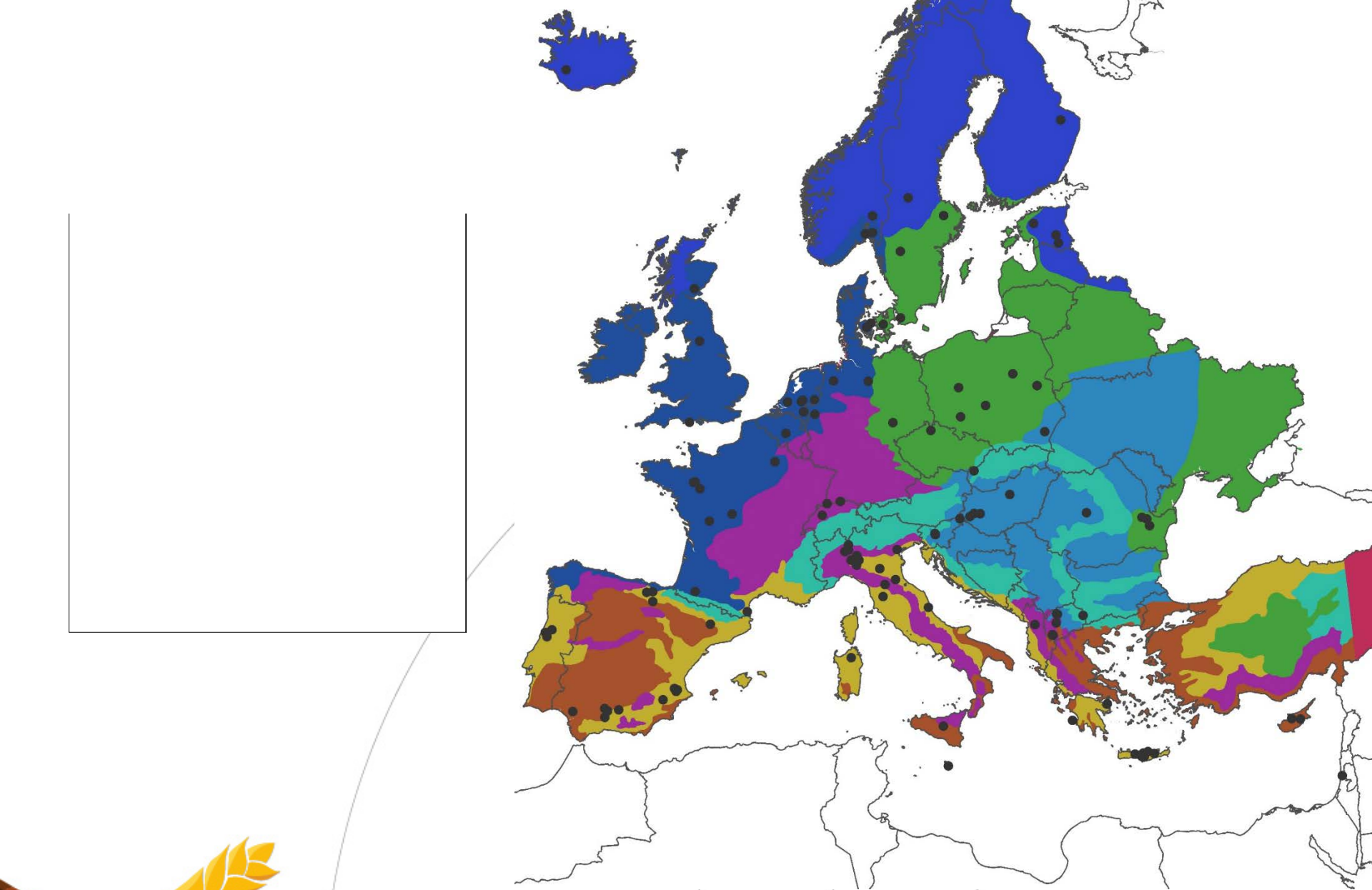




Soil threat

- Contamination/remediation
- OM decline
- Deforestation
- Desertification
- Water erosion
- Landslides
- Overgrazing
- Salinization
- Compaction
- Sealing
- Biodiversity decline
- Soil degradation
- Wrong management
- Other





CORINE Land Cover



Outlook 2018

- Finalizing of the data collection of the international projects
- Data collection of the national projects with the input of national focal points/ participants
- Compiling these data and listing stakeholder networks
- Data analysis and short report
- Finding budget to start activities 2 and 3



PILLAR 1 OUTPUTS

Recommendation 2

Sustainable agricultural production should be supported by balanced soil fertility, weed control and pest management.

Action

1. Organisation of a conference bringing the existing stakeholders together
2. Organize farm visits with the SSM network
 - Possible partners: WU, JRC, EC, existing networks, farmers associations, NGOsand national focal points
 - Timeline: autumn 2018
 - Budget and funding: to be discussed

Outcome



PILLAR 1 CONCEPT

Recommendation 3

Interviews with representatives of the stakeholder networks identified from the different regions organized by national institutions:

- Perception of stakeholders on SSM's
- Feed-back on the VGSSM of the GSP
- Reasons for implementation and extension of SSM's to other regions
- Reasons for stopping of implementation and not extension of SSM.....
- Conclusions for requirements for voluntary guidelines to ensure the implementation of successful SSM in all regions with all land use types and soil threats.



PILLAR 1 OUTPUTS

Recommendation 4

A monitoring system should be developed to measure the impact and the progress of implementation of sustainable soil management practices and systems.

Action

1. State of the art and requirements for soil monitoring in European agriculture and forestry
2. Monitor the effects of soil management change (*started in Diverfarming*)
3. Knowledge of existing established systems and gaps to be filled

- Possible partners: ESP INSII and EIONET-NRC Soil, WU (iSQAPER), EC (LUCAS database and ESTAT farm surveys), national soil inventories...
- Timeline: 2019+
- Budget and funding: to be discussed

Outcomes

Report on State of the art and requirements for soil monitoring in European agriculture and forestry



PILLAR 1 CONCEPT

Recommendation 5

Testing the long term effects of the SSMs in the case studies by the soil app developed in the iSQAPER project.

Explore the feasibility of monitoring SSMs e.g. by extending existing monitoring system (e.g. LUCAS) to the identified case study sites (JRC) or through other approach

Activity of the iSQAPER team, JRC and national extension services/ stakeholder networks in cooperation with pillar 4.



PILLAR 1 OUTPUTS

Recommendation 6

The GSP should facilitate the development of a capacity building strategy.

Action

1. Reactivate summer school
2. Setup voluntary certification on SSM
3. Launch training program on SSM
4. Implement pilot projects
 - Possible partners: JRC and partners
 - Timeline: to be discussed
 - Budget and funding: to be discussed

Outcomes

To be discussed....



PILLAR 1 OUTPUTS

Recommendation 7

Develop mechanisms to support indicators and targets for the soil-related SDG implementation in Europe.

Action

Coordinated approach on indicators and targets for the follow-up and review for the implementation of soil-related SDGs in Europe

- Possible partners: EC (JRC, DG ENV) and EEA, IASS, WU and others
- Timeline: 2017+
- Budget and funding: to be discussed

Outcomes

To be discussed....



PILLAR 1 OUTPUTS

Recommendation 8

Activities addressing soil contamination.

Action

1. Inventory of EU contaminated sites including sites of diffuse pollution of organic pollutants

2. Revision of the indicator "Progress in the Management of Contaminated Sites in Europe"

- Possible partners: JRC, EEA and EIONET (NRC Soil and ad-hoc WG on soil contamination), WU, SMEs
- Timeline: 2017+
- Budget and funding: to be discussed

Outcomes

- Revise the indicator "Progress in the management of contaminated sites in Europe".
- Map on Soil pollution in Europe
- Dissemination of the Good Practices and progress



PILLAR 1 CONCEPT

Recommendation 9

- Extend the LUCAS monitoring for analysis of diffuse soil pollution in Europe (EC)
- Map on Soil pollution in Europe – ***published for Glyphosate***
- Dissemination of the Good Practices and progress including threshold values for organic soil contaminants

