



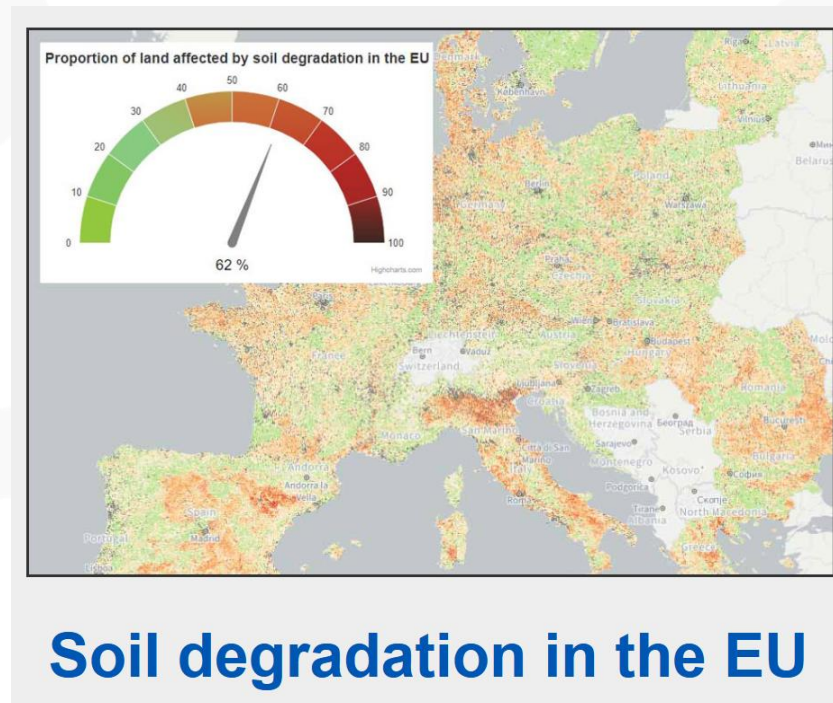
SoilWise project introduction

Fenny van Egmond – ISRIC

Why provide your data and knowledge?

The Mission Soil Projects are **data/knowledge providers**.

Each Project has target groups: Land managers, Scientific community, Policy makers, etc.



WHY Sharing data and knowledge?

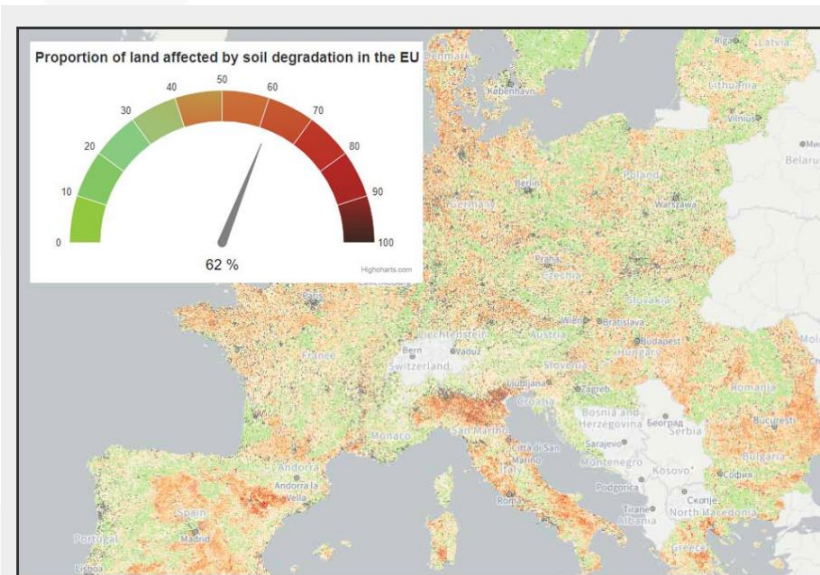
- ✓ Reach your target groups
- ✓ Contribute to the Mission Soil Objectives
- ✓ Have persistent repository for long term impact
- ✓ Improve Soil health in Europe!

Why use additional data and knowledge?

The Mission Soil Projects are (also) **data/knowledge users**.

Because:

- ✓ Find data and knowledge to supplement your own
- ✓ Answer more research questions in the same time
- ✓ Answer questions that a single project or expertise cannot by itself : collaboration in Mission Soil Clusters
- ✓ Contribute to the Mission Soil Objectives
- ✓ Have long term impact with improved results
- ✓ Improve Soil health in Europe!



Soil degradation in the EU

Challenging to find the right data and knowledge



soil water content agroforestry dataset



theia-land

<https://www.theia-land.fr/product> · Traduire cette page

Geoland Soil Moisture – Data Terms

The Soil Moisture products are available in various formats (animation above). They can be downloaded together with the animation (ATBD).
Termes manquants : agroforestry

No agroforestry



MDPI

<https://www.mdpi.com> · Traduire cette page

Deep Soil Water and Forage Production in a ...

de MVM Sarto · 2022 · ... the water content in the superficial layers of the soil in ...

Predatory journal



Data.gov

<https://catalog.data.gov/dataset> · Traduire cette page

soil-water-content - 8 - Dataset - Catalog Data.gov

This dataset consists of two years of weighing ... grown at the USDA-ARS Conservation and Production ...

No agroforestry

Let alone access and combine easily



Findable



Develop, test and deliver a prototype for long-term knowledge and data repository. *EU Mission Soil project, Sept 2023-Aug 2027, 15 partners*

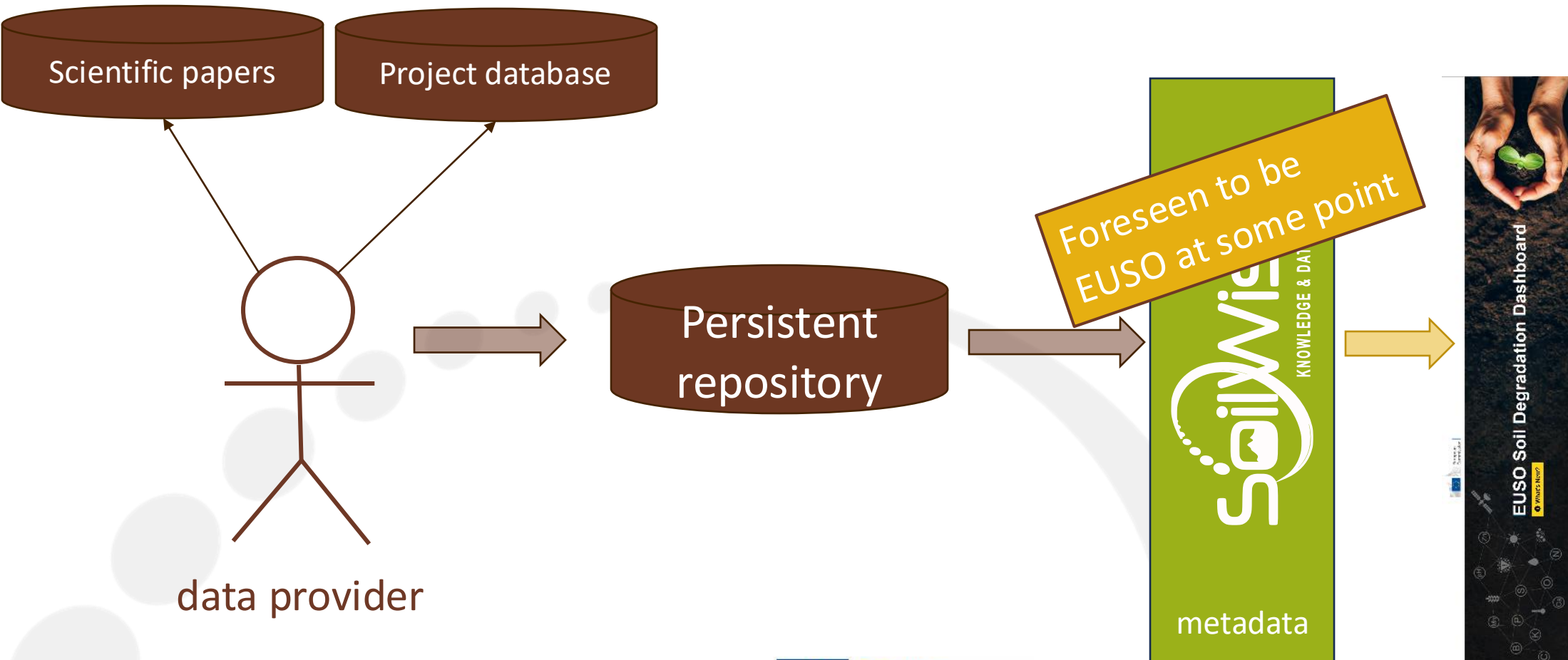


the European Union

This project has received funding from the Horizon Europe research and innovation programme under Grant Agreement No 101112838



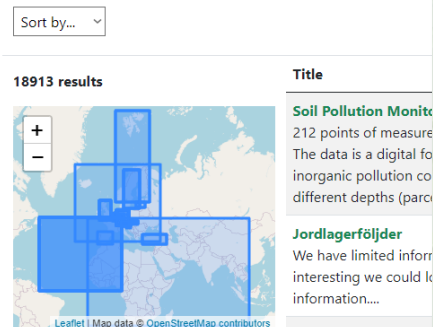
Possible workflow knowledge and data



Funded by
the European Union

This project has received funding from the Horizon Europe research and innovation programme under Grant Agreement No 101112838





Physical Soil Parameters

- > Soil Texture
- > WRB
- > Soil Structure
- > Bulk Density
- > Porosity
- > Water Holding Capacity
- > Soil Moisture

Chemical Soil Parameters

- > PH
- > Organic Matter
- > Cation Exchange Capacity

- > Soil Nitrogen
- > Soil Phosphorus
- > Heavy Metals Concentration

Biological Soil Parameters

- > Microbial Biomass
- > Soil Enzyme Activities
- > Soil Fauna

- > Soil Fertility
- > Water Regulation
- > Soil Erosion Control
- > Carbon Sequestration
- > Soil Health

Title

Soil Pollution Monitoring
212 points of measure
The data is a digital for inorganic pollution co different depths (par

Jordlagerföjder
We have limited infor interesting we could k information....

BORIS - Soil Informa
top soil/sub soil/whole the campaign and nee surveys in Austria in sc plots are measured ev depth intervals, fixed s

Landbouwgebruiks-identification)
Based on input by farm sensing...

LV LUCAS Topsoil 20
Topsoil sampling Sam

Bodemafdekkingska
(Soil sealing rate)

Soil pit excavation...

Soil Map of Slovakia
generalised class-area national mapping pro assumed...

National Soil Map of

Soil parameter inform
parameter information

National Soils Invent
Soil pit excavation Dat and 1995...

Dataset

Bodenübersichtskarte der Bundesrepublik Deutschland 1:5.000.000

Die hier vorgestellte Bodenübersichtskarte im Maßstab 1:5.000.000 wurde durch eine weitere inhaltliche und räumliche Zusammenfassung aus den Legendeneinheiten der BÜK1000N abgeleitet. Diese Zusammenfassung orientierte sich an den Angaben zu Bodenausgangsgesteinen und führte zu 20 bodenkundlichen (23) Legendeneinheiten mit Kartenpolygonen von mindestens 64 Quadratkilometern Größe.



Temporal
Updated: 2023-08-20
Temporal extent

License:
General
bereite
Datenq

UNDER CONSTRUCTION

hale>studio 5.3.0

File Transformation Edit Window Help

Schema Explorer

Source

type filter text

signal_ID_7028_REIFFENHAUSEN_AF_ME

- Date_YYYYmmddHHMMSS
- G_W_m2
- lat_deg
- lon_deg
- Pressure_Pa
- rain_u
- Rg_V
- RH_P
- Rn_W
- Rn_W
- SWC
- SWC
- SWC
- SWC
- SWC_Perc_z50_4m
- T_degC
- T_Soil_degC_z30_1m

New data (source data and metadata schema)

Target

type filter text

SIGNAL_ID_7028_REIFFENHAUSEN_TARGET

- Date_hours
- LAT_deg
- LONG_deg
- SWC_Perc_z50_4m
- SWC_Ratio_z50_0m

Old data (target metadata schema)

Alignment

<Click to select>

Select cell

<Click to select>



Mapping = link between source and target format

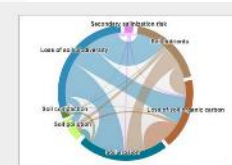
https://glosis-ld.github.io/glosis/glosis_cl/index-en.html#/physioChemicalProp

Carbon (C) - total Vocabulary development

IRI: <http://w3id.org/glosis/model/codelist/physioChemicalPropertyCode-Cartot>

belongs to

- [chemical compound](#)
- [chemical substance](#)
- [Code list for PhysioChemicalProperty - codelist class](#)
- [concept](#)



What are the plans?



Project SoilWise intention is:

- to provide a single access point to soil data and knowledge
- to index available data & knowledge
- to establish catalog federation
- to make your (data and knowledge) life easier



SoilWise intention is NOT:

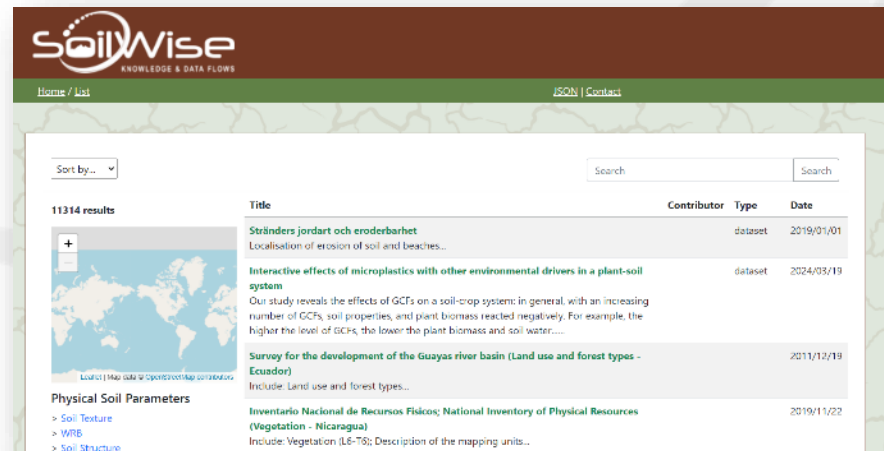
- to copy & store your data
- to control your data
- to steal your data
- to use your data without your permission

Main message



To develop a useful and functional Soil Data and Knowledge Infrastructure, the **collaboration efforts (and benefits from the outcomes) need to be mutual for all involved stakeholders** (EUSO and Mission Soil Horizon projects' end-users included)

Data provider



Data user

Or both?



This project has received funding from the Horizon Europe research and innovation programme under Grant Agreement No. 101112838



Demonstrations of repository functionality

Celine, xxxx

Narrative MRV

Still to update

Fenny van Egmond (ISRIC)

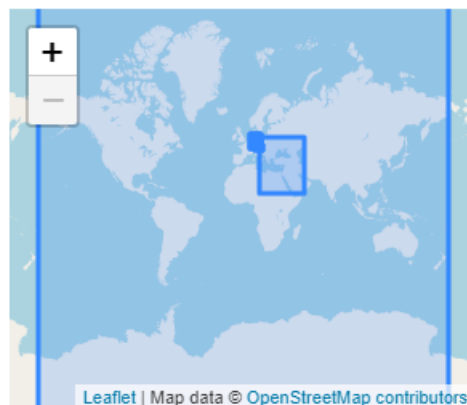
14/11/2024

An MRV data question

As a researcher in MRV, I need input data and parameters for my model on soil carbon sequestration and for upscaling.

For this, I need as harmonised input information in the right format on soil organic carbon content, other soil data, land use, crop, biomass and climate information at regional level for region X

28 results


☐ Spatial filter

Physical Soil Parameters

> Soil Texture x

Chemical Soil Parameters

- > PH
- > Organic Matter
- > Cation Exchange Capacity
- > Electrical Conductivity
- > Nutrient Content
- > Soil Carbon
- > Soil Nitrogen
- > Soil Phosphorus
- > Heavy Metals Concentration

Biological Soil Parameters

- > Microbial Biomass
- > Soil Enzyme Activities
- > Soil Fauna
- > Soil Respiration

Soil Functions

- > Soil Fertility

Title

Contributor

Type

Date

Herbivore Trampling As An Alternative Pathway For Explaining Differences In Nitrogen Mineralization In Moist Grasslands

Studies addressing the role of large herbivores on nitrogen cycling in grasslands have suggested that the direction of effects depends on soil fertility. Via selection for high quality plant species and input of dung and urine, large herbivores have.....

document

2024/11/13

Towards ecologically functional riparian zones: A meta-analysis to develop guidelines for protecting ecosystem...

Riparian zones contribute with biodiversity and ecosystem functions of fundamental importance for regulating flow and nutrient transport in waterways. However, agricultural land-use and physical changes made to improve crop productivity and yield have.....

document

2024/11/13

Statistiques spatio-temporelles sur les propriétés agronomiques des sols agricoles en France issues de la Base de...

In France, farmers commission about 250,000 soil-testing analyses per year to assist them managing soil fertility. The number and diversity of origin of the samples make these analyses an interesting and original information source regarding

document

2024/11/13

First German Agricultural Soil Inventory – Core dataset: LABORATORY DATA

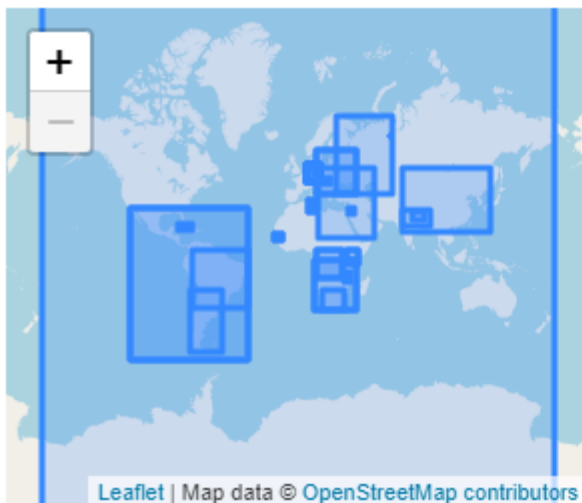
The Federal Republic of Germany is obliged to report all anthropogenic sources and sinks of greenhouse gases on a national scale. Changes in soil organic carbon (SOC) stocks are among these sources and sinks. Furthermore, soil organic matter is a key.....

Johann Heinrich von Thünen-Institut,
Johann Heinrich von Thünen-Institut,
Johann Heinrich von Thünen-Institut

dataset

2020/09/16

43 results



☐ Spatial filter

Physical Soil Parameters

- > [Soil Texture](#)
- > [WRB](#)
- > [Soil Structure](#)
- > [Bulk Density](#)
- > [Porosity](#)
- > [Water Holding Capacity](#)
- > [Soil Moisture](#)

Chemical Soil Parameters

- > [Organic Matter](#) ☒

Biological Soil Parameters

Title	Contributor	Type	Date
First German Agricultural Soil Inventory – Core dataset: LABORATORY DATA The Federal Republic of Germany is obliged to report all anthropogenic sources and sinks of greenhouse gases on a national scale. Changes in soil organic carbon (SOC) stocks are among these sources and sinks. Furthermore, soil organic matter is a key.....	Johann Heinrich von Thünen-Institut, Johann Heinrich von Thünen-Institut, Johann Heinrich von Thünen-Institut	dataset	2020/09/16
SOTER-based soil parameter estimates (SOTWIS) for Central and Eastern Europe, version 1.0 This harmonized set of soil parameter estimates for Central and Eastern Europe has been derived from a revised version of the 1:2.5M Soil and Terrain (SOTER) Database for Central and Eastern Europe (SOVEUR ver. 1.1) and the ISRIC-WISE soil profile.....	ISRIC - World Soil Information	dataset	2021/07/14
INSPIRE: Organic Matter Content of Top-Soils in Germany 1:1,000,000 (BUEK1000-HUMUS-OB) The map "Organic Matter Content of Top-Soils in Germany 1:1,000,000 (INSPIRE)" highlights the results of a Germany-wide compilation of typical soil organic matter contents in top-soils differentiated according to groups of soil parent material, four.....	Bundesanstalt für Geowissenschaften und Rohstoffe (BGR)	dataset	2023/08/22
Soil and Terrain Database (SOTER) for China The Soil and Terrain database for China primary data (version 1.0), at scale 1:1 million (SOTER_China), was compiled of enhanced soil information within the framework of the FAO's program of Land Degradation Assessment in Drylands (LADA).	ISRIC - World Soil Information, ISRIC - World Soil Information, ISRIC - World Soil Information	dataset	2021/07/14

An MRV data question

As a researcher in MRV, I need input data and parameters for my model on soil carbon sequestration and for upscaling.

For this, I need as **harmonised** input information in the right format on soil organic carbon content, other soil data, **land use, crop, biomass and climate** information at regional **level** for region X

An MRV data question

As a researcher in MRV, I need to understand and discuss SOC changes at ICOS sites, I have the regular soil data.

For this, I need additional available information on other variables (e.g. mineralogy). If such data is available in one repository, I will avoid having to do again an inventory of available soil databases.



Funded by
the European Union

This project has received funding from the Horizon Europe research and innovation programme under Grant Agreement No 101112838



Soilwise Soil Info hub

SoilWise will provide an integrated and actionable access point to scattered and heterogeneous soil data and knowledge in Europe, making them FAIR (Findable, Accessible, Interoperable and Reusable) and improve trust, willingness, and ability to share and re-use soil data and knowledge. In three project development cycles, co-creation and co-validation by multi-stakeholder groups are the centre of project activities. SoilWise recognises existing workflows and repositories for specific user needs and aims to work with them to enhance their discoverability, approachability and interconnection. An open, modular, scalable and extensible knowledge and data repository building on existing and new technologies will be provided while respecting data ownership, access policies and privacy. AI- and ML- techniques will be employed to interlink scattered data and knowledge, automatise the processes, infer new knowledge and increase FAIRness. SoilWise applies infrastructure thinking instead of project thinking to design a repository for at least a decade to support EUSO evolvement accordingly.

This is an early prototype of the repository, deployed with the goal to generate feedback to improve the software and content in upcoming iterations. Please provide your feedback via [Github](#)



Search in the catalogue

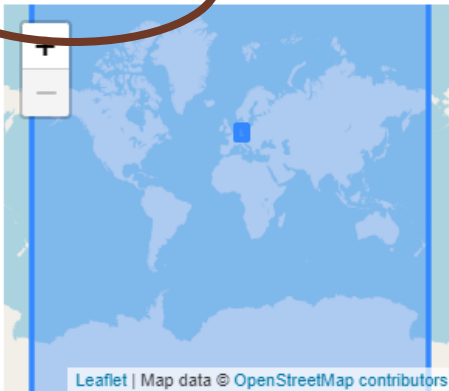
Recent changes

Sort by... ▾

mineralogy

Search

43 results



☐ Spatial filter

Physical Soil Parameters

- > [Soil Texture](#)
- > [WRB](#)
- > [Soil Structure](#)
- > [Bulk Density](#)
- > [Porosity](#)
- > [Water Holding Capacity](#)
- > [Soil Moisture](#)

Chemical Soil Parameters

- > [PH](#)
- > [Organic Matter](#)
- > [Cation Exchange Capacity](#)

Title

Contributor

Type

Date

Investigation Of Runoff Generation In A Pristine, Poorly Gauged Catchment In The Chilean Andes I: A Multi-Method...

AbstractCatchment scale hydrological process studies in southern Chile are of special interest as little research at this scale has been carried out in this region. In particular, the young volcanic ash soils, which are typical for this area, are not.....

document 2024/11/12

Regional Variation In Soil Carbon And $\Delta^{13}C$ In Forests And Pastures Of Northeastern Costa Rica

Recent studies suggest that the direction and magnitude of changes in soil organic carbon (soil C) pools following forest-to-pasture conversion in the tropics are dependent upon initial soil conditions and local factors (e.g. pre-conversion soil C.....

document 2024/11/12

Silicate Weathering In Temperate Forest Soils: Insights From A Field Experiment

Few studies of silicate mineral weathering have been conducted in carbonate-bearing temperate forest soils. With climate and vegetation held constant, we compared soil mineralogy and major element chemistry of soil waters from a carbonate-free.....

document 2024/11/13

Stabilization Of Recent Soil Carbon In The Humid Tropics Following Land Use Changes: Evidence From

document 2024/11/13

- > Microbial Biomass
- > Soil Enzyme Activities
- > Soil Fauna
- > Soil Respiration

Soil Functions

- > Soil Fertility
- > Water Regulation
- > Soil Erosion Control
- > Carbon Sequestration
- > Soil Health
- > Supporting Plant Growth
- > Contaminant Filtration

Soil Degradation Indicators

- > Soil Erosion
- > Soil Compaction
- > Soil Salinization
- > Soil Acidification
- > Soil Contamination


Environmental Soil Functions

- > Habitat For Organisms
- > Climate Regulation
- > Water Filtration

Long-Term Field Experiments

- > Experimental Treatments
- > Temporal Data
- > Environmental Covariates
- > Soil Productivity
- > Soil Management

Type

- > Dataset 

field survey. The spectra were taken at 0.7 to 1.4 m s-1 at 0.3 m above soil surface with an RSI-700.....

On-the-go gamma spectra for the site "Uckermark-1" from the publication Pätzold et al. 2020, Soil Systems 4, 31

The file contains 11,406 datasets. They comprise gamma-ray data (total counts, K-40, U-238, and Th-232, all in Bq), along with co-ordinates from a field survey. The spectra were taken at 0.7 to 1.4 m s-1 at 0.3 m above soil surface with an RSI-700.....

University of Bonn, Institute of Crop Science and Resource Conservation (INRES) - Soil Science and Soil Ecology, Bonn (Germany), University of Bonn, Institute of Crop Science and Resource Conservation (INRES) - Soil Science and Soil Ecology, Bonn (Germany), Leibniz Centre for Agricultural Landscape Research (ZALF)

dataset 2023/12/01

On-the-go gamma spectra for the site "Rheinbach-2" from the publication Pätzold et al. 2020, Soil Systems 4, 31

The file contains 680 datasets. They comprise gamma-ray data (total counts, K-40, U-238, and Th-232, all in Bq), along with co-ordinates from a field survey. The spectra were taken at 0.7 to 1.4 m s-1 at 0.3 m above soil surface with an RSI-700.....

University of Bonn, Institute of Crop Science and Resource Conservation (INRES) - Soil Science and Soil Ecology, Bonn (Germany), University of Bonn, Institute of Crop Science and Resource Conservation (INRES) - Soil Science and Soil Ecology, Bonn (Germany), Leibniz Centre for Agricultural Landscape Research (ZALF)

dataset 2023/12/01

On-the-go gamma spectra for the site "Uckermark 2" from the publication Pätzold et al. 2020, Soil Systems 4, 31

The file contains 13364 datasets. They comprise gamma-ray data (total counts, K-40, U-238, and Th-232, all in Bq), along with co-ordinates from a field survey. The spectra were taken at 0.7 to 1.4 m s-1 at 0.3 m above soil surface with an RSI-700.....

University of Bonn, Institute of Crop Science and Resource Conservation (INRES) - Soil Science and Soil Ecology, Bonn (Germany), University of Bonn, Institute of Crop Science and Resource Conservation (INRES) - Soil Science and Soil Ecology, Bonn (Germany), Leibniz Centre for Agricultural Landscape Research (ZALF)

dataset 2023/09/12

On-the-go gamma spectra for the site "Düren" from the publication Pätzold et al. 2020, Soil Systems 4, 31

The file contains 3,592 datasets. They comprise gamma-ray data (total counts, K-40, U-238, and Th-232, all in Bq), along with co-ordinates from a

University of Bonn, Institute of Crop Science and Resource Conservation (INRES) - Soil Science and Soil Ecology, Bonn (Germany), University of Bonn, Institute of Crop Science and Resource Conservation (INRES) - Soil Science and Soil Ecology, Bonn (Germany), Leibniz Centre for Agricultural Landscape Research (ZALF)

dataset 2023/12/01

Dataset

On-the-go gamma spectra for the site "Uckermark-1" from the publication Pätzold et al. 2020, Soil Systems 4, 31



The file contains 11,406 datasets. They comprise gamma-ray data (total counts, K-40, U-238, and Th-232, all in Bq), along with co-ordinates from a field survey. The spectra were taken at 0.7 to 1.4 m s⁻¹ at 0.3 m above soil surface with an RSI-700 instrument (two 4.2 L NaI crystals). Further details in the open access publication Pätzold et al. 2020 (<https://doi.org/10.3390/soilsystems4020031>)



farming

Soil

opendata

soil heterogeneity; proximal soil sensing; on-the-go gamma spectroscopy; grain size distribution; soil mineralogy; variable rate irrigation; liming; plot trial;

Boden

Contacts

Pätzold, Stefan

Role: author

Email: s.paetzold@uni-bonn.de

Url:

Pätzold, Stefan

Role: projectLeader

Email: s.paetzold@uni-bonn.de

Links



<https://maps.bonares.de/mapapps/...>

Narrative : an agroforestry story

An agroforestry story

As a researcher in ecophysiology at INRAE, I need to simulate the water and light use efficiencies in agroforestry plots.

For this modeling, I need as input information
the soil water content in %



Funded by
the European Union

This project has received funding from the Horizon Europe research and innovation programme under Grant Agreement No 101112838



Soil water content data for agroforestry – *Before SoilWise*



soil water content agroforestry dataset



theia-land

<https://www.theia-land.fr> > product · Traduire cette page

Geoland Soil Moisture – Data Terra

The **Soil Moisture** products are available for the (animation above). They can be downloaded together with the (animation) (ATBD)

Termes manquants : agroforestry, les resultats avec : agroforestry

No agroforestry



MDPI

<https://www.mdpi.com> > ... · Traduire cette page

Deep Soil Water Content and Forage Production in a ...

de MVM Sarto · 2022 · Cité 17 Agroforestry systems decreased the water content in the superficial layers of the the dry season, the soil water ...

Predatory journal



Agence nationale de la recherche

<https://anr.fr> > Project-ANR-14-C... · Traduire cette page

Estimation of the soil Available Water Content by direct ...

AWC is estimated on soil by soil s laboratory measurements, field monitoring, or calculation by pedotransfer function ses.

No data



Funded by
the European Union

This project has received funding from the Horizon Europe research and innovation programme under Grant Agreement No 101112838



Soil water content data for agroforestry – *Before SoilWise*



The screenshot shows the ISRIC Data Hub interface. The header includes the ISRIC logo (a globe with green and orange stripes) and the text "ISRIC World Soil Information". A search bar contains the text "soil water content agroforestry dataset". Below the search bar, there are three tabs: "ISRIC Data Hub", "Rechercher", and "Visualiser". The main content area displays a yellow message box with a sad face icon and the text "Aucune information trouvée !". A red stamp with the text "No information" is placed over the message box.

ISRIC World Soil Information

soil water content agroforestry dataset

ISRIC Data Hub Rechercher Visualiser

☹️ Aucune information trouvée !

No information

Soil water content data for agroforestry – *Before SoilWise*

OpenAIRE | EXPLORE

Search

D

soil water content agroforestry dataset



RESEARCH PRODUCTS (283)

PROJECTS (0)

DATA SOURCES (0)

ORGANIZATIONS (0)

Soil isotope data_paper "Canopy cover effects on local soil water dynamics in a tropical agroforestry system: Evaporation drives soil water isotopic enrichment"

Research Data >> Dataset • 2021 • Publisher: Harvard Dataverse

Authors: Benegas, Laura;

DOI: 10.7910/dvn/maknct

18O and deuterium signatures of soil samples collected at top soil and at 100 m depth, together with the soil water content (SWC) in a coffee agroforestry system in Central Costa Rica. The purpose of this dataset was to build and test a Conceptual model on how canopy cover can potentially influence local soil water dynamics

Harvard Dataverse ▾

Link to

Share

Cite

Claim

0

Calibrating the STICS soil-crop model to explore the impact of agroforestry parklands on millet growth

Publication >> Article • 2024 • France • Publisher: Elsevier BV • Funded by: EC | SustainSAHEL, EC | LEAP-AGRI

Authors: Sow, Sidy; Senghor, Yolande; Sadio, Khadiatou; Vezy, Rémi; [+16 Authors](#)

DOI: 10.1016/j.fcr.2023.109206

Context Agroforestry systems provide critical benefits for food security and climate change mitigation. Yet, they are complex and heterogeneous systems hard to optimize. The use of process-based crop models provides an opportunity to understand better the interactions between soil, crop, tree and climate and explore...

Field Crops Research... ▾

Link to

Share

Cite


Claim

Access Routes

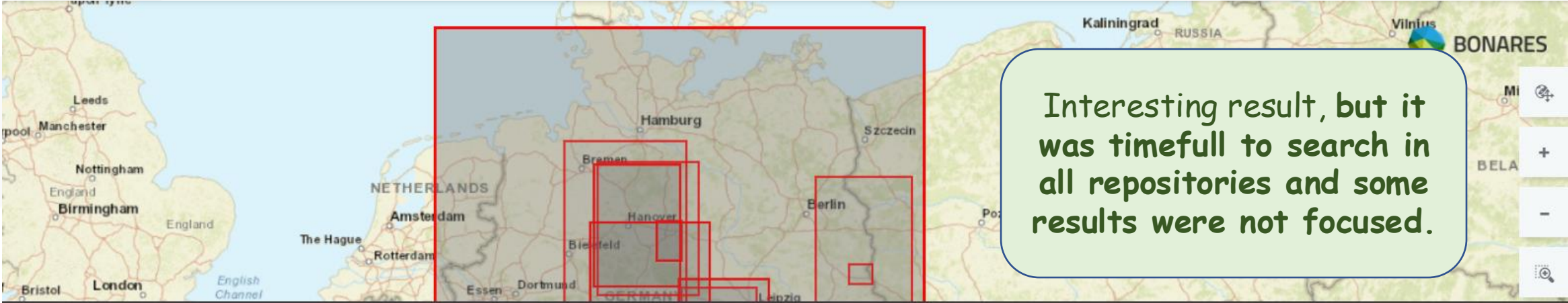
0



Soil water content data for agroforestry – *Before SoilWise*





**BONARES** Repository

soil water content agroforestry dataset



Interesting result, but it was timefull to search in all repositories and some results were not focused.

Result Center



Refine your search

► Spatial representation type

► Resource type

► Category

► Other constraints

► Funder name

► Contact Name

► Organisation

► City

☒ ☐

Meteorological data, soil temperature and soil water content for Reiffenhausen Agroforestry from 2016 to 2017

dataset

CCBY

Author: Christian Markwitz

Publisher: BonaRes Data Centre (Leibniz Centre for Agricultural Landscape Research (ZALF))

Catalog: BonaRes Repository

Abstract: The data set was provided by the responsible parties of the SIGNAL sub project "Evaporation and transpiration of agroforestry". The main goal of the sub project is to investigate the effect of agroforestry on evapotranspiration on a whole system scale. We applied the so called surface energy balance method to calculate half hourly evapotranspiration rates. For that half hourly evapotranspiration rates were calculated as a residual of the net radiation, the sensible heat flux and the ground heat flux. Besides the latter energy balance components, also standard meteorological data, such as global radiation, air temperature, relative humidity, wind speed and -direction, air pressure and precipitation were continuously measured since March 2016. All instruments were installed at a 10 m tall weather mast and the data were automatically collected. The weather mast was installed directly at the agroforestry plot of Reiffenhausen (Lower Saxony). The agroforestry system in Reiffenhausen is of an grass land alley cropping type, where willow tree strips and grass land alternate. In addition to standard meteorological data the current data set contains the soil temperature and -water content.

Type: Dataset

Items 1-17 of 17

All

Soil water content data for agroforestry – *With SoilWise*



SoilWise
KNOWLEDGE & DATA FLOWS

<https://soilwise-he.containers.wur.nl/>

Welcome to the Soilwise HE data and knowledge hub

You have arrived at a prototype of the Soilwise HE Data and Knowledge hub to safeguard soils. Together, we're fostering soil wisdom, advancing agriculture, and building a legacy of greener, healthier soils.

Read more about the project behind this prototype at our website at Soilwise-HE.eu

Search through the catalogue

soil water content agroforestry

Envoyer

Functionality
Catalogue



Funded by
the European Union

This project has received funding from the Horizon Europe research and innovation programme under Grant Agreement No 101112838

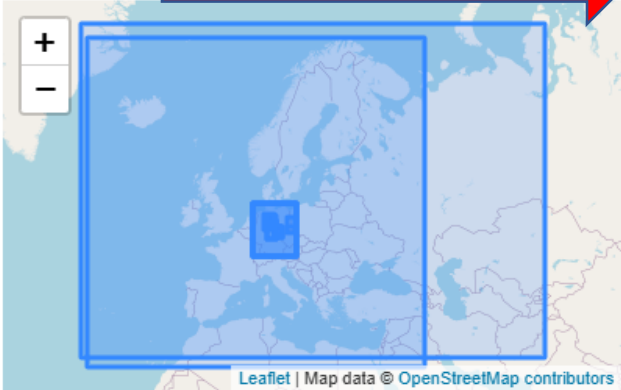


Soil water content data for agroforestry – *With SoilWise*

Sort by... ▾

soil water content agroforestry

44 results.




Leaflet | Map data © OpenStreetMap contributors

☐ Spatial filter
☐ Facets

Title	Organisation	Type	Date
Meteorological data, soil temperature and soil water content for Reiffenhausen Agroforestry from 2016 to 2017	University of Göttingen, Bioclimatology, -, Leibniz Centre for Agricultural Landscape Research (ZALF)	dataset	2024/11/11
WMS Service of the dataset "Meteorological data, soil temperature and soil water content for Mariensee Agroforestry from 2016 to 2017"	University of Göttingen, Bioclimatology, University of Göttingen, Bioclimatology, Leibniz Centre for Agricultural Landscape Research (ZALF)	service	2021/03/16
Agroforestry delivers a win-win solution for ecosystem services in sub-Saharan Africa. A meta-analysis		journalpaper	2025/02/26
WMS of the dataset 'Soil water content at agroforestry site in Forst, 2019 and 2020'	Brandenburgische Technische Universität Cottbus-Senftenberg, Brandenburgische Technische Universität Cottbus-Senftenberg, Leibniz Centre for Agricultural Landscape Research (ZALF)	service	2024/07/11
Soil Water Regime Under Rotational Fallow And Alternating Hedgerows On An Ultisol In Southern Cameroon		journalpaper	2025/03/04
Water Harvesting In A 'Runoff-		journalpaper	2025/03/04

Functionality Catalogue


EDGE & DATA FLOWS

Soil water content data for agroforestry – *With SoilWise*

Functionality
Catalogue

Type

[Journalpaper](#)
[Dataset](#)
[Service](#)
[Document](#)

Faceted
filters

24
13
6
1

Soil_chemical_properties

[Nitrogen](#)
[Carbon](#)
[Soc](#)

2
1
1

Soil_functions

[Ecosystems](#)
[Mineralisation](#)

1
1

Soil_properties

[Soil fertility](#)

1

Soil_threats

[Soil erosion](#)

1

Productivity

soil water content agroforestry

Search

Title	Organisation	Type	Date
Meteorological data, soil temperature and soil water content for Reiffenhausen Agroforestry from 2016 to 2017	University of Göttingen, Bioclimatology, -, Leibniz Centre for Agricultural Landscape Research (ZALF)	dataset	2024/11/11
WMS Service of the dataset "Meteorological data, soil temperature and soil water content for Mariensee Agroforestry from 2016 to 2017"	University of Göttingen, Bioclimatology, University of Göttingen, Bioclimatology, Leibniz Centre for Agricultural Landscape Research (ZALF)	service	2021/03/16
Agroforestry delivers a win-win solution for ecosystem services in sub-Saharan Africa. A meta-analysis		journalpaper	2025/02/26
WMS of the dataset 'Soil water content at agroforestry site in Forst, 2019 and 2020'	Brandenburgische Technische Universität Cottbus-Senftenberg, Brandenburgische Technische Universität Cottbus-Senftenberg, Leibniz Centre for Agricultural Landscape Research (ZALF)	service	2024/07/11
Soil Water Regime Under Rotational Fallow And Alternating Hedgerows On An Ultisol In Southern Cameroon		journalpaper	2025/03/01
Water Harvesting In A 'Runoff-Catchment' Agroforestry System In		journalpaper	2025/03/01

Soil water content data for agroforestry – *With SoilWise*

Dataset

Meteorological data, soil temperature and soil water content for Reiffenhausen Agroforestry from 2016 to 2017

The data set was provided by the responsible parties of the SIGNAL sub project "Evaporation and transpiration of agroforestry". The main goal of the sub project is to investigate the effect of agroforestry on evapotranspiration on a whole system scale. We applied the so called surface energy balance method to calculate half hourly evapotranspiration rates. For that half hourly evapotranspiration rates were calculated as a residual of the net radiation, the sensible heat flux and the ground heat flux. Besides the latter energy balance components, also standard meteorological data, such as global radiation, air temperature, relative humidity, wind speed and -direction, air pressure and precipitation were continuously measured since March 2016. All instruments were installed at a 10 m tall weather mast and the data were automatically collected. The weather mast was installed directly at the agroforestry plot of Reiffenhausen (Lower Saxony). The agroforestry system in Reiffenhausen is of an grass land alley cropping type, where willow tree strips and grass land alternate. In addition to standard meteorological data the current data set contains the soil temperature and -water content.

climatologyMeteorologyAtmosphere meteorological observations agroforestry microclimate
soil measurements soil analysis global radiation net radiation wind speed relative humidity
wind direction air temperature ground heat flux soil water content soil temperature air pressure
precipitation Atmosphärischer Vorgang Luftbewegung Atmosphärische Bedingungen Boden

Contacts

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Email: christian.markwitz@forst.uni-goettingen.de

Deliverypoint: Büsgenweg 2

City: Göttingen



Functionality
providing search results

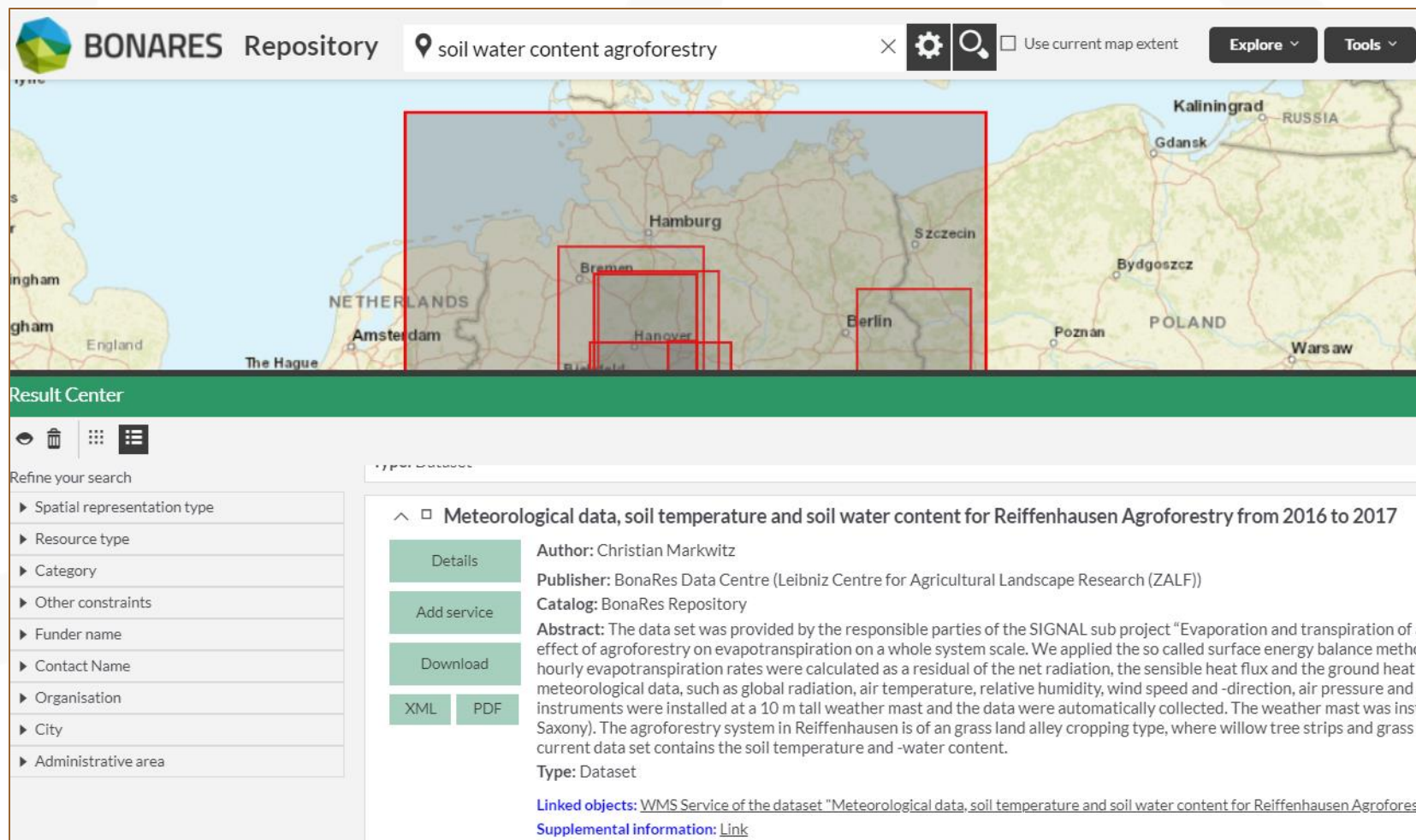
Links



[https://maps.bonares.de/mapapps/...](https://maps.bonares.de/mapapps/)

1.05 KB

Soil water content data for agroforestry – *With SoilWise*



BONARES Repository soil water content agroforestry

Result Center

Refine your search

- ▶ Spatial representation type
- ▶ Resource type
- ▶ Category
- ▶ Other constraints
- ▶ Funder name
- ▶ Contact Name
- ▶ Organisation
- ▶ City
- ▶ Administrative area

Meteorological data, soil temperature and soil water content for Reiffenhausen Agroforestry from 2016 to 2017

Details

Author: Christian Markwitz

Publisher: BonaRes Data Centre (Leibniz Centre for Agricultural Landscape Research (ZALF))

Catalog: BonaRes Repository

Abstract: The data set was provided by the responsible parties of the SIGNAL sub project "Evaporation and transpiration of agroforestry on a whole system scale. We applied the so called surface energy balance method hourly evapotranspiration rates were calculated as a residual of the net radiation, the sensible heat flux and the ground heat flux. Meteorological data, such as global radiation, air temperature, relative humidity, wind speed and -direction, air pressure and precipitation were measured with meteorological instruments were installed at a 10 m tall weather mast and the data were automatically collected. The weather mast was installed in the agroforestry system in Reiffenhausen (Saxony). The agroforestry system in Reiffenhausen is of an grass land alley cropping type, where willow tree strips and grass land are intercropped. The current data set contains the soil temperature and -water content.

Type: Dataset

Linked objects: [WMS Service of the dataset "Meteorological data, soil temperature and soil water content for Reiffenhausen Agroforestry from 2016 to 2017"](#)

Supplemental information: [Link](#)

Download

XML **PDF**

Functionality
data download
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This project has received funding from the Horizon Europe research and innovation programme under Grant Agreement No 101112838



Soil water content data for agroforestry – *With SoilWise*

Check of the
metadata
(units):

BONARES Repository

soil water content agroforestry

Use current map extent

Explore Tools

Result Center

<input type="checkbox"/>	Meteorological data, soil temperature and soil water content for Reiffenhausen Agroforestry from 2016 to 2017
Details	Author: Christian Markwitz
Add service	Publisher: BonaRes Data Centre (Leibniz Centre for Agricultural Landscape Research (ZALF))
Download	Catalog: BonaRes Repository
XML	Abstract: The data set was provided by the responsible parties of the SIGNAL sub project "Evaporation and transpiration of agroforestry on evapotranspiration on a whole system scale. We applied the so called surface energy balance method hourly evapotranspiration rates were calculated as a residual of the net radiation, the sensible heat flux and the ground heat flux. meteorological data, such as global radiation, air temperature, relative humidity, wind speed and -direction, air pressure and precipitation instruments were installed at a 10 m tall weather mast and the data were automatically collected. The weather mast was installed in Reiffenhausen (Saxony). The agroforestry system in Reiffenhausen is of an grass land alley cropping type, where willow tree strips and grass land are intercropped. The current data set contains the soil temperature and -water content.
PDF	Type: Dataset
	Linked objects: WMS Service of the dataset "Meteorological data, soil temperature and soil water content for Reiffenhausen Agroforestry"
	Supplemental information: Link

Bonares Repository PDF Details View



Description	
Title:	Meteorological data, soil temperature and soil water content for Reiffenhausen Agroforestry from 2016 to 2017
Title (German):	Meteorologische Daten, Bodentemperatur und Bodenfeuchte für den Agroforststandort Reiffenhausen von 2016 bis 2017
Column name:	SWC_Perc_z50_4m
Long name:	Soil water content
Description:	Soil water content was measured in 0.5 m depth and at 4 m distance to the tree strips
Unit:	%
Methods:	Soil water content was measured in 0.5 m depth and at 4 m distance to the tree strips.
Quality:	Outlier removed and not gap-filled
Data type:	numeric



This project has received funding from the Horizon Europe research and innovation programme under Grant Agreement No 101112838



Soil water content data for agroforestry – *With SoilWise*

Download of
data :

Soil water content in %, at
different depth and
distances from the tree lines

Time
↓

SWC_Perc_z30_1m	SWC_Perc_z30_4m	SWC_Perc_z50_0m	SWC_Perc_z50_4m	SWC_Perc_z100_0m	SWC_Perc_z100_1m
35.7029	36.628325	48.598015	39.50269	46.54864	40.010545
35.72367	36.668275	48.61131	39.51472	46.551475	40.012855
35.68747	36.54648	48.65459	39.535865	46.55359	40.00477
35.716255	36.594485	48.614395	39.5268	46.534	40.02503
35.697445	36.603985	48.59386	39.50731	46.5442	40.00546
35.69685	36.574905	48.6032	39.526105	46.54335	40.01454
35.715615	36.622265	48.592875	39.516305	46.522835	40.024275

BONARES Repository

soil water content agroforestry

Result Center

Refine your search

- Spatial representation type
- Resource type
- Category
- Other constraints
- Funder name
- Contact Name
- Organisation

Download

Meteorological data, soil temperature and soil water content for Reiffenhausen Agroforestry from 2016 to 2017

Author: Christian Markwitz

Publisher: BonaRes Data Centre (Leibniz Centre for Agricultural Landscape Research (ZALF))

Catalog: BonaRes Repository

Abstract: The data set was provided by the responsible parties of the SIGNAL sub project "Evaporation and transpiration of agroforestry on evapotranspiration on a whole system scale. We applied the so called surface energy balance method hourly evapotranspiration rates were calculated as a residual of the net radiation, the sensible heat flux and the ground heat flux. meteorological data, such as global radiation, air temperature, relative humidity, wind speed and -direction, air pressure and instruments were installed at a 10 m tall weather mast and the data were automatically collected. The weather mast was installed at the Reiffenhausen Agroforestry site. Reiffenhausen is of an grass land alley cropping type, where willow tree strips and grass land are intercropped. The data set contains meteorological data, soil temperature and soil water content for Reiffenhausen Agroforestry from 2016 to 2017.

SWC_Perc_z30_1m	SWC_Perc_z30_4m	SWC_Perc_z50_0m	SWC_Perc_z50_4m	SWC_Perc_z100_0m	SWC_Perc_z100_1m
35.7029	36.628325	48.598015	39.50269	46.54864	40.010545
35.72367	36.668275	48.61131	39.51472	46.551475	40.012855
35.68747	36.54648	48.65459	39.535865	46.55359	40.00477
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35.69685	36.574905	48.6032	39.526105	46.54335	40.01454
35.715615	36.622265	48.592875	39.516305	46.522835	40.024275

Functionality
data download
'as is'

Soil water content data for agroforestry

Now that I have my **new data** :

OBJE	lat_deg	lon_deg	Date_YYYYmm	T_degC	RH_Perc	Rn_W_m2	G_W_m2	rain_n	WS_m_s	T_Soil_degC	SWC_Perc_z30_1m	SWC_Perc_z30_4m	SWC_Perc_z50_0m	SWC_Perc_z50_4m	SWC_Perc_z100_0m	SWC_Perc_z100_1m
1	51.3989	9.98712	2016-03-01T0	-1.33732	75.00972	-56.84727	-7.592705	0	1.919708	2.7958995	35.7029	36.628325	48.598015	39.50269	46.54864	40.010545
2	51.3989	9.98712	2016-03-01T0	-1.81382	78.97988	-44.13033	-7.585438	0	1.431261	2.7927845	35.72367	36.668275	48.61131	39.51472	46.551475	40.012855
3	51.3989	9.98712	2016-03-01T0	-1.71470	79.40894	-23.63116	-7.541722	0	1.256810	2.786562	35.68747	36.54648	48.65459	39.535865	46.55359	40.00477

I need to compare it to an **old data** having a different format :

LAT_deg	LONG_deg	Date_hours	SWC_Perc_z50_4m	SWC_Ratio_z50_0m
51.398939	9.987122	2015-03-01T0	47.61131	39.124
51.398940	9.987123	2015-03-01T0	46.293015	38.9658
51.398941	9.987124	2015-03-01T0	46.53759	38.23725
51.398942	9.987125	2015-03-01T0	47.512395	39.1724



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Soil water content data for agroforestry

So I need to transform my **new data format** :

OBJE	lat_deg	lon_deg	Date_YYYYmm	T_degC	RH_Perc	Rn_W_m2	G_W_m2	rain_n	WS_m_s	T_Soil_degC	SWC_Perc_z30_1m	SWC_Perc_z30_4m	SWC_Perc_z50_0m	SWC_Perc_z50_4m	SWC_Perc_z100_0m	SWC_Perc_z100_1m
1	51.3989	9.98712	2016-03-01T0	-1.33732	75.00972	-56.84727	-7.592705	0	1.91970	2.7958995	35.7029	36.628325	48.598015	39.50269	46.54864	40.010545
2	51.3989	9.98712	2016-03-01T0	-1.81382	78.97988	-44.13033	-7.585438	0	1.43126	2.7927845	35.72367	36.668275	48.61131	39.51472	46.551475	40.012855
3	51.3989	9.98712	2016-03-01T0	-1.71470	79.40894	-23.63116	-7.541722	0	1.25681	2.786562	35.68747	36.54648	48.65459	39.535865	46.55359	40.00477

in the **old data format** :

LAT_deg	LONG_deg	Date_hours	SWC_Perc_z50_4m	SWC_Ratio_z50_0m
51.398939	9.987122	2015-03-01T0	47.61131	39.124
51.398940	9.987123	2015-03-01T0	46.293015	38.9658
51.398941	9.987124	2015-03-01T0	46.53759	38.23725
51.398942	9.987125	2015-03-01T0	47.512395	39.1724

To obtain this **transformed data** :

LAT_deg	LONG_deg	Date_hours	SWC_Perc_z50_4m	SWC_Ratio_z50_0m
51.398939	9.987122	2016-03-01T0	48.61131	39.44728
51.398940	9.987123	2016-03-01T0	48.598015	39.47648
51.398941	9.987124	2016-03-01T0	48.65459	39.43775
51.398942	9.987125	2016-03-01T0	48.614395	39.43758



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Soil water content data for agroforestry

So I need to transform my **new data format** :

OBJE	lat_deg	lon_deg	Date_YYYYmm	T_degC	RH_Perc	Rn_W_m2	G_W_m2	rain_n	WS_m_s	T_Soil_degC	SWC_Perc_z30_1m	SWC_Perc_z30_4m	SWC_Perc_z50_0m	SWC_Perc_z50_4m	SWC_Perc_z100_0m	SWC_Perc_z100_1m
1	51.3989	9.98712	2016-03-01T0	-1.33732	75.009722	-56.84727	-7.592705	0	1.91970	2.7958995	35.7029	36.628325	48.598015	39.50269	46.54864	40.010545
2	51.3989	9.98712	2016-03-01T0	-1.81382	78.97988	-44.13033	-7.585438	0	1.43126	2.7927845	35.72367	36.668275	48.61131	39.51472	46.551475	40.012855
3	51.3989	9.98712	2016-03-01T0	-1.71470	79.40894	-23.63116	-7.541722	0	1.25681	2.786562	35.68747	36.54648	48.65459	39.535865	46.55359	40.00477

in the **old data format** :

LAT_deg	LONG_deg	Date_hours	SWC_Perc_z50_4m	SWC_Ratio_z50_0m
51.398939	9.987122	2015-03-01T0	47.61131	39.124
51.398940	9.987123	2015-03-01T0	46.293015	38.9658
51.398941	9.987124	2015-03-01T0	46.53759	38.23725
51.398942	9.987125	2015-03-01T0	47.512395	39.1724

« Target metadata schema »

To obtain this **transformed data** :

LAT_deg	LONG_deg	Date_hours	SWC_Perc_z50_4m	SWC_Ratio_z50_0m
51.398939	9.987122	2016-03-01T0	48.61131	39.44728
51.398940	9.987123	2016-03-01T0	48.598015	39.47648
51.398941	9.987124	2016-03-01T0	48.65459	39.43775
51.398942	9.987125	2016-03-01T0	48.614395	39.43758



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Soil water content data for agroforestry

So I need to transform my **new data format** :

OBJE	lat_deg	lon_deg	Date_YYYYmm	T_degC	RH_Perc	Rn_W_m2	G_W_m2	rain_n	WS_m_s	T_Soil_degC	SWC_Perc_z30_1m	SWC_Perc_z30_4m	SWC_Perc_z50_0m	SWC_Perc_z50_4m	SWC_Perc_z100_0m	SWC_Perc_z100_1m
1	51.398	9.9871	2016-03-01T0	-1.33732	75.009722	-56.84727	-7.592705	0	1.91970	2.7958995	35.7029	36.628325	48.598015	39.50269	46.54864	40.010545
2	51.398	9.9871	2016-03-01T0	-1.81382	78.979888	-44.13033	-7.585438	0	1.431261	2.7927845	35.72367	36.668275	48.61131	39.51472	46.551475	40.012855
3	51.398	9.9871	2016-03-01T0	-1.71470	79.408944	-23.631161	-7.541722	0	1.25681	2.786562	35.68747	36.54648	48.65459	39.535865	46.55359	40.00477

« Source data (and metadata schema) »

in the **old data format** :

Unit conversion % → ratio

LAT_deg	LONG_deg	Date_hours	SWC_Perc_z50_4m	SWC_Ratio_z50_0m
51.398939	9.987122	2015-03-01T0	47.61131	39.124
51.398940	9.987123	2015-03-01T0	46.293015	38.9658
51.398941	9.987124	2015-03-01T0	46.53759	38.23725
51.398942	9.987125	2015-03-01T0	47.512395	39.1724

To obtain this **transformed data** :

LAT_deg	LONG_deg	Date_hours	SWC_Perc_z50_4m	SWC_Ratio_z50_0m
51.398939	9.987122	2016-03-01T0	48.61131	
51.398940	9.987123	2016-03-01T0	48.598015	
51.398941	9.987124	2016-03-01T0	48.65459	
51.398942	9.987125	2016-03-01T0	48.614395	

Ratio



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Soil water content data for agroforestry

I usually program a script for this operation, but I can use Hale Studio, there will be less coding.

<https://wetransform.to/halestudio>



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How can you comment?

Dataset

Meteorological data, soil temperature and soil water content for Reiffenhausen Agroforestry from 2016 to 2017

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0 comments

Write Preview

Aa

Sign in to comment

10

Sign in with GitHub

Updated: 2024-11-11

Contacts

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Position: PhD Student

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Email: christian.markwitz@forst.uni-goettingen.de

Deliverypoint: Büsgenweg 2

City: Göttingen

Interactive discussion on enhancing the prototype's usefulness for users, and metadata

**Fenny van Egmond ISRIC, Celine Blitz-Frayret CIRAD,
Radu Giurgiu EV-ILVO, Tomas Reznik MU, Paul van
Genuchten ISRIC, Panos Ilias EV-ILVO**

User stories

Please go to the **flip charts** on the wall

- **Discuss** with each other (e.g. per topic group?)
- **Write down 2** typical data or information questions from your project or everyday work, each
- In this **format**:

As an <actor>,

I want to have/be able to <function>,

so that I can/don't have to <business reason>.

How to resolve the user stories currently?

- For the user stories you just wrote down, add another post-it describing **how you would approach this question now**
- And add a **V** or an **X**, if that is **satisfactory** or not

An ideal world

- For the user stories you just wrote down, add another post-it describing how, in an **ideal world**, you would like to have your information question solved
 - How do you want to **interact** with a system, what do you supply?
 - And what (and in what level of detail, or characteristics) do you **expect back** from the system?

Quick wins

Between an ideal world and real life (the current state of the art) there may be a **gap**.

- What are the quick wins you think a **project** like SoilWise (or your own data team/WP) should **focus** on to make your life easier?
- What can you do **yourself** to make your and others' data life easier?



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Report back

- Per flip-chart group



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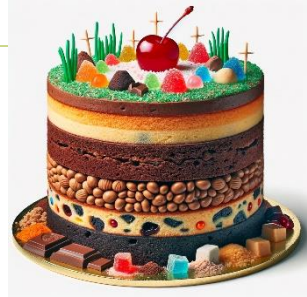


Soil Companion

Rob Knapen
Wageningen Environmental Research

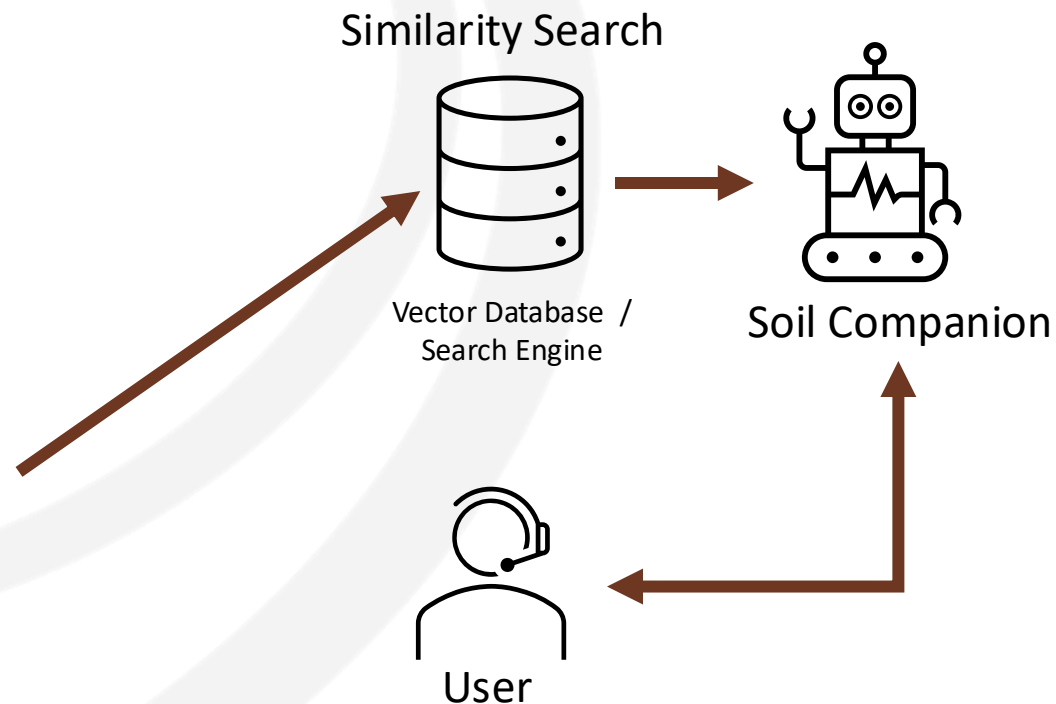
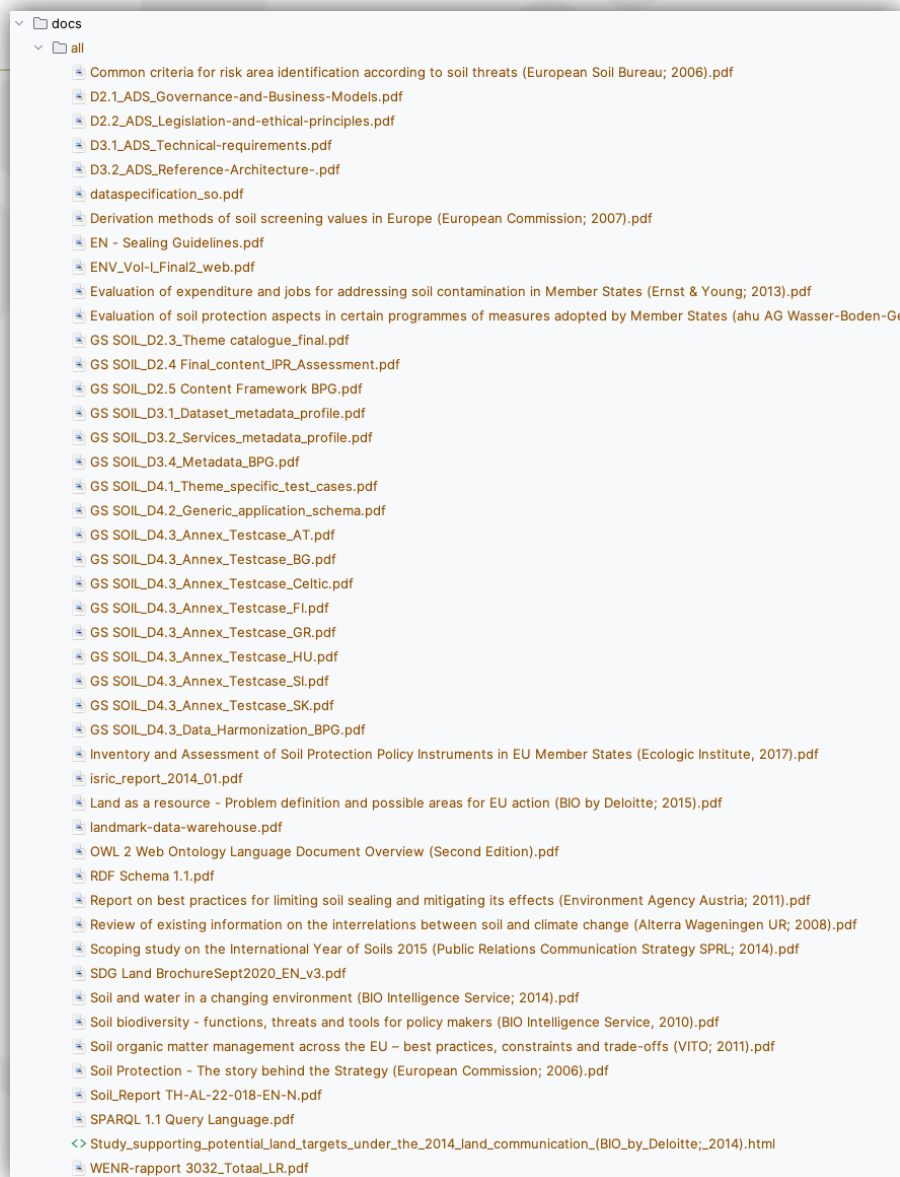
Using a LLM to answer questions in natural language

*“LLMs are the cherry on the cake,
the cake being a curated database of knowledge.”*



- Large Language Models (LLM) or ChatGPT type models offer great opportunities for generating answers to (natural language) user queries
- There are also some disadvantages
 - Training cut off date
 - Broadly oriented and less focused on soil health
 - Tendency to “hallucinate” and be generic

Current SoilWise Chatbot prototype



This project has received funding from the Horizon Europe research and innovation programme under Grant Agreement No 101112838



- Home
- ChatBot**
- Configuration

Target Audience: ⓘ

Non experts ▼

If you want to start a new conversation press this button. It will make the ChatBot forget what has been written before.

Clear Conversation

Welcome to your Soil Companion!

Soil Companion is a chatbot that has access to a selected set of documents with soil information, and is ready to answer your questions based on that knowledge. However, keep in mind that responses generated by the AI might not be fully reliable and always should be verified.

What is your question related to soil?

Which areas in Europe are most suitable for agroforestry?

To determine the most suitable areas for agroforestry in Europe, several factors need to be considered, including climate, soil type, land use, and biodiversity. Agroforestry systems can thrive in various regions, but they are particularly beneficial in areas where:

- Soil Quality:** Well-drained, fertile soils are ideal for agroforestry. Soils with good organic matter content support tree growth and crop production.
- Climate:** Regions with moderate rainfall and temperatures are favorable. Agroforestry can be particularly effective in Mediterranean climates, where trees can provide shade and reduce water evaporation.
- Land Use:** Areas with existing agricultural practices can be transformed into agroforestry systems. Regions with mixed farming systems are often more adaptable to integrating trees.
- Biodiversity:** Regions that support diverse ecosystems can enhance the benefits of agroforestry, such as pest control and pollination.

Some specific regions in Europe that are often highlighted for their potential in agroforestry include:

- Southern Europe:** Countries like Spain, Italy, and Greece, where Mediterranean climates prevail.
- Central Europe:** Parts of France and Germany, where mixed farming is common.
- Northern Europe:** Areas in the UK and Scandinavia, where agroforestry can help improve biodiversity and soil health.

For more detailed information on specific areas and their suitability for agroforestry, you may want to consult soil and land use databases or studies that focus on agroforestry practices in Europe. If you need more specific data or resources, please let me know!

- Ref: Land as a resource - Problem definition and possible areas for EU action (BIO by Deloitte; 2015).pdf - p.68 - score: 0.410912

- Ref: Soil organic matter management across the EU – best practices, constraints and trade-offs (VITO; 2011).pdf - p.77 - score: 0.410533

- Ref: Soil organic matter management across the EU – best practices, constraints and trade-offs (VITO; 2011).pdf - p.76 - score: 0.409794

- By : GPT-4O Mini (OpenAI) - Prompt: Non experts - Temp: 0.1

Your question

Adjusts writing style

Erases the chatbot's memory

LLM 'author' information

Your questions about soil

Response from the chatbot

References from SoilWise (harvested) knowledge base

SoilWise

Home

ChatBot

Configuration

Target Audience: Non experts

If you want to start a new conversation press this button. It will make the ChatBot forget what has been written before.

Clear Conversation

Welcome to your Soil Companion!

! Soil Companion is a chatbot that has access to a selected set of documents with soil information, and is ready to answer your questions based on that knowledge. However, keep in mind that responses generated by the AI might not be fully reliable and always should be verified.

What is your question related to soil?

Which areas in Europe are most suitable for agroforestry? Please provide a short answer with an overview table.

Agroforestry is a sustainable land-use system that integrates trees and shrubs into agricultural landscapes. The suitability of areas for agroforestry in Europe depends on various factors, including climate, soil type, and land use practices. Generally, regions with moderate climates, fertile soils, and sufficient rainfall are more suitable for agroforestry.

Here's an overview table of areas in Europe that are typically considered suitable for agroforestry:

Region	Characteristics	Suitability for Agroforestry
Southern Europe	Warm climate, diverse tree species, Mediterranean crops	High
Central Europe	Fertile soils, mixed farming systems, moderate climate	Moderate to High
Northern Europe	Cooler climate, coniferous forests, potential for silvopasture	Moderate
Western Europe	Rich agricultural land, diverse ecosystems	High
Eastern Europe	Varied climate, large agricultural areas	Moderate

These regions can support various agroforestry practices, such as alley cropping, silvopasture, and forest farming, contributing to biodiversity, soil health, and sustainable agricultural production.

- Ref: Soil organic matter management across the EU – best practices, constraints and trade-offs (VITO; 2011).pdf - p.77 - score: 0.470276

- Ref: Soil organic matter management across the EU – best practices, constraints and trade-offs (VITO; 2011).pdf - p.81 - score: 0.460316

- Ref: Soil organic matter management across the EU – best practices, constraints and trade-offs (VITO; 2011).pdf - p.76 - score: 0.458180

- By : GPT-4O Mini (OpenAI) - Prompt: Non experts - Temp: 0.1

Your question

Provide hints and instructions

To close the meeting

www.menti.com code: 1939 3017



SoilWise social media accounts

Website: soilwise-he.eu



Search: SoilWise Project



SoilWise Project



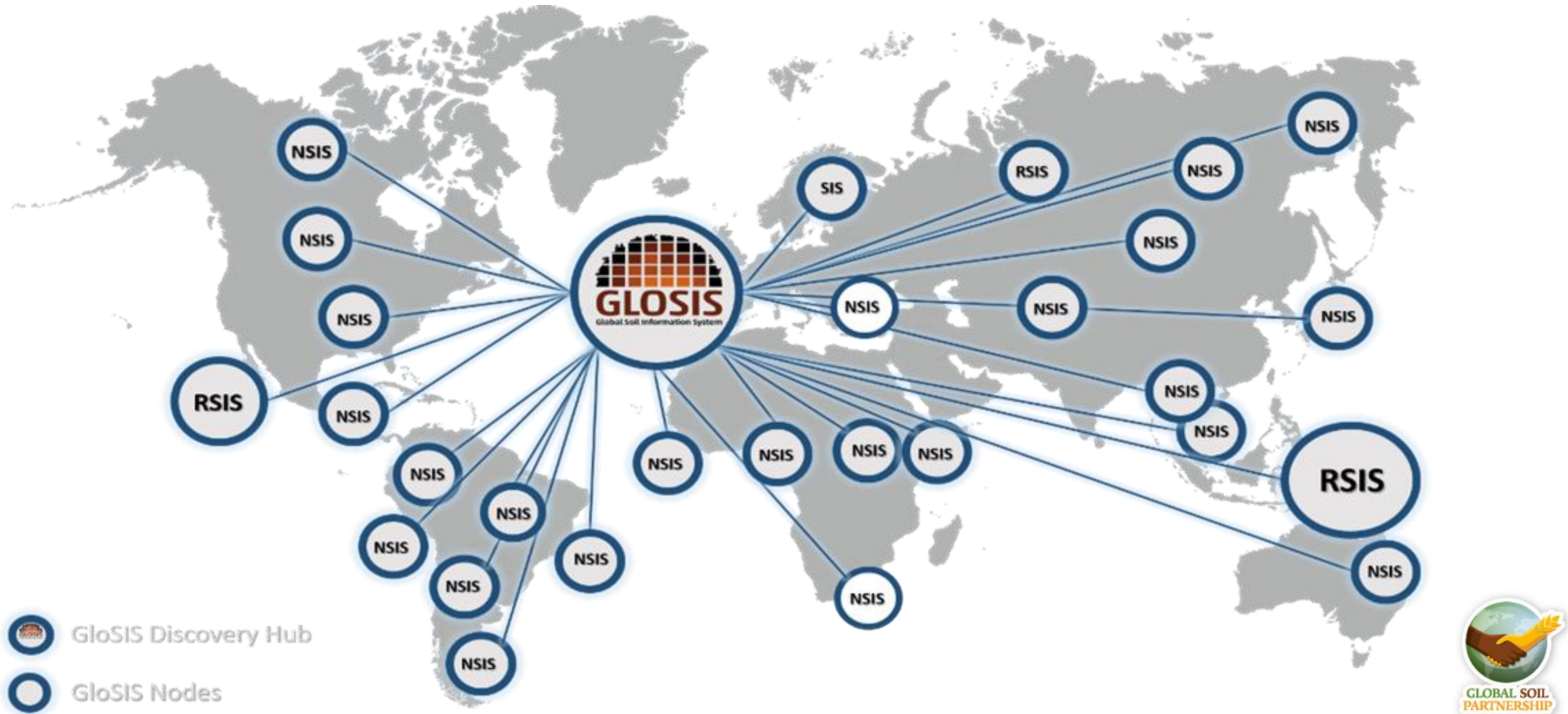
@SoilWiseproject



Thank you so much for
attending!

Time for the Closing Session

Working together, facilitating dedicated national systems



Agenda - Cluster on Data and Knowledge Management (session 2)

14.00-16.30

Cluster on Data and Knowledge Management (session 2): The SoilWise Prototype – A showcase for different users

- Ice-breaker exercise: who is in the room? – Fenny van Egmond (SoilWise)
- Introduction to finding (FAIR) data: the SoilWise repository - Fenny van Egmond and Celine Blitz-Frayret (SoilWise)
 - MRV data question
 - Use case 'An agroforestry story'
 - Future outlook - Soil Companion
- Interactive discussion on enhancing the prototype's usefulness for users and metadata - Fenny van Egmond, Celine Blitz-Frayret, Radu Giurgiu, Tomáš Řezník, Paul van Genuchten, Panos Ilias (SoilWise)

Icebreaker:
Who is in the room?

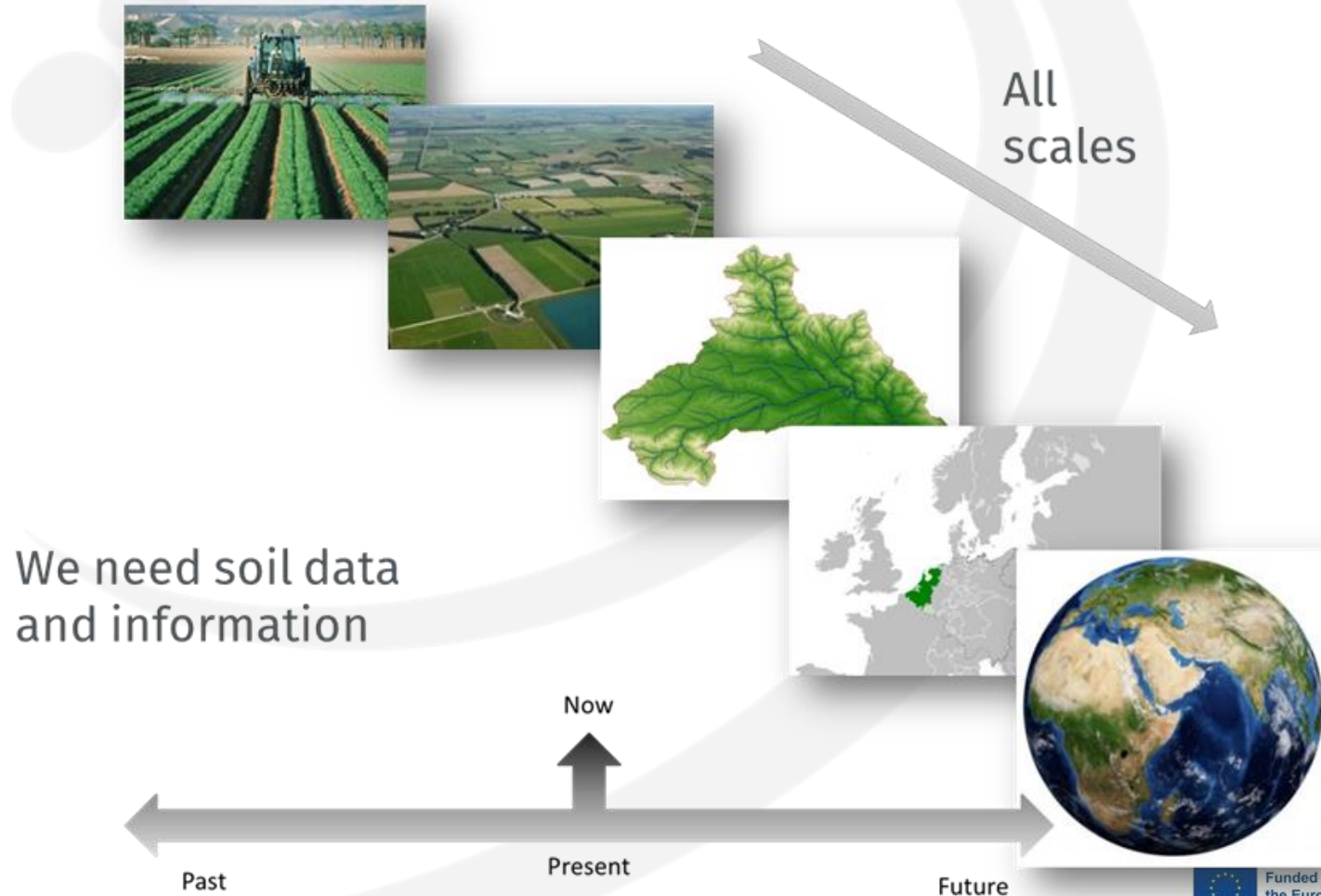
www.menti.com code: 1939 3017



Introduction to finding FAIR data - the SoilWise repository

**Fenny van Egmond ISRIC, Celine Blitz-Frayret CIRAD,
Radu Giurgiu EV-ILVO, Tomáš Řezník MU, Paul van
Genuchten ISRIC and the entire SoilWise team**

Data needs



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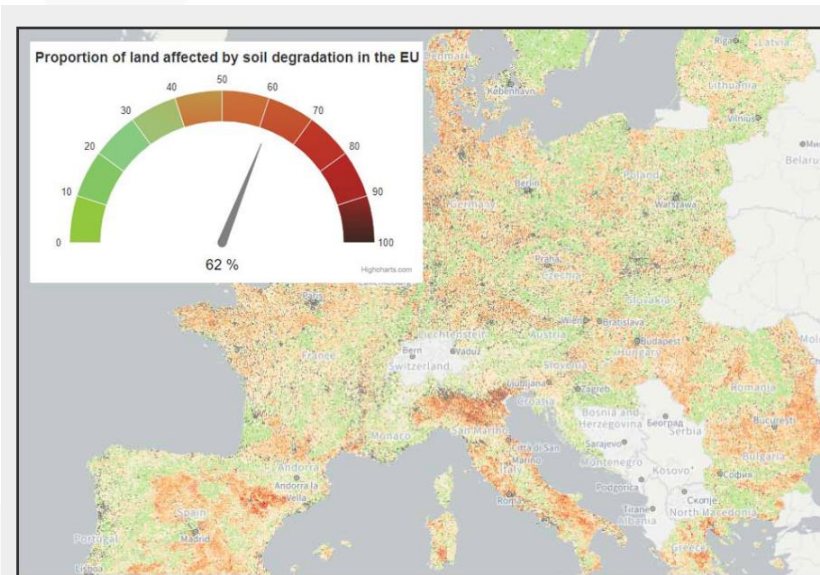
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Why use additional data and knowledge?

The Mission Soil Projects are (also) **data/knowledge users**.

Because:

- ✓ Find data and knowledge to supplement your own
- ✓ Answer more research questions in the same time
- ✓ Answer questions that a single project or expertise cannot by itself : collaboration in Mission Soil Clusters
- ✓ Contribute to the Mission Soil Objectives
- ✓ Have long term impact with improved results
- ✓ Improve Soil health in Europe!



Soil degradation in the EU

Optimal usage scenario

- Find the data
- Access the data at a web address or via a contact point
- Get the data in a harmonized format, structure, methods (interoperability), either automatically or else based on proper metadata
- Reuse the data

Real life

- Try to imagine it is not always easy for data providers to provide easily accessible, usable data soil data & knowledge
- Lack of standardised, accessible data
- Findability challenge
- Fragmentation
- Data reusability
- Inefficiencies



=



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the European Union

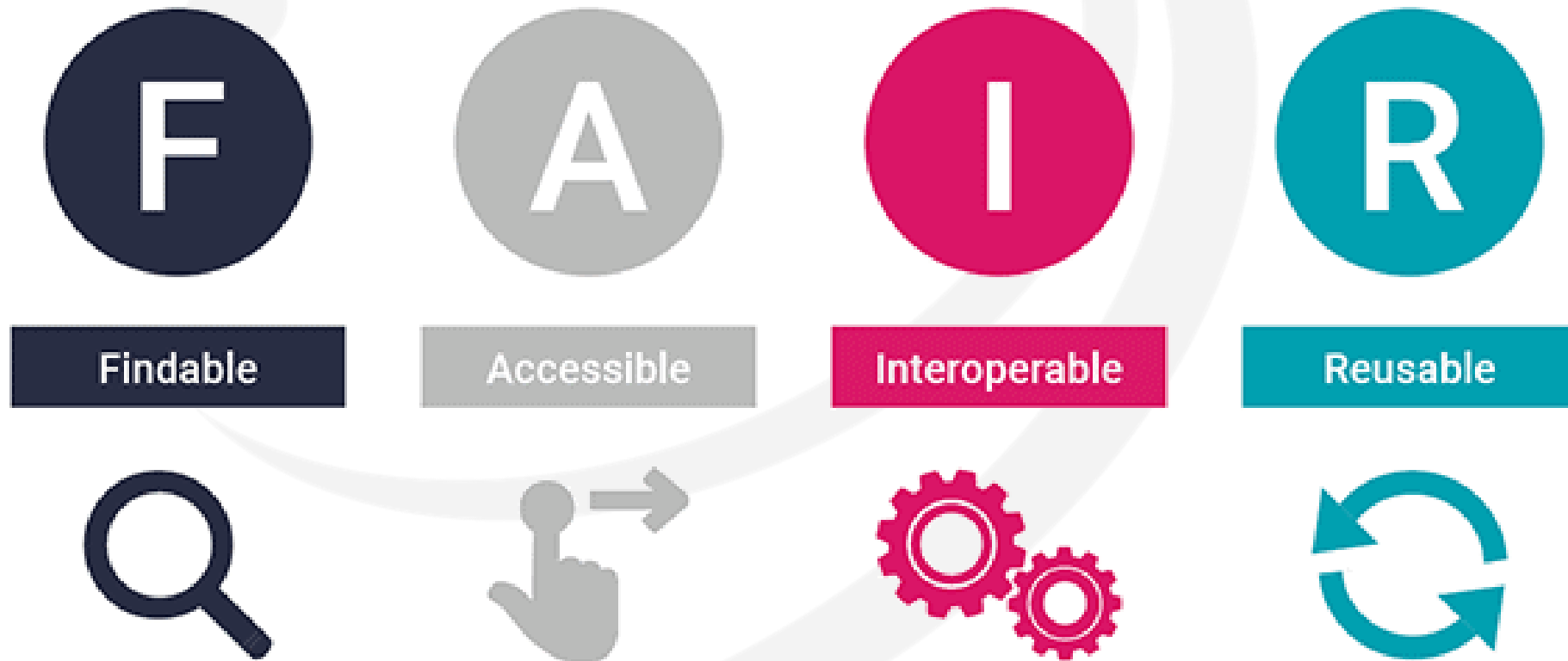
This project has received funding from
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 **SoilWise**
KNOWLEDGE & DATA FLOWS

And why is that a problem?

- Billions of euros are invested in research on the **assumption it is adding to the knowledge base** towards improving soil health
- Research isn't always used or built on beyond the lifetime of funded projects – **research is done over and over again** – wasting time and resources.
- Earlier investments are made **without necessarily requiring good practice or penalizing a lack of good practice** in data management and sharing in the contractual agreements

What is FAIR data?



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Benefits of FAIR data

- Increased efficiency
- Increases innovation
- Cost savings

£10.2B could be saved

EU: Implementing FAIR data principles could save a minimum of £10.2 billion annually by reducing inefficiencies.

0.1-1.5% of GDP in socio-economic benefits

OECD: Data access and sharing can generate socio-economic benefits worth between 0.1% and 1.5% of GDP for public sector data and 1% to 2.5% for private sector data.

\$796.0B investment generated

Human Genome Project: investment in making available well-structured data generated \$796 billion in economic impact and created approximately 310,000 jobs, driving the genomic revolution.



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SoilWise aims to support the EUSO with evidence on soil data and knowledge in Europe

Status quo:

Soil data and knowledge islands with some bridges between them



Foreseen:

soil data and knowledge evidence easily discoverable at one place


A screenshot of the EUSO Soil Degradation Dashboard. The header features the European Commission logo and the title "EUSO Soil Degradation Dashboard" with a "What's New?" button. Below the header is a table with columns: Title, Contributor, Type, and Date. The table lists three datasets: "Interactive effects of microplastics with other environmental drivers in a plant-soil system", "SUSALPS temperature and volumetric soil water content Esterberg Subplot 3 in Esterberg intensiv", and "Bodenübersichtskarte der Bundesrepublik Deutschland 1:5.000.000". To the left of the table is a map of Europe with a blue square highlighting a region in Central Europe. Below the map is a section titled "Physical Soil Parameters" with links to "Soil Texture", "WRB", "Soil Structure", and "Bulk Density". At the bottom, there is a logo for "the European Union" and a text box stating: "This project has received funding from the Horizon Europe research and innovation programme under Grant Agreement No 101112838". To the right of this text is the "SoilWise" logo with the tagline "KNOWLEDGE & DATA FLOWS".

Which type of stakeholder are you?


Land managers
(including Farmers)


Policy makers
& Authorities

Mission Soil
Cluster Data

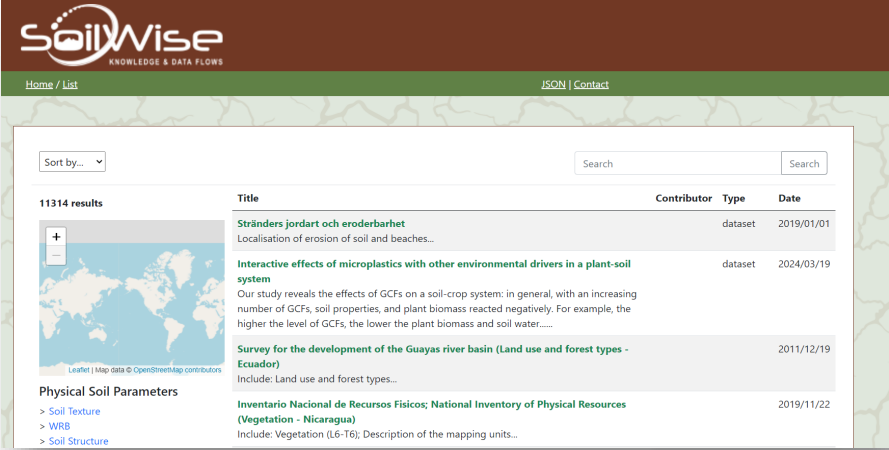

Scientific community
Researchers


Financial / Business
& Industry partners


R&I Networks


General audience
(consumers, students).

But also:



SoilWise
KNOWLEDGE & DATA FLOWS

Home / List JSON | Contact

Sort by... Search Search

11314 results

Title	Contributor	Type	Date
Stränders jordart och eroderbarhet Localisation of erosion of soil and beaches...		dataset	2019/01/01
Interactive effects of microplastics with other environmental drivers in a plant-soil system Our study reveals the effects of GCFs on a soil-crop system: in general, with an increasing number of GCFs, soil properties, and plant biomass reacted negatively. For example, the higher the level of GCFs, the lower the plant biomass and soil water.....		dataset	2024/03/19
Survey for the development of the Guayas river basin (Land use and forest types - Ecuador) Include: Land use and forest types...			2011/12/19
Inventario Nacional de Recursos Fisicos; National Inventory of Physical Resources (Vegetation - Nicaragua) Include: Vegetation (L6-T6); Description of the mapping units...			2019/11/22

Physical Soil Parameters
> Soil Texture
> WRB
> Soil Structure

Data provider

Data user

- End-users with specific needs within the projects already running
- As researchers with future needs
- As projects that will come after, representing the research community at large



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Main message

To develop a useful and functional Soil Data and Knowledge Infrastructure, the **collaboration efforts (and benefits from the outcomes) need to be mutual for all involved stakeholders** (EUSO and Mission Soil Horizon projects' end-users included)



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What is in it for you?


- **One place** to look for knowledge and data about soil
- Improved **search, standardisation and findability** of information about soil, FAIR
- By providing **feedback** you help us create a **platform that fits your needs** as a data provider and/or a data user
- This platform can **help you in your every-day work** whenever you need to use soil information
- This platform can **facilitate collaboration** between organisations, networks, people



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Current PROOF OF CONCEPT main frontend – Metadata Catalogue




[Home](#) / [List](#)[JSON](#) | [Contact](#)

Sort by... ▾

11314 results

+

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Leaflet | Map data © OpenStreetMap contributors

Physical Soil Parameters

[> Soil Texture](#)
[> WRB](#)
[> Soil Structure](#)

Title	Contributor	Type	Date
Stränders jordart och eroderbarhet Localisation of erosion of soil and beaches...		dataset	2019/01/01
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Survey for the development of the Guayas r... Ecuador) Include: Land use and forest types...			2011/12/19
(Vegetation - Nicaragua) Include: Vegetation (L6-T6); Description of the mapping uni...			

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Development since April 2024



Foreseen SoilWise Repository Endpoints

Catalogue

Oai-pmh
CSW
STAC
Opensearch

For soil data users

QGIS

Metasearch plugin

For data scientists/coders

RDF

SPARQL
DC & SKOS

Chatbot

prompt

Still in development



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A single discovery experience

Requires:

- Mechanisms to import from various sources
- Harmonize metadata models
- Clustering of sources (filters)
- Ranking mechanisms (which source is more relevant)
- Maintain (or establish) linkage between sources
- Establish trustworthiness

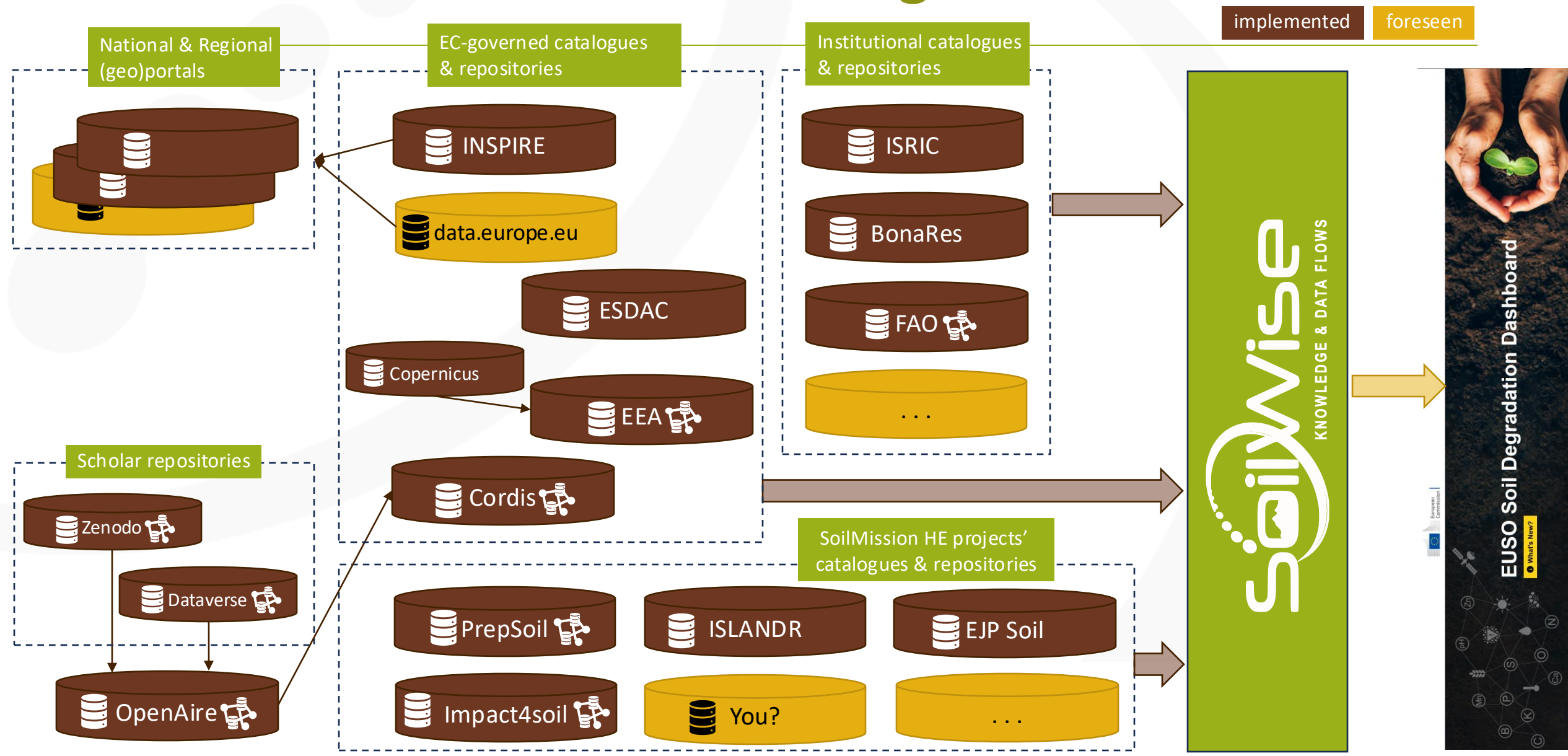
How can we do better than a generic search engine?



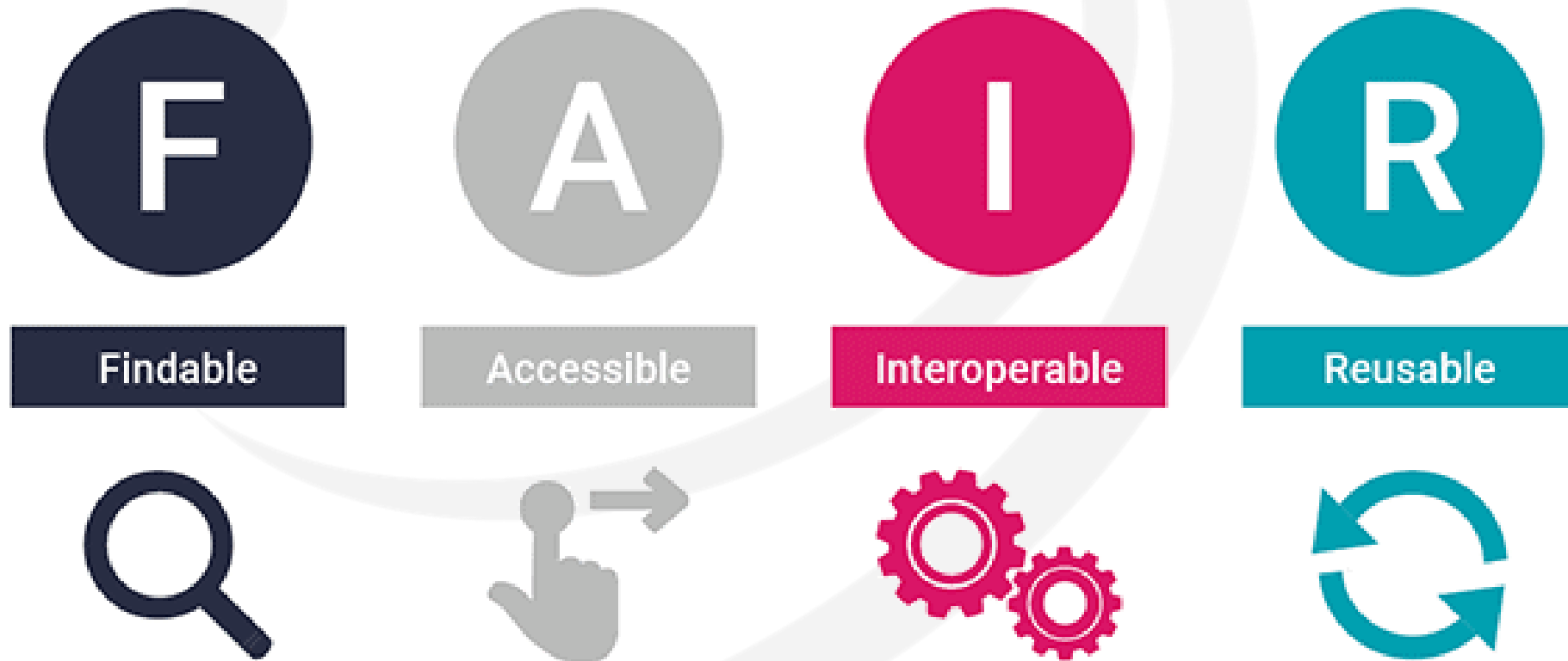
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We collate from the following sources at least:



How can you judge if data is suitable for your purpose?



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F Findable: Discover existing data



Findable



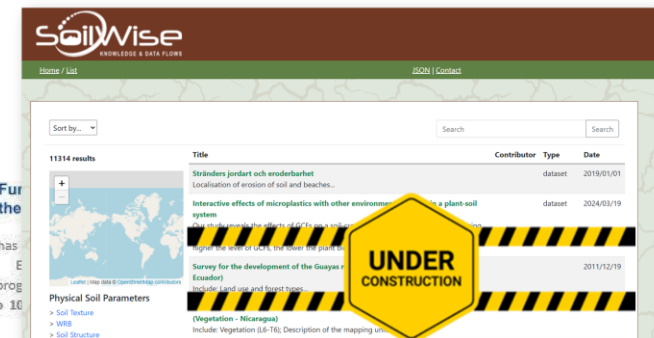
Clear links to project and other soil related sources

Step 1 is to find what is already existing, e.g. through an easily searchable catalogue, as complete as possible on the domain.

SoilWise/EUSO will allow to find, assign and provide project and other soil domain results to users, including credits.



This project has the Horizon E innovation prog Agreement No. 10



A Accessible: Can I use the data or are there access restrictions?



Accessible



Check the access conditions (Access rights)

Step 2 is to see if the data can be used by you/for your purpose.

registration needed

restricted

no conditions apply

SoilWise/EUSO requires a license to be indicated, and is looking into controlled access mechanisms

CC-BY 4.0 license



Use open access when possible, or ask owner for access

I Interoperable: Can I compile different datasets easily into one?



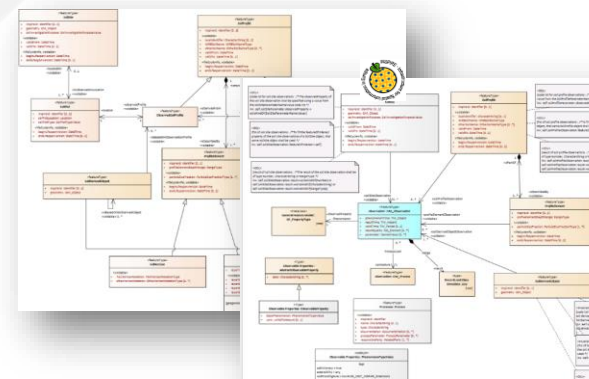
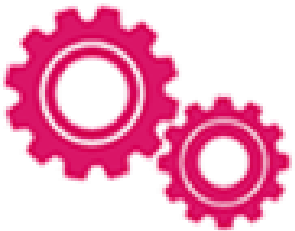
Apply my or a common data model

Step 3 is to understand if the data is organized in a similar way, if different datasets can easily be combined, or if transformations are needed.

SoilWise/EUSO aims to point to standard data models for providers and facilitate easy tooling for transformation of data to the extent possible



Interoperable



R Reusable: Is it clear what is in the data?



Reusable



Clearly described datasets, using metadata

Step 4 is to understand what is in the data, how have they been collected, are they usable for another purpose

SoilWise/EUSO aims to harmonise metadata structure, perform checks on the completeness of metadata and augment if possible

Broken links

Synonyms

Duplicates

Context derived
additional metadata

Empty fields