D7.1 Project Management Handbook

PROJECT NAME – SoilWise

Project Number 101112838

Acronym	SoilWise
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Abstract	Project management structure, quality assurance and risk management procedures, GDPR management, Gender Balance, Legal and Ethical Issues.

Disclaimer

List of Abbreviations

CA	Consortium Agreement
CR	Change Request
DL	Deliverable Leader
DoA	Description of the Action
EB	Executive Board
EC	European Commission
EU	European Union
GA	Grant Agreement
KPI	Key Performance Indicator
KR	Key Results
PC	Project Coordinator
QA	Quality Assurance
QAP	Quality Assurance Plan
SC	Scientific Coordinator
SO	Specific Objectives
TBD	To Be Determined
TM	Technical Manager
UCs	Use Cases
ToC	Table of Content
TLs	Task Leaders
WBS	Work Breakdown Structure
WP	Work Package
WPL	Work Package Leader

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Abstract

The purpose of the deliverable **Project Management Handbook**, which is essentially the Quality Assurance Plan (QAP) of the SoilWise project, is to provide a single point of reference on the quality that will be governed during the course of the project. The deliverable at hand defines the project organisation, roles and responsibilities with emphasis on the **quality control and quality assurance** activities that will be carried out. It describes how the project will execute its day-to-day activities from a quality perspective, and ensures that standards, processes, and procedures are defined so that their execution is continuously monitored and improved. This deliverable defines all the necessary mechanisms and structures for the **management and administrative coordination** of the project with emphasis on the governance, change management, communication plan, project calendar, stages, milestones, and reporting roles and responsibilities for all the partners is also made considering also GDPR management, Gender balance issues and Legal and ethical issues.

1 Introduction

1.1 Project Summary

More than ever, soil health is an issue, as recent assessments state that 60-70% of European soils can be considered unhealthy. The Soil Deal for Europe aims to have 75% of EU soils healthy or significantly improved by 2030. Reaching such an ambition requires, among others, access to reliable, harmonised existing and new data and knowledge collected at local, national and EU levels to allow **informed decision-making at all scales to support the Soil Health Law and the EU Soil Strategy**. 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.** The SoilWise repository and community are designed to be a joint starting point and common ground for countries, the European Commission and other stakeholders to jointly guide soil and related spatial policy and informed decision-making towards the 2030 goals of the Green Deal, achieve healthy soils in 2050 and ensure broad uptake and implementation by land managers, policy, research and industry.

1.2 Document Scope

The purpose of this deliverable is to provide a single point of reference on the management and quality that will be governed during the course of the project. It defines the project organisation, roles and responsibilities with emphasis on the quality control and quality assurance activities that will be carried out considering also GDPR management, Gender balance issues and Legal and ethical issues. It describes how the project will execute its day-to-day activities from a quality perspective, and ensures that standards, processes, and procedures are defined and their execution is continuously monitored and improved. A reference to all the necessary mechanisms and structures for the management and administrative coordination of the project capitalising on the governance, change management, communication plan, project calendar, stages, milestones, and reporting roles and responsibilities for all the partners is also made.

1.3 Document Structure

This document is comprised of the following chapters:

Chapter 1 presents an introduction to the project and the document.

Chapter 2 Error! Reference source not found. offers further project information, to provide the context for this document.

Chapter 3 explains the overall strategy and approach towards managing the project including the management structure, partner roles and responsibilities, procedures, baselines, milestones and indicators.

Chapter 4 establishes the baseline performance of SoilWise in terms of schedule, resources, cost and overall quality.

Chapter 5 presents the quality management approach of SoilWise in terms of its expected deliverables.

Chapter 6 presents the way the project will handle changes to the established plans and baselines.

Chapter 7 presents the communication flows, instruments and guidelines to the project.

Chapter 8 describes in brief the way the coordination team intends to manage costs and efforts. The two are placed in the same procedure as they are closely linked.

Chapter 9 sets the policy for procurement in the project.

Chapter 10 explains in brief the process of managing project scope.

Chapter 11 outlines the management of project schedule.

Chapter 12 documents the processes and techniques for the evaluation and control of potential project risks, focusing on their precautionary diagnosis and handling.

Chapter 13 provides SoilWise approach on GDPR management.

Chapter 14 analyses SoilWise Gender balance policy.

Chapter 15 address Legal and Ethical issues.

2 Project Context and Workplan

2.1 Project Scope and key objectives

The overall objective of SoilWise project is to make existing and new knowledge and data on soils easily findable, accessible, interoperable and reusable in a long-term knowledge and data repository powered by strategies for soil data and knowledge collection, processing, visualisation and exploitation, following a multi-actor co-design and co-validation processes with all key user groups and R&I (Research and Innovation) outcomes.

It will be achieved through the **Key Objectives (KOs)** presented in Table 1.

Table 1. Results & means of verification of the SoilWise objectives and relation to the topic and its outcomes and impacts.

KO#1: To develop and test a prototype for a knowledge and data SWR (SoilWise repository).

A prototype of an open, modular, scalable and extensible knowledge and data repository will provide a unique access point to soil information, integrating, so far, split activities from R&I projects' achievements, existing repositories, institutes, user/standardization groups and others. The modular and iterative approach with 3 development cycles, will allow us to work with, improve and connect existing open-source software of sufficient TRL with relevant data and knowledge. The repository's functionality will be co-defined, co-developed and co-tested with a wide range of stakeholder groups, including researchers, land managers, governmental institutions, decision-makers, EUSO, etc. Linked WP/tasks: All WPs.

KPIs:

- SWR co-created and co-validated in 5 cross-scale use cases covering the all 6 SoilWise target groups, comprising national and EU government levels, land managers, research, agri-business and others. User cases include in total ≥ 35 users and data providers from 3 or more countries
- Count of SoilWise open services to support FAIR principles on the data and knowledge level > 10

Relation to the topic: *Develop and test a prototype for a long-term knowledge and data repository, taking due account of the requirements emerging from the evolvement of the EUSO."*

Linked expected outcomes: all

KO#2: To provide enhanced stakeholder-driven access through DM (Data Management) tools, profiting from a wide range of interfaces, continuous delivery and increased user experience.

The SWR will provide stakeholder-driven DM tools (WP2) to find and access the data assets through standardized interfaces, co-created and co-validated with stakeholder groups (WP5/T5.1, T5.2, T5.3). A SoilWise catalogue will be the main entry point to all the discovered data assets. Data will be persistently identified and interlinked within the SWR to increase its

accessibility, transparency and traceability. Data assets will be regularly validated through an ETS[1] (Executable Test Suite; WP4/T4.3). Data access and usage control will setup mechanisms following Data spaces approaches.

KPIs:

- Ratio of data access control and usage monitoring = 100% (cover all data resources)
- Ratio of interlinked data assets in the SWR ≥ 90%
- Number of ETS-based dataset validation cycles ≥ 6

Relation to the topic: *"**Enhanced access** to soil relevant knowledge and data including the **outcomes from R&I activities** for a wide range of stakeholders."*

Linked expected outcome: EO2

KO#3: To develop and test a KM component, its workflows and support the integration, access and (re)use of actionable knowledge on soil health.

Develop and test stakeholder-driven (WP5) KM component (WP3) to register, link and curate existing and evolving knowledge (e.g. case studies covering different soil types and environments, good practices for data (re)use, key R&I knowledge products). In parallel, develop and test mechanisms to automatically index and link knowledge sources, using semantics and AI/ML to efficiently index valuable knowledge resources that are currently not easily findable. Developing KM governance, processes and strategy with stakeholder groups to moderate, maintain and assure long-term quality, and to sustainably embed in an operational environment (EUSO, Soil Mission, WP1/T1.2, 1.5) to support the EU Soil Strategy and a Soil Deal for Europe.

KPIs:

- No of knowledge assets linked and FAIRified > 500
- No of R&I knowledge sources and repositories connected through KM workflows ≥ 10
- No of target groups served with actionable knowledge ≥ 5

Relation to the topic: *"Enhanced capacities for mission implementation and use of mission results through **efficient knowledge management**."*

Linked expected outcome: EO1

KO#4: To support the population of the SWR by facilitating data and knowledge harmonization.

The available data and knowledge will be gathered and harmonized (T2.2, T3.2, T4.1) on syntactic and semantic levels following the INSPIRE and Data Space code lists/ontologies and good practices to become interoperable and reusable for the EUSO and valuable and actionable for other stakeholders and uses. We will build on/align with existing workflows of different (levels of) technical origins as possible to support engagement and sustainability. Data and knowledge

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[1] Is an open source testing framework for validating spatial data, metadata and web services in Spatial Data Infrastructures

will be imported, formalized and offered to the specified stakeholder groups (WP1, WP5). Both data and knowledge will be annotated with metadata, adopted from the existing resources and following standards as much as possible.

KPIs:

- No of external geoportals/hubs/R&I project repositories/data spaces/SoilMission projects> 70
- No of interoperable datasets on soil health available through the SWR ≥ 20
- No of developed data harmonization workflows between an existing initiative and SoilWise > 10

Relation to the topic: *"The EU Soil Observatory (EUSO) is populated with comprehensive, interoperable datasets and information on soil health."*

Linked expected outcome: EO4

KO#5: To support solutions on the status and health of soils for land managers and other stakeholders to take more informed soil management decisions.

We will provide added value to stakeholder groups (WP5, WP4) by testing in a range of use cases, for different soil types and environments, the adequacy of connected knowledge and data, and by testing easy discovery, querying and extraction of (meta)data for simple calculations (e.g. indicators, factors, change), ML analysis (e.g. digital soil mapping) and advanced applications like MRV modelling (requiring e.g. in situ data, EO/Copernicus, LTE (Long-Term Field Experiments), successful measures per soil scape/land use), carbon farming, ecosystem services, (LULUCF (Land Use, Land-Use Change and Forestry) and CAP (Common Agricultural)) reporting, verification, policy evaluation, (precision) agriculture, sustainable soil management, and scenario modelling (e.g. climate, land use change, impact of policy, hydrological, soil crop, food security, etc.).

KPIs:

- User cases successfully discovering & accessing most suitable data/knowledge through SWR ≥ 4
- No of User cases successfully using SWR data for simple calculations ≥ 4
- 5 User cases, projects, stakeholders describe and quantify added value of using the SWR

Relation to the topic: *"Land managers and other actors are able to take more informed soil management decisions and have improved access to knowledge on soils, drivers of soil health and land degradation as well as solutions to improve the status of soils."*

Linked expected outcome: EO3

KO#6: To discover and verify the potential for new (business) opportunities from improved access and reuse of knowledge and data and added functionality in the repository.

SoilWise will maximize impact of high-quality soil data through making it re-useable for commercial organizations. To achieve this, SoilWise will work (WP6) with a large and persistent multi-stakeholder community to identify critical problems and the respective data access gaps. After co-creation of these cases, we will verify costs, benefits, risks and added value, as well as the economic and societal potential of soil data and knowledge through jointly developed

innovative demonstrators. Finally, we scale the demonstrations and define a post-project business model for the repository and its stakeholders (providers and consumers).

KPIs:

- Number of soil data start-up business cases created (e.g. in agriculture or land management, etc.) ≥10
- Combined annual value of identified data access gaps > 100M€
- Ratio of relevant gap data sets made accessible for new business models with clearly defined conditions that allow balanced value capture for data providers, data users, repository operators and other stakeholders > 30%

Relation to the topic: *"Increased potential for **new business opportunities** from products, technologies and services **derived from improved access** to valuable soil datasets and from their **reuse**."*

Linked expected outcome: EO5

KO#7: Maximize the impact of activities through user group engagement by well-defined C&D (Communication and Dissemination) activities, an IPR management approach and a robust sustainability strategy.

Active and sustained engagement of the stakeholder or user groups (data providers and users, T1.2, T6.1, T6.2) will be achieved by involving relevant groups, initiatives, networks, institutes and projects from the start and by extensive, tailored C&D with each relevant stakeholder group. Such a step will be coupled with innovation and IPR (Intellectual Property Rights) Management, which, together with a well-defined short-, mid- and long-term sustainability strategy, will support the dissemination and communication of the developed innovative tools and solutions also post-project.

KPIs:

- No of unique visitors of the SoilWise website/Repository ≥ 10.000; Followers on social media ≥ 1.000
- Articles in local, national, regional, EU media (printed or online) ≥ 50

Relation to the topic: not explicitly mentioned

Linked expected outcomes: all

2.2   Milestones

The identified project milestones are presented in the table below. The complete and always up-to-date milestone table is provided within section "List of milestones" of the DoA.

Milesto ne No	Milestone Name	Work Pachage No	Lead Benefii ary	Means of Verification
1	End of Co-Design Phase at 1st development cycle	WP1	ISRIC	D1.1
2	End of the Development phase of Cycle 1	WP3, wP2, WP4	WR	D2.1 D3.1 D4.1
3	End of integration and validation phase at 1st development cycle	WP3, WP2, WP4	WE	D2.2 D3.2 D4.2
4	End of demonstration phase at 1st development cycle	WP5, WP4	EV ILVO	D5.3 D4.5 D1.5
5	Delivery of strategy for FAIRness and KM v1	WP3, WP2	MU	D2.4 D3.5
6	End of integration & validation phase at cycle 2	WP3, WP2, WP4	WE	D2.3 D3.3 D4.3
7	Final delivery of requirements	WP2	ISRIC	D1.2
8	Delivery of SoilWise architecture, governance and strategy	WP3, WP2, WP1	MU	D2.6 D3.6 D1.4 D1.6
9	End of final development cycle	WP3, WP5, WP2, WP4	EV ILVO	D2.4 D3.4 D4.7 D5.5
10	Delivery of SoilWise repository, best practices and business models	WP5, WP6, WP4	BIOS	D4.4 D5.6 D6.5

Table 2 List of milestones

2.3   Work Package Structure

A detailed work package structure is presented in Annex 1 of the Grant Agreement within section 3.1 "Work plan and resources" and more specifically under section 3.1.1 "Overall structure of the work plan" of the DoA. An overview of the SoilWise Work Plan Structure is presented in figure 2.

Figure 1. WP structure and interrelations between the different work components

2.4 Deliverables

A detailed deliverable list is presented in the table below. The official and always up-to-date list is presented in Annex 1 of the GA within section "List of Deliverables" of the DoA.

A/A	Deliverable Code	Deliverable Title	Lead Beneficiary	Type	DL	Due Project Month
1	D1.1	Usage Scenarios, Requirements, v1	ISRIC	R	PU	6
2	D1.2	Usage Scenarios, Requirements, v2	ISRIC	R	PU	**36**
3	D1.3	Repository architecture, v1	MU	OTHER	PU	8
4	D1.4	Repository architecture, v2	MU	OTHER	PU	42
5	D1.5	Repository GM, v1	EV ILVO	R	PU	21
6	D1.6	Repository GM, v2	EV ILVO	R	PU	42
7	D2.1	Developed & Integrated DM components, v1	MU	OTHER	PU	13
8	D2.2	Developed & Integrated DM components, v2	MU	OTHER	PU	18
9	D2.3	Developed & Integrated DM components, v3	MU	OTHER	PU	31
10	D2.4	Developed & integrated DM components, v4	MU	OTHER	PU	46
11	D2.5	Report on strategy for FAIRness on soil data, v1	MU	R	PU	27

12	D2.6	Report on strategy for FAIRness on soil data, v2	MU	R	PU	42
13	D3.1	Developed & Integrated KM components, v1	WR	OTHER	PU	13
14	D3.2	Developed & Integrated KM components, v2	WR	OTHER	PU	18
15	D3.3	Developed & Integrated KM components, v3	WR	OTHER	PU	31
16	D3.4	Developed & integrated KM components, v4	WR	OTHER	PU	46
17	D3.5	Report on strategy for effective soil KM, v1	WR	R	PU	27
18	D3.6	Report on strategy for effective soil KM, v2	WR	R	PU	42
19	D4.1	Repository infrastructure, components and APIs, v1	WE	DEM	PU	13
20	**D4.2**	**Repository infrastructure, components and APIs, v2**	**WE**	**DEM**	**PU**	**18**
21	D4.3	Repository infrastructure, components and APIs, v3	WE	DEM	PU	31
22	D4.4	Repository infrastructure, components and APIs, v4	WE	DEM	PU	47
23	D4.5	Repository Data and Knowledge Resources, v1	EV ILVO	DATA	SEN	21
24	D4.6	Repository Data and Knowledge Resources, v2	EV ILVO	DATA	SEN	34
25	D4.7	Repository Data and Knowledge Resources, v3	EV ILVO	DATA	SEN	46
26	D5.1	User cases guidelines and demonstration plans, v1	EV ILVO	R	PU	12
27	D5.2	User cases guidelines and demonstration plans, v2	EV ILVO	R	PU	24
28	D5.3	Deployment and Evaluation Report, v1	EV ILVO	R	PU	21
29	D5.4	Deployment and Evaluation Report, v2	EV ILVO	R	PU	34
30	D5.5	Deployment and Evaluation Report, v3	EV ILVO	R	PU	46
31	D5.6	Usage best practices and replication guidelines	EV ILVO	R	PU	47
32	D6.1	Project Web Site	BIOS	DEC	PU	3
33	D6.2	DEC and Capacity Building Plan and Report, v1	BIOS	R	PU	3
34	D6.3	DEC and Capacity Building Plan and Report, v2	BIOS	R	PU	18
35	D6.4	DEC and Capacity Building Plan and Report, v3	BIOS	R	PU	**48**
36	D6.5	IPR and Business Model Report, v1	BIOS	R	PU	24

37	D6.6	IPR and Business Model Report, v2	BIOS	DEC	PU	47
38	D7.1	Project Management handbook	EV ILVO	R	PU	1
39	D7.2	Open Science and Data Management Plan, v1	MU	DMP	PU	6
40	D7.3	Open Science and Data Management Plan, v2	MU	DMP	PU	27
41	D7.4	Open Science and Data Management Plan, v3	MU	DMP	PU	**48**

Table 3. List of deliverables

2.5 Results, target groups an Outcomes

Specific Needs (SN#) To:	Expected Results (R#SN#)
SN1: Improved access to and integrated (re)use of soil data and knowledge from the Soil Mission and the broader EU data ecosystem through an interoperable data and knowledge repository, supporting land managers and other stakeholders in improving soil management & soil health. **SN2:** Development of Soil KM processes at the organization level and for different target groups, to support a holistic understanding of soil health challenges and potential solutions. **SN3:** Interoperability standards and guidelines for creating workflows allowing the embedding and/or linking of EU-wide data & knowledge resources, infrastructures and services. **SN4:** A structure, trustfulness and secure Soil knowledge and dataspace, where all actors can exchange information and data and develop solutions for soil health. **SN5:** Tailored governance models and collaborations for the long-term embedding of FAIR soil data & knowledge, especially those evolving from the Soil Mission, in EC services and EU-wide science and soil monitoring programmes. **SN6:** Establishing a collaborative, co-developing network of stakeholders (land managers, industries, consumers and society at large) that are effectively contributing to and (re)using actionable, interoperable and harmonized data and knowledge to improve soil health across sectors. **SN7:** Offering potential for business opportunities for soil management and health improvement, driven by high-quality data & knowledge.	**R1.1: SWR (SoilWise Repository) usage scenarios** co-created by all target groups within an extended network of stakeholders. **R1.2.** Co-created **SWR architecture model** for interoperability and trust, considering EUSO requirements. **R1.3 SWR governance model** aiming at EU Soil Knowledge and data space. **R2.1 SWR-Catalogue** follows the FAIR Principles and interlink and validate data sets**,** including R&I data, providing AI/ML-based personalised answers. **R2.2 SWR-DM (data management) component** for data harmonization, quality and transparency. **R2.3 SWR-DM strategy & methodology** for data collection, processing, visualisation and exploitation. **R3.1 SWR-KM component** for knowledge integration of currently fragmented, poorly indexed R&I knowledge on soil/soil health. **R3.2 SWR-KM strategy** for the new knowledge and deep understanding, supporting EUSO, Soil Mission and EU Soil Strategy & Deal for Europe. **R3.3**. **SWR KM AI/ML** to support Findability(AIRness). **R.4.1 SWR data access and usage control** mechanism for trustful and secure Soil Data Spaces. **R4.2 SWR UI and APIs** allow user-friendly access, population and repository integration with EUSO. **R4.3** An open-source, co-developed, operated in the cloud, allowing storage of different types of data (structural, nonstructural and EO) <u>Missions Knowledge and Data Repository prototype (SWR),</u> with all its components. **R4.4 A populated SWR** with harmonized content for target groups connected with other infrastructures (>70). **R5.1. 5 Successful PoV User Cases,** showing how different TG (Land Managers, Researchers, business, public authorities, policymakers) in Europe can capitalize and exploit SWR content and services. **R5.2 5 SWR-based solutions** for soil health, land degradation, data access, R&I data exploitation, harmonization, reporting and soil monitoring. **R5.3 SWR-Guidelines** to support experience gained, lessons learnt and from the user cases actors. **R6.1** An engaged **SWR network of users and stakeholders** covers all TG. **R6.2 SWR business model** supporting new business opportunities and long-term operation.

Target Groups (TG#)	Outcomes (EO#)
TG1. Land managers, including (farmers & farming associations, institutional and private land owners, regional & local governments). Contributing & Re(using) data and knowledge to combine with local/private sources to improve land management concerning soil health. **TG2. Policy Makers and authorities** at European, national and local levels (EC, primarily JRC, DG Agri, European Parliament, agricultural authorities related to CAP, Ministries, Soil Health experts, etc) aimed at improving soil health. Reusing knowledge on soil health to define effective policy and regulations. **TG3. Scientific community,** including Universities, Research & Technology organisations, corporate Researchers, works on soil Mission objectives, Data Scientists, data publishers and disseminators of soil knowledge Re(users) of soil data & knowledge. **TG4. AgriFood Industry and business community,** also performing research, exploiting available data and knowledge to develop new products and services, acting as technology developers or digital technology operators, and investors and other financial support services. **TG5. Research & Innovation networks,** projects and initiatives, such as the EIP AGRI, Horizon 2020 and HE projects & thematic networks such as GSP or INSPIRE. **TG6. General audience**, including schools, consumers and other social actors that does not belong to the categories above and their primary interest, does not have to be linked with SoilWise.	**EO1:** Increase knowledge exchange activities between **Soil Mission Living Labs**/existing LLs (>20%). No of **Research Institutes** can perform Knowledge sharing and innovation activities (>70). No of **Infrastructures & platforms** for experimentation (LTE) provide data and knowledge on solutions for soil management (>35). **AKIS Networks** and **communities of practices** have the ability to adopt knowledge management practices. **Public authorities** are sharing open data & knowledge to support Soil Mission implementation (>27). **EO2:** Available data and knowledge resources coming from **Research Institutes (**inc.>30%). **Governmental organizations and authorities** share soil-related data and knowledge & interlink resources (**inc.>15%). No of **Infrastructures & platforms** (LTE) inter-connected and share data & knowledge on solutions for soil management in a trusted and secure way within the Soil Data Space (>35). **EO3:** New solutions (>30) covering **Land managers** need for soil monitoring and management. No of **Landowners' associations** throughout Europe informed & have access to soil-related knowledge and solutions & LTE data (>30). No of New technological advancements cover identified **Land Managers'** needs described in the SoilWise Knowledge and Data Management strategies (>15). **EO4:** Willingness of **R&I projects** to interlink or upload their results to EUSO (inr.>40%). Increased number of **EUSO** visitors & providers including geoportals/hubs/ repositories sharing interoperable datasets on soil health (inc>30%). **EO5:** Innovative Governance & business models support decentralization and knowledge sharing between **Researchers & Industry** (>5). **Start-up business cases** created on soil pollution and restoration. No of est practices and **tech solutions** developed for carbon farming (>20) & supporting MRV systems (>30).

3 Project Management Approach

3.1 Overall Management Strategy

The SoilWise project management description is found in the Description of the Action (DoA), Annex 1 of the Grant Agreement (GA), as part of the contract with the European Commission (EC), along with the project scope and baselines. The Consortium Agreement is based on the contract with the European Commission and is another legal instrument establishing the fundamental rights and obligations in the relationships between partners. All other parts of project management rely on these two.

Quality and risk management permeate all activities of the project and act as safeguards. Quality is assured and risks are assessed for both project products and project management practices. All activities end with the communication of decisions, changes and actions to consortium members and the EC. These are the activities that bound project management for SoilWise as it is shown in the figure below.
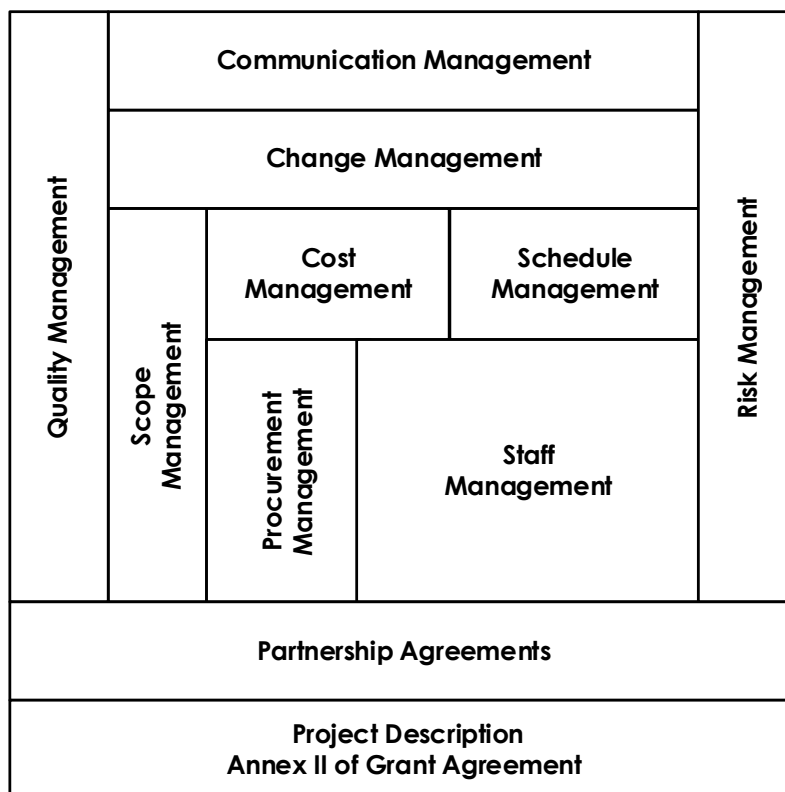
Figure 2 – Project management architecture

The core activities to ensure the project stays on track are the scope, cost and schedule management. They keep the project in line with what the Annex 1 of the GA prescribes that the project should do, cost and how long it should take to accomplish its objectives respectively. Procurement management describes how to handle purchases needed to execute the project at a partner level, while staff management defines the needs in terms of people, their roles and who is going to fill those roles in terms of their expertise. The core activities of project management lead to decisions and changes in both the work of the project and its management, but cannot impose practices or plans on the partners without their approval. Core activities are managed through change management, which

feeds into <u>communications management</u> ensuring that information reaches all appropriate audiences. <u>Quality management</u> contributes in establishing the relevant to the project quality control and quality assurance activities for ensuring an efficient collaboration among the consortium partners and delivery of project results; whereas the <u>risk management</u> is necessary for providing the process and techniques for the evaluation and control of potential project risks, focusing on their precautionary diagnosis and handling.

3.2   Project Management Structure / Approach

Overall, project management encompasses operational, technical, financial and administrative co-ordination as well as the supervision of various activities within the project. To manage a project of the size and complexity of SoilWise, a professional and flexible management structure is vital. Transparent decision-making processes are required to both encourage project development and foster confidence amongst the project consortium. Conflict management should be focused on prevention and be apparent from project commencement. Contingency plans have to be derived. Clear and pragmatic decision-making and communication pathways and prompt reporting mechanisms are necessary. <u>For this reason, each consortium partner will nominate a Management Representative (often referred to as a partner project manager or primary contact).</u> If necessary, one person can fulfil more than one role. Furthermore, the Project Coordinator (EV ILVO) will be responsible for the coordination of the project and leading its QA activities, in the framework of WP7. <u>The Project Coordinator is the legal entity acting as the intermediary between the Parties and the Funding Authority</u>. <u>The Project Coordinator shall, in addition to its responsibilities as a Party, perform the tasks assigned to it as described in the Grant Agreement and this Consortium Agreement.</u>

To tackle its coordination and technical goals, SoilWise is organized in 7 Work Packages (WPs). WPs are further divided into WP Tasks. Therefore, a Work Package Leader per WP and a Task Leader per Task are nominated, according to the project plan. <u>WP leaders and Task leaders are responsible for coordinating efforts in the WP and Task level accordingly</u>.

The SoilWise project management takes into account all the partners' interests and expertise, in order to ensure an effective project's time-plan and execution. <u>The main objectives of the project management that have been defined are to:</u>

- Ensure the effective administrative, financial and technical management of the project,
- <u>Identify quantifiable and targeted measurement criteria of project progress and clear milestones,</u>
- Ensure that the project results are achieved within the proposed resources (time, cost, resources),
- Apply quality assurance measures to all project related procedures and products,
- Provide successful dissemination of project's results and apply efficient exploitation activities and finally,
- Strengthen the co-operation of all project partners and external participants.

The figure below illustrates the management scheme that has been designed for the effective management and coordination of the SoilWise project.
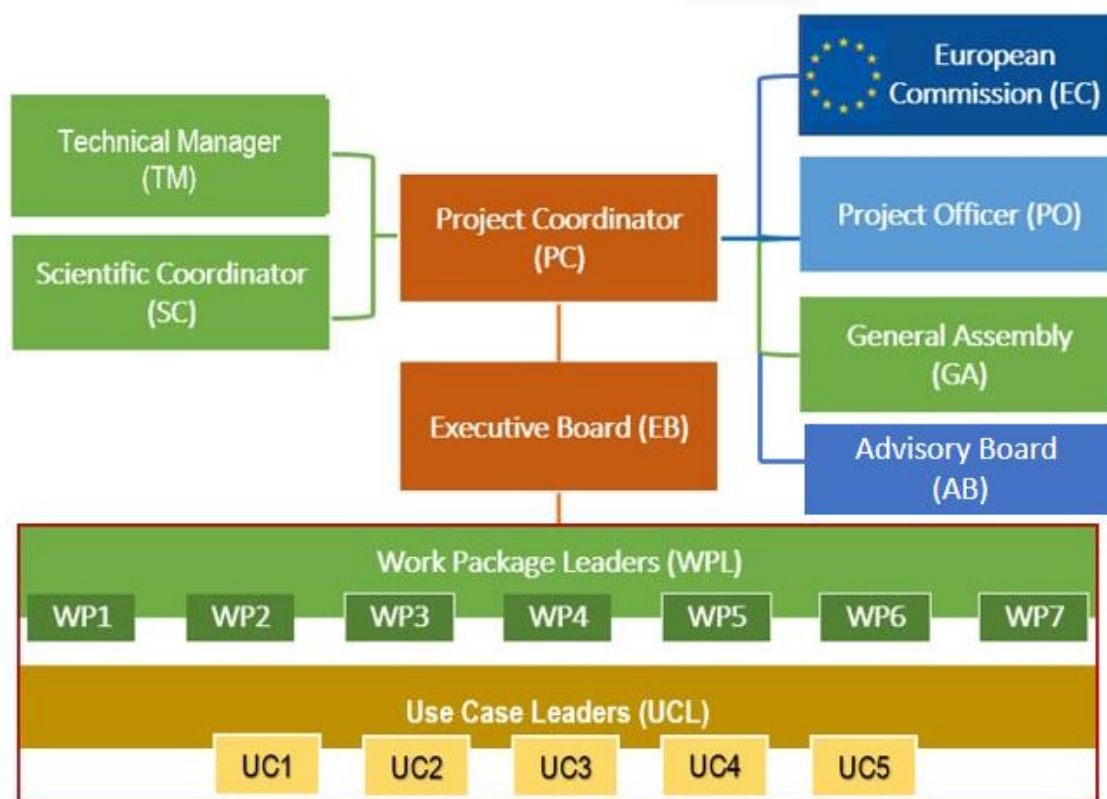
Figure 3 - Project management structure of the SoilWise project

The SoilWise hierarchical organization positioned above is comprised of the:

- **General Assembly (GA)**; is the ultimate decision-making body of the project. It will guide overall activities, project progress, and reporting, and will initiate and supervise the collaboration, dissemination and exploitation activities. It will also provide input for the preparation of progress reports for the EC, and will be responsible for tackling problems that may emerge. Each partner shall nominate a General Assembly member at the Kick-Off meeting. Decisions in the General Assembly will be put to the vote adopted if a qualified majority supports it.

- **Project Coordinator (PC);** act as liaison with the EC Project Officer, the Advisory Board, and other EU bodies, including the Soil Mission Board, as necessary. He will also act as an interface between the consortium and the financial departments of the coordinating partners in order to ensure that all payments are properly done, appropriate amounts were received, etc.. The Project Coordinator will coordinate the Period Reports and the Final Report at the end of the project.

- **Executive Board (EB)**; the supervisory body for the execution of the Project which shall report to and be accountable to the General Assembly. It consists of the Coordinator, the Work

package leaders and the Use case leaders. It runs the day to day and feeds the General Assembly with proposed solutions.

- **Work Package Leaders(WPL);** partners responsible for Work Package related decision-making and for the preparation of input for the Executive Board and the Project Coordinator.

- **Use Case Leaders (UCL):** partners responsible for Use Case related decision-making and for the preparation of input for the Executive Board and the Project Coordinator.

- **External Advisory Board (EAB):** shall be set up with relevant individuals, including a member coming from JRC if this is desired and supports the further collaboration between SoilWise and JRC, in order to provide external inputs and feedback related to these most critical areas for the project and to its evolution. The EAB Meetings will provide flexibility to join either in person or remotely to optimise the number of travels. This management of the AB will be the responsibility of WP7 under task T7.1.

The basic philosophy of this structure is that, although the General Assembly has the ultimate responsibility for the output and outcome of the project, the day-to-day management is delegated to the Executive Board.

In this structure, the **key project management and coordination persons** have specific functions:

- The Project Coordinator (PC) is responsible for the day-to-day management of the project. The PC will chair the Executive Board meetings, will coordinate the work of work package leaders and strategic partners. The PC of SoilWise project will be Dr. Panos Ilias, with the support of Dr. Radu Mircea Giurgiu.

- The Scientific Coordinator (SC) is responsible for the scientific vision of the project and for overseeing the implementation of the project, guaranteeing the work is meeting the scientific objectives proposed. The SC will be Dr. Tomas Renzik.

- The Technical Manager (TM) is responsible for the technical vision and management of the project and for overseeing the implementation of the project, guaranteeing the work meets the technical objectives and specifications of the project. The TM will be Dr. Nick Berkens.

Each Work Package/Task is led by the partner most competent in the domain concerned as identified within the Annex 1 of the GA. Work Package leaders and Task leaders are responsible for coordinating efforts in the Work-Package and Task level accordingly. Reporting on the successful completion of tasks, progress on deliverables, and on problems, delays and conflicts and proposals for decision making start from the partners involved at the Task level and escalate up to the final decision body that is the **General Assembly**. Active support will be given and formal controls will be applied to ensure sufficient feedback loops and close, effective, and efficient inter-relation and co-operation of all parties involved, through the quality and risk management, the project management office and the Management Committee.

However, the **Project Coordinator** retains the responsibility to intervene at any point of the management structure if the cohesion of the project is threatened. More specifically, in case of:

- Decisions which have broader project implications and/or involve communication with the Project Officer and contradict the DoA,
- Delays, costs overruns or other lack of project progress against the objectives described in the DoA,
- Conflicts, which the Work Package leader is unable to resolve or whose resolution remains elusive for an extended period of time, threatening overall project progress.

The various project management bodies and roles are further described in the Consortium Agreement.

3.3 Management procedures

Project and quality management activities will ensure the proper implementation of the project plan and the realisation of its objectives. Decisions will normally be taken by the responsible team members based on the work to be performed, as stated in the Grant Agreement, the Description of the Action (DoA) and the individual Work Package or Task plans.

During the project, the participating organisations will have to reach an agreement and resolve various technical issues. This agreement/resolution can be reached by informal contact as a first step, followed by official verification by means of e-mail, letter or minutes. Technical issues/conflicts within the given contractual commitments that do not involve alterations in the Grant Agreement, in budget and in the overall focus will be initially handled on the Work Package basis.

In the event of a project conflict among partners, the participants, with the intervention of the Project Manager if necessary, settle conflicts at the daily management level. If no consensus is achieved the conflict will be resolved by the General Assembly. Any issues that cannot be set amicably will be set in accordance to the relevant provisions of the Consortium Agreement.

4 Project baselines

4.1 Introduction

The project's baseline is used to measure how performance deviates from the plan and it is defined as the original scope, cost and schedule and must be completely documented before the project execution and control activities are initiated. Of course, the project performance measurement would only be meaningful if an accurate baseline is set. Once the project is initiated, the project's baseline is put under change control to enable the evaluation of any further change and/or impact on the project. In the event where there is an approved change to the project baseline, the new baseline is redefined as the original plan plus the approved changes. The project scope is defined in section **Error! Reference source not found.** of this document, while a reference to the project original cost and schedule is made within this chapter.

In addition, a section is dedicated to the quality baseline that records the minimum project indicators, which are an important performance management tool for the project to help measure progress in achieving the associated goals and meeting the basic requirements.

4.2 Schedule Baseline

The Overall Gantt chart in section 3.1.2 "Gantt Chart" within Part B of the Description of Action (DoA), presents the schedule baseline of the project. It can be found below, but in case of conflicting versions, the version in the DoA is the prevailing one.

4.3 Resource Calendar

The resource calendar indicates the overall envisaged effort resource consumption spend by all Work packages in person-months per month for the whole project duration. This is derived by cumulating the individual planned effort resource spent by each partner at the beginning of the project according to the efforts declared within the .xlsx file used for project scheduling as explained in section 11.2 "Schedule Management". Each WP leader is responsible for submitting to the PC at the beginning of the project their planned efforts for the whole project duration in relation to the Tasks where assigned person months are allocated, and the PC is responsible for maintaining a consolidated version of it for the whole project.

4.4 Cost Baseline

The cost baseline concerns the amount of money that the project is predicted to cost and when that money will be used throughout the project lifespan. This is derived according to the:

- **Project Budget** (as declared in table of Annex 2 of the Grant Agreement: "Estimated budget for the action")
- **Effort Allocation** (as declared in table of section: "Staff Effort" in Annex 1 of the Grant Agreement)
- **Project Work Plan** (described in Annex 1 of the Grant Agreement)

In essence, the cost baseline converts efforts to personnel cost per month, including indirect, other costs and subcontracting expenses. For the calculation of the project cost baseline the same policy as with the definition of the resource calendar described above is applied. In this instance, all consortium partners at the beginning of the project will need to provide the PC with their planned expenses per.

Figure 4 - SoilWise Gantt chart (M = Milestone, D in dark red box = Deliverable)

reporting period, and their average person rate in case this is different from what it is documented in the Annex 1 of the Grant Agreement. At the end of each reporting period (**Reporting periods M1-M18, M19-M36, M37-M48**), all partners will be requested to provide to the PC with the actual costs consumed

4.5 Quality Baseline - KPIs

Project indicators are an important performance management tool for projects to help measure progress in achieving their goals and meeting requirements, hence, it is important that the chosen success criteria are quantifiable and critical to the success of the project. This section provides performance indicators for meeting the specific objectives of the project in the points below. These points will be reviewed, updated and refined during the course of the project through the scope and change management processes, to ensure that all partners have the opportunity to contribute to the discussion and help select the appropriate performance indicators for the project. The project will be measured against its performance indicators at a number of stages:

- the three project reviews; and
- within additional internal quality reviews (see section 8.3.2).

The results of performance measurement and evaluation (indicators and their values) will be part of the progress reporting to the European Commission.

The baseline Key Performance Indicators (KPIs) that have been identified for the purposes of the SoilWise project are detailed in Part B of the DoA and more specifically in the following sections:

- Section 1.1.2 "SoilWise Key Objectives"
- Section 2.1. "Project's pathways towards impact"
- Section 2.2.1 "SoilWise overall dissemination, exploitation and communication strategy"
- Section 2.2.2 "Dissemination Strategy and Measures"
- Section 2.2.3 "Communication Strategy and Measures"
- Section 2.2.3 "Dissemination and communication activities after the end of the project"

The list of Reviews is indicative, as well as their timing

Revision No. ▲	Tentative Timing	Planned Venues	Comments
RV1	20	TBD	to be discussed with REA PO minimum 3 months in advance
RV2	38	TBD	to be discussed with REA PO minimum 3 months in advance
RV3	48	TBD	to be discussed with REA PO minimum 3 months in advance

Figure 5 SoilWise reviews

5 Quality Management

5.1 SoilWise Approach

SoilWise approach to quality is based upon creating deliverables throughout the project that contribute to delivering the required project outputs and impact. The methodology involves:

- Identifying all the projects deliverables
- Implementing and tracking progress through quality methods throughout the project

SoilWise will mainly use the peer-review method for determining quality. Through this method, the deliverables are assessed for completeness and fitness for purpose. A quality inspection is a systematic, structured assessment of a deliverable conducted in a documented and organised fashion. This approach to quality inspection can be used both during the development of deliverables and to mark the completion and approval of deliverables.

5.2 Deliverable Preparation Guidelines

A total of 41 deliverables will need to be submitted to the European Commission in the course of SoilWise project. To ensure smooth and timely delivery of deliverable as well as homogeneous presentation, a set of guidelines for the preparation of deliverables is presented here.

5.2.1 Deliverable Types and Confidentiality Levels

The deliverables are classified according to the following types:

R: Document, Report

OTHER: Software, technical diagram, etc.

Insofar the confidentiality of deliverables and other documents, including presentations, is concerned, the following two (2) levels of security are considered:

PU: Public Usage. No restrictions on access (in secured PDF format).

SEN: Sensitive, only for members of the consortium (including the Commission Services).

5.2.2 Deliverable Preparation and Peer Review Process

All deliverables should be formed according to the Deliverable template maintained within the Document Management System (Microsoft Teams: SoilWise Project). The template provides a deliverable identity sheet and specifies formatting for the most used elements of deliverable report. The partners responsible for the deliverable are required to ensure that before releasing the first deliverable draft to partners, it is in the correct template, specified format and the identity sheet is complete. The table below shows the process to be observed for preparing deliverables.
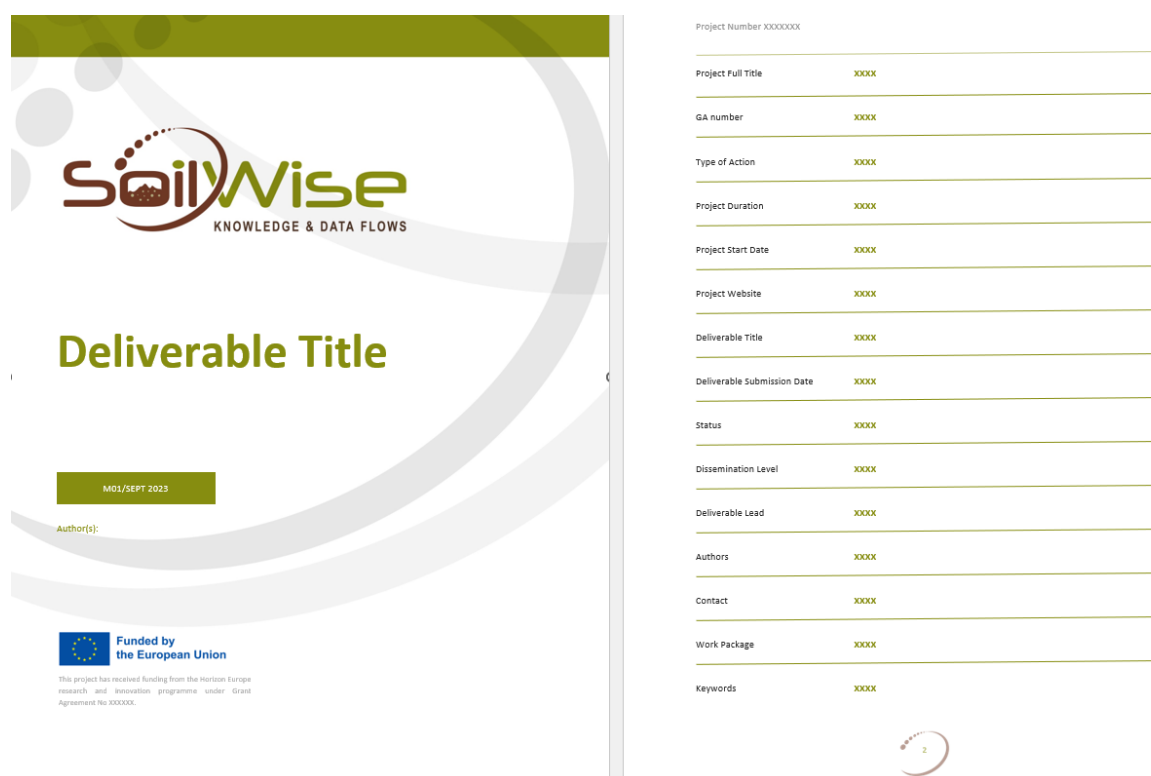
Figure 6 - Sample pages from the Deliverable template

Who	Action	To Whom	Deadline
DL	• Prepares Table of Content (ToC) and Circulates for agreement by partnership • Proposes Assignments on the ToC and agrees with the contributors • Presents timetable for intermediate versions	Contributing Partners, Review Team	> 2 months PTD
DL	• Updates ToC according to gathered comments	Contributing Partners	> 1,5 Months PTD
Contributing Partners	• Work on the document • Issue intermediate releases	Contributing Partners	Ad Hoc
DL	• Consolidates all input • Issues initial complete draft • Circulates for comments	Contributing Partners and WPL	5 weeks PTD
Contributing Partners and WPL	• Review the document • Provide commends	DL	4 weeks PTD

DL	• Document update addressing comments received • Consolidates all input • Issue updated complete draft • Returns document for internal Peer Review	Consortium Review (incl. Internal Deliverable Reviewers - see following sub-section), QM	3 weeks PTD
Review Team	• Review the document • Provide commends	DL	2 weeks PTD
DL	• Final editing: Update document addressing comments received	WPL, DL, QM, CO	1 week PTD
QM	• Final approval (if not approved it returns immediately back to the DL for revision)	CO	3 days PTD
PC	• Submits Deliverable to the EC • Places the submitted PDF version on the project repository under the respective WP folder	European Commission	1 day PTD

Table 4 - Deliverable Preparation Process

5.2.2.1   *Deliverable Reviewers List*

The following table lists the **internal Review Team** assigned per Deliverable. The goal is for each Deliverable to have two reviewers, in order to combine different perspectives in the review.

A/A	Deliverable Code	Deliverable Title	Lead Beneficiary	Type	DL	Due Project Month	Due to day	Reviewer 1	Reviewer 2	Reporting period
1	D1.1	Usage Scenarios, Requirements, v1	ISRIC	R	PU	6	29-Feb-2024	EV ILVO	ZALF	1st
2	D1.2	Usage Scenarios, Requirements, v2	ISRIC	R	PU	36	31-Aug-2026	EV ILVO	ZALF	2d
3	D1.3	Repository architecture, v1	MU	OTHER	PU	8	30-Apr-2024	WE	NP	1st
4	D1.4	Repository architecture, v2	MU	OTHER	PU	42	28-Feb-2027	WE	NP	3d
5	D1.5	Repository GM, v1	EV ILVO	R	PU	21	31-May-2025	CREA	INRAE	2d
6	D1.6	Repository GM, v2	EV ILVO	R	PU	42	28-Feb-2027	CREA	INRAE	3d
7	D2.1	Developed & Integrated DM components, v1	MU	OTHER	PU	13	30-Sep-2024	CIRAD	CREA	1st
8	D2.2	Developed & Integrated DM components, v2	MU	OTHER	PU	18	28-Feb-2025	CIRAD	CREA	1st
9	D2.3	Developed & Integrated DM components, v3	MU	OTHER	PU	31	31-Mar-2026	CIRAD	CREA	2d
10	D2.4	Developed & Integrated DM components, v4	MU	OTHER	PU	46	30-Jun-2027	CIRAD	CREA	3d
11	D2.5	Report on strategy for FAIRness on soil data, v1	MU	R	PU	27	30-Nov-2025	CIRAD	CREA	2d
12	D2.6	Report on strategy for FAIRness on soil data, v2	MU	R	PU	42	28-Feb-2027	CIRAD	CREA	3d
13	D3.1	Developed & Integrated KM components, v1	WR	OTHER	PU	13	30-Sep-2024	WU	NP	1st
14	D3.2	Developed & Integrated KM components, v2	WR	OTHER	PU	18	28-Feb-2025	WU	NP	1st
15	D3.3	Developed & Integrated KM components, v3	WR	OTHER	PU	31	31-Mar-2026	WU	NP	2d
16	D3.4	Developed & integrated KM components, v4	WR	OTHER	PU	46	30-Jun-2027	WU	NP	3d
17	D3.5	Report on strategy for effective soil KM, v1	WR	R	PU	27	30-Nov-2025	CIRAD	ELO	2d
18	D3.6	Report on strategy for effective soil KM, v2	WR	R	PU	42	28-Feb-2027	CIRAD	ELO	3d
19	D4.1	Repository infrastructure, components and APIs, v1	WE	DEM	PU	13	30-Sep-2024	WU	WR	1st
20	**D4.2**	**Repository infrastructure, components and APIs, v2**	**WE**	**DEM**	**PU**	**18**	28-Feb-2025	WU	WR	**1st**
21	D4.3	Repository infrastructure, components and APIs, v3	WE	DEM	PU	31	31-Mar-2026	WU	WR	2d
22	D4.4	Repository infrastructure, components and APIs, v4	WE	DEM	PU	47	31-Jul-2027	WU	WR	3d
23	D4.5	Repository Data and Knowledge Resources, v1	EV ILVO	DATA	SEN	21	31-May-2025	ISRIC	CREA	2d
24	D4.6	Repository Data and Knowledge Resources, v2	EV ILVO	DATA	SEN	34	30-Jun-2026	ISRIC	CREA	2d
25	D4.7	Repository Data and Knowledge Resources, v3	EV ILVO	DATA	SEN	46	30-Jun-2027	ISRIC	CREA	3d
26	D5.1	User cases guidelines and demonstration plans, v1	EV ILVO	R	PU	12	31-Aug-2024	CREA	ELO	1st
27	D5.2	User cases guidelines and demonstration plans, v2	EV ILVO	R	PU	24	31-Aug-2025	CREA	ELO	2d
28	D5.3	Deployment and Evaluation Report, v1	EV ILVO	R	PU	21	31-May-2025	ZALF	WE	2d
29	D5.4	Deployment and Evaluation Report, v2	EV ILVO	R	PU	34	30-Jun-2026	ZALF	WE	2d
30	D5.5	Deployment and Evaluation Report, v3	EV ILVO	R	PU	46	30-Jun-2027	ZALF	WE	3d
31	D5.6	Usage best practices and replication guidelines	EV ILVO	R	PU	47	31-Jul-2027	NP	ELO	3d
32	D6.1	Project Web Site	BIOS	DEC	PU	3	30-Nov-2023	EV ILVO	ISRIC	1st
33	D6.2	DEC and Capacity Building Plan and Report, v1	BIOS	R	PU	3	30-Nov-2023	CIRAD	ELO	1st
34	D6.3	DEC and Capacity Building Plan and Report, v2	BIOS	R	PU	18	28-Feb-2025	CIRAD	ELO	1st
35	D6.4	DEC and Capacity Building Plan and Report, v3	BIOS	R	PU	48	31-Aug-2027	CIRAD	ELO	3d
36	D6.5	IPR and Business Model Report, v1	BIOS	R	PU	24	31-Aug-2025	ELO	INRAE	2d
37	D6.6	IPR and Business Model Report, v2	BIOS	DEC	PU	47	31-Jul-2027	ELO	INRAE	3d
38	D7.1	Project Management handbook	EV ILVO	R	PU	1	30-Sep-2023	NP	GAIA	1st
39	D7.2	Open Science and Data Management Plan, v1	MU	DMP	PU	6	29-Feb-2024	WU	ISRIC	1st
40	D7.3	Open Science and Data Management Plan, v2	MU	DMP	PU	27	30-Nov-2025	WU	ISRIC	2d
41	D7.4	Open Science and Data Management Plan, v3	MU	DMP	PU	48	31-Aug-2027	WU	ISRIC	3d

Table 5 Deliverable Reviewers List

It has been decided that the final version of submitted deliverables to the EC will be made available in PDF format in a designated folder in Teams named **Submitted Deliverables**. SoilWise > Project Management > Submitted Deliverables.

5.2.3   Document Formats

The following software formats and version of production tools shall be used in the project:

Data Type	File Format	Production Tool	Version
Word processing	.docx	Microsoft Word	"Word 2013" or newer
Tabular spread sheet information and graphs	.xlsx	Microsoft Excel	"Excel 2013" or newer
Presentations	.pptx	Microsoft PowerPoint	"PowerPoint 2013" or newer
Project Planning	.xlsx	Microsoft Excel	"Excel 2013" or newer
Images	.jpeg	Any software tools that can produce .jpeg files	
Portable Document Format	.pdf	Any software that can produce .pdf files	
Compressed files	.zip or .7z	Any software that can produce .zip or .7z files	

Table 6 - Electronic file formats

Documents for electronic distribution must be storable / retrievable in a Microsoft Windows 7 or higher environment supporting long names.

If the partner responsible for the delivery of any document using one of these format is using a higher version than the one mentioned, then the original version should also be included (preferably through a .zip format).

It is recommended that changes to draft Word documents are made with track changes on, unless the document author requests otherwise.

The partner shall ensure that the images are suitable for printing and, especially for those images to be used for dissemination purposes, that they can be embedded in larger printing.

The use of the PDF format is limited to its capability of obtaining files that are printable with the same layout regardless of the printer. This explicitly excludes the use of any modification capability that can be offered by a PDF capable tool.

5.2.4   Filename Conventions

The partners are expected to exchange several documents between them during the course of project work. In order to facilitate document identification and differentiation between multiple versions of the same document, the following file naming convection should be used for the final version of the documents uploaded in Teams:

SoilWise _<document name>_<version>_<date>.extension

<date> : yyyy-mm-dd, e.g. 2022-07-15

<document name> short (3-4 words) document name, e.g. D7.1 Project Management Handbook

<version>: increasing number with decimals between public releases

When a partner makes comments or changes to a file, he/she should append his/her "_<company/person>" field just before the .extension or use track changes in case of a Doc file.

These filename conventions apply to other electronic objects, besides documents, that are used to exchange project information, e.g. prototype code. If such an object is composed of multiple files organized within a directory structure (e.g. source code that has not been zipped into one file), the filename convention requirement applies only to the top directory name.

6 Change Management Plan

6.1   Introduction

The Change Management Plan sets expectations on how the approach to changes will be managed, what defines a change, the purpose and role of the General Assembly, and the overall change management process. All consortium members are expected to submit or request changes to the SoilWise project in accordance with this Change Management Plan and all requests and submissions will follow the process detailed herein.

6.2   Change Management Approach

The Change Management approach is not to be confused with the Change Control Process, which is detailed in Section 6.5. The approach provides the general principles to which the process must adhere. The Change Management approach introduces the following rules:

- Ensure changes are within scope and beneficial to the project
- Ensure that all proposed changes are described adequately, reviewed, and agreed upon, so they can be properly implemented and communicated to all consortium members
- Determine adequately how the change will be implemented
- Manage the change and its impacts as it is implemented

The Change Management process has been designed to make sure this approach is followed for all changes. By using this approach methodology, the SoilWise project will prevent unnecessary changes from occurring and focus its resources only on beneficial changes within the project scope.

6.3   Definition of Change

There are several types of change that may be requested and considered for the SoilWise project. Depending on the extent and type of proposed changes, changes to the project documentation (i.e. project contract, internal or external deliverables, reports and other documentation) may be required. Additionally, communicating these changes may need to include any approved changes in projects plan and ensure all consortium partners are notified. Types of changes include:

Scheduling Changes: changes that will impact the approved project schedule, i.e. schedule baseline. These changes may require fast tracking or re-baselining the schedule depending on the significance of the impact.

Budget Changes: changes that will impact the approved project budget. These changes may require reallocation of budget or may require changes to the cost baseline and a contract amendment. Under any circumstances, no additional overall project funding will be approved.

Effort Changes: changes that will impact the effort allocated to specific tasks. Depending on the size of these changes, they may require contract amendment. For minor changes to the planned effort allocation partners with the involvement of WP leaders can address these issues between them while keeping the PC informed.

Scope Changes: changes that are necessary and impact the project scope which may be the result of unforeseen requirements. These changes will be reported and documented in project reports.

Quality Changes: changes that will impact the quality of project deliverables. Depending on the extent of the impact on quality, these changes may require the modification of impact indicators and the contract with the European Commission. These changes may be reported and documented in project deliverables and reports.

All changes must be communicated to the PC and management team and examined for their impact to scope, budget/effort, schedule and quality.

The **Project Coordinator (PC)** must ensure that any approved changes are communicated to the consortium partners. Additionally, as changes are approved, the Project Coordinator must ensure that the changes are captured in the project documentation where necessary and is ultimately responsible for their changes. These document updates must then be communicated to the consortium partners as well.

6.4   Change Process

General Assembly is the approval body for all change requests pertaining to SoilWise. For major changes affecting the contract and/or have overreaching impact to the project, the General Assembly will put the changes for approval to the European Commission and/or consortium. The General Assembly reviews all change requests, determines their impacts on the project risk, scope, cost, and schedule, and filters change requests.

As Change Requests (CR) are submitted to the TLs, WPLs by the project team members, they rate them and forward to the PC. The PC logs the requests in the change log. All change requests will be reviewed during the General Assembly meetings. For a change request to be approved, all General Assembly members must vote in favour. For changes impacting the contract, the General Assembly will consult the European Commission and initial a contract amendment. In the event more information is needed for a particular change request, the request will be deferred and sent back to the requestor for more information or clarification. If a change is deemed critical, an ad hoc General Assembly meeting can be called in order to review the change prior to the next scheduled General Assembly meeting.

6.5   Change Control Process

The PC has overall responsibility for executing the change management process for each change request. The Change Control Process for the SoilWise Project will follow the steps below.

#	Steps	Who	To Whom	When	CR Status
1	Identify the need for a change – Change requester will submit a change request via e-mail up the project hierarchy. The e-mail should contain at minimum the following information: • Description of the cause • Description of the change • Description of the suggested solution • Impacts to schedule, budget, effort, scope, risk and quality	Project partner	WPL, TL	Immediately	Initiated

2	Conduct a first analysis on the impact of the change to risk, cost, schedule, quality, risk and scope and seek clarification from team members and the change requestor. They will determine its priority (i.e. Emergency or Standard) and impact (i.e. Critical, Significant, Standard) and forward to the PC along with a decision to discuss the request or not.	WPL, TL	PC	Immediately	Initiated
3	Logs the change request and decides to forward to the General Assembly immediately or wait until next GA meeting.	PC	General Assembly	Immediately	Logged
4	The General Assembly members will conduct a full analysis on the impact of the change to risk, cost, schedule, quality, risk and scope and seek clarification from project partners and the change requestor.	General Assembly	General Assembly	As needed	Evaluation
5	The General Assembly will discuss the proposed change at the next General Assembly meeting. It will decide whether or not to approve each change request based on the available information or put the issue for discussion with the Consortium. For changes that require modification of the DoA, the Consortium agreement will be required.	General Assembly	-	During General Assembly Meeting	Approved/ Rejected
6	If a change is approved by the General Assembly, the PC will update the project documentation as necessary. S/he will inform all involved parties and monitor the implementation of the change.	PC	General Assembly	As needed	Implementation

Table 7 – Change Control Process

6.6   Change Request Evaluation Criteria

Change requests are evaluated using the following priority and impact criteria.

Priority	Description
Emergency	The change request is time critical and an accelerated authorization and planning is required.
Standard/Low	The change request can wait until the next scheduled project management meeting.

Table 8 -Change Request Priority Criteria

Impact	Description
Critical	Presents an extraordinary high risk which will impact the delivery of the project and/or may require a contract amendment.
Significant	It requires management decision at the level of the PC or TC and may have broader impact for the project.
Standard / Low	It is presented to the management for informational reasons only. The matter is routine and can be resolved at the WP level.

Table 9 - Change Request Impact Criteria

7 Communication Management Plan

7.1 Introduction

The Communication Management Plan sets the communication framework for SoilWise project. It will serve as a guide for communication throughout the life of the project and will be updated as communication requirements change. This plan identifies and defines the roles of SoilWise project partners as they pertain to communications. It also includes a communication matrix, which maps the communication requirements of this project, and communication conduct for meetings and other forms of communication. A project team directory is also included to provide contact information for all partners directly involved in the project.

7.2 Communication Management Approach

The Project Coordinator and management team will take a central and proactive role in ensuring effective communication on this project. The communication requirements are documented in the Communication Matrices presented in Section 7.4. The Communication Matrices will be used as the guide for what information to communicate, who is to do the communicating, when to communicate it and to whom to communicate.

Overall information flow within the project will be ensured by the following means / guidelines:

- Activities like exchange of information, internal technical and business documents (i.e. meeting minutes), technical documentation generated by the project, notifications of relevant new publications, reports from external / bilateral meetings (if any), notifications of the consortium of any updates from the relevant standardization bodies, are foreseen to occur in electronic format via the project's web based repository (Teams) as well as by e-mail. For each document upload the consortium will be notified by email.
- Urgent correspondence over e-mail will be sent with a request for explicit acknowledgement and indicated in the title with "URGENT".
- Ordinary mail will be used for strictly formal correspondence, i.e. when executive signatures are required.

7.3 Project Team Directory

SoilWise maintains a listing with communication information for all people involved in the project (SoilWise_contact_list.xlsx), available at Teams document repository at the following address: https://ilvo.sharepoint.com/:x:/s/HESoilWiseProject/Eeh_ugfVZiJIhSDaThKL90sBG4yDszareYVuRLTV4A1LgQ?e=XBt4CR

Deliverables, minutes and general documents produced are also available at the Teams that had been set and maintained by the coordinator.

7.4 Communication Channels and Assessment

This section presents several communication matrices with all the types of communication needs, which have been identified in the context of the project such as meetings, reports, reviews etc. In addition, the attributes of each identified type are specified.

The communication requirements from the project stakeholders in terms of the type, level of detail, and format of the information that they need will be analysed and documented. The documents from

the Commission or other projects will be circulated as appropriate. For all matters within the scope of the project, there will be no limitations on access to information from the Partners and this is also foreseen in the project Consortium Agreement (CA).

External communication:

External communication will be handled in WP6. For example, in SoilWise's website, a Show & Tell Blog, will be established towards communicating public documentation, announcements of events (e.g., workshops, conferences, webinars), etc. with external stakeholders. This website will eventually evolve to a repository making publicly available all of the SoilWise's outputs. Project has already established dedicated e-mail and social media accounts, to enable interested parties to rapidly get involved and exposed to the technology and outcomes of SoilWise. For relevant aspects of the work, the partners shall produce high quality presentations and scientific papers for publication in specialized conferences and journals. These efforts will be pursued throughout the project to raise awareness, ensure high visibility of the project outcomes, and establish the grounds for technology transfer and use of the results.

A set of KPIs (Table 10) has been developed, assessing the efficiency of these actions:

Communication tools & channels	Objectives	Key Messages
Full Branding & Web Design (By M03)	Development of the project's visual and brand identity, website (mobile friendly) and social media channels. Produce templates to complement the brand.	*"We can co-create a a knowledge repository to safeguard soils"*
KPIs: 1 visual identity; 1 website; ≥ 4 Social media channels (Linkedin, Facebook, Twitter, Slideshare); Design of ≥ 2 sets of brochures, posters, leaflets, one-pagers, etc (translated to all consortium languages) *(Source: Partners' regular reporting).*		
Digital & Social Media (From M03 onwards - continuous monitoring and regular evaluations)	Create, promote, and optimize high-quality, relevant, and engaging content that's easy to understand by all.	*"Insights on the potentials of the knowledge sharing"*
KPIs: Website: Unique website pageviews > 10.000, Bounce rate > 35% *(Source: Google Analytics)*; Social media: Posts > 1.000, Interactions > 15.000 (altogether); >1.000 Social media followers *(Source: Social media insights)*; Newsletter subscribers >1.000 *(Source: Partners' regular reporting).*		
Press Outreach & Event Planning (From M03 onwards - continuous monitoring and regular evaluations	Intensify dialogue, create concrete, personal and immersive experiences, and increase the participatory dimension.	*"Roadmap towards Sustainable Soil Data Communities"*
KPIs: Six-monthly E-newsletters with > 2.000 recipients & > 1.000 interactions *(Source: Mailing service insights)*; Press releases to reach national & European media: > 8; Articles issued in local, national, regional, EU media (printed or online) > 50; TV & radio appearances > 10 *(Source: Partners' regular reporting & press clipping).* Events: > 45; Videos with success stories & interviews > 10 *(Source: Partners' regular reporting).*		

Table 10 Communication KPIs

Information sharing for the development of publications is also foreseen in the Consortium Agreement. Part of the external communication will be the interaction with the European Commission (EC). The Project Coordinator, will act as the intermediary for all communication between the beneficiaries and the Commissionon matters such as the preparation, completion and submission of periodic reports, the preparation, completion, and submission of deliverables and the project and funding-related questions raised by the consortium that need explicit feedback from or agreement with the PO.

Internal communication:

Information exchange within the project will utilize advanced ICT means, like audio and video conferencing, instant messaging, electronic mail, e-mailing lists, and the Teams repository. Moreover,

the project will hold various project meetings hosted in turn by Partners, when this is possible (i.e., when traveling and gathering is allowed). Every six months the consortium will hold a plenary meeting (at least two plenary meetings yearly) to guarantee consistency and integrity of the project. These meeting will focus on summarizing the project's achievements and lessons learnt, defining actions and measures to meet the project's objectives as well as review preparations, discussing the structure and organization of upcoming project work per partner and WP and especially define strategies to meet challenges identified at previous reviews or other events, and outlining relevant dissemination and management issues for the upcoming period. General Assembly meetings will be held in this context. Additional workshops or meetings will be held as required by the work plan and the needs identified by the project and technical management.

7.4.1 Project Meeting Matrix

The following table identifies the communication requirements for project coordination.

Meeting	Objectives	Audience	Frequency / Time	Prior Notice	Chair	Medium / Location	Deliverables
Kick-Off Meeting	Introduce the team, roles and members. Review project history, scope, objectives, planning and management approach.	All project partners	Once M1 (25-27/9/2023)	1 month	PC	Face-to-Face	Agenda Meeting presentations Minutes - Action Plan
1st Interim Project Review	Evaluation of project results by European Commission.	All project partners, EC	M20	Upon communication with the EC	EC, PC	Online or TBD	All deliverables to be submitted by M18
2nd Interim Project Review	Evaluation of project results by European Commission.	All project partners, EC	M38	Upon communication with the EC	EC, PC	Online or TBD	All deliverables to be submitted by M36

Plenary Meetings	To direct the project, ensure correct implementation of activities at all project levels, monitor the project's progress, and examine future plans	All project partners	To be held every 6 months	45 days	PC	Face-to-Face (if possible) or Online	Agenda Meeting presentations Minutes Action Plan
WP Leadersmeetings	To direct the project, ensure correct implementation of activities at WP level, monitor the project's progress, and examine future plans	WP related partners	Monthly	15 days	PC	Online	WP related issues
WP meetings	Each WP leader will define the meeting schedule according to the needs and the coordinating actions among the involved parties for the implementation of WP activities.	WP related partners	Monthly	15 days to 1 month	WP participating partners	Online	WP related issues

Ad hoc meetings	Organised in case of an emergency or a conflict resolution as specified in the escalation procedure.	All project partners	Ad hoc		PC, WPL	Face-to-Face, Phone, Online	Agenda Decisions taken Action Plan
Final Project Review	Evaluation of project results by European Commission.	All project partners, EC	M48	Upon communication with the EC	EC, PC	Online or TBD	All deliverables to be submitted by M48

Table 11 Project Meeting Matrix

7.5 Communication Guidelines

7.5.1 Meeting Guidelines

7.5.1.1 Meeting Requests

Meetings will be organized using the Doodle online service (http://www.doodle.com) or a similar online tools (e.g., SurveySparrow, Calendly, Hubspot) for determining the dates most partners are available. The meeting chair is responsible for initiating meeting organization. Meetings will be collocated when possible to minimize expenses and travel time of partners. For example, plenary meetings are scheduled to occur together with some WP1 workshops, on different schedules, so partners can attend. The strategy is to hold fewer but larger meetings in order to reduce costs.

7.5.1.2 Participants to Meetings

All partners are required to be present to meetings either themselves or through substitute or proxy. Additionally, to ensure an effective meeting, all participants should undertake any necessary preparation prior to the meeting and they shall participate in a cooperative manner. During the management meetings, the representatives should be in the position to take decisions.

7.5.1.3 Meeting Agenda

For face-to-face meetings, a draft meeting Agenda will be prepared by the meeting chair and distributed 21 calendar days in advance of the meeting following the template that is available at the Teams; the meeting agenda is also maintained within the Teams, at a separate folder. The agenda will be clear listing the topics and the allocated time for each topic to be discussed in the meeting. As so, the participants will arrive in the meeting knowing what is to be discussed and with sufficient background information to make relevant contributions. Any partner can add an item to the original agenda by written notification to all the other partners no later than 14 calendar days preceding the meeting (7 calendar days for an extraordinary meeting). During the meeting, the consortium can add new items on the agenda following a unanimous decision. Any agenda item requiring a decision from the Consortium body must be identified as such on the agenda. For online meetings, the same policy applies with the only exception on the meeting announcement date that may be less than a week.

7.5.1.4   Meeting Minutes

Minutes of the meetings will be transmitted and distributed without delay, within ten (10) calendar days following the meeting by the chair. The meeting minutes template has been created and it is maintained within the project Teams folder (see Templates directory in Figure 6) and all meeting minutes of all nature will be uploaded at the document repository. The minutes (or a corrected version of them) shall be considered as accepted if, within fifteen (15) calendar days from distributing and receipting them, no partner has sent an objection in writing and has objected in a traceable form to the Chair Person. All decisions become biding after they have been recorded in the meeting minutes and the meeting minutes are accepted.

7.5.1.5   Meeting Chair Person

The Chair Person is responsible for distributing the meeting agenda, facilitating the meeting and distributing the meeting minutes. The Chair Person leads the meeting, maintain the order of the agenda issues, ensures the conventions of the meeting are being followed, promotes fairness and equality and approves the formal minutes of the meeting after they have been formatted, to confirming that they are a correct and truthfully representation of the events that took place. The Chair Person will also ensure that the meeting starts and ends on time, the participants of the meeting stick to the agenda, adhere to their allocated time frames, respect each other and respect the rules of the meeting, The Chair Person will preside over the meeting to ensure that participants are following the conventions of the meeting.

7.5.1.6   Resources for Meetings

Budget for meetings has been allocated to all respective partners, ensuring that the project proceeds within the framework of the project budget.

7.5.2 Dissemination Guidelines

The external communication of the project is handled through WP6, led by the partner BIOS, in cooperation with the rest of the consortium partners. As such, the dissemination leader is responsible for leading the dissemination of the project results, while ensuring the accomplishment of the following dissemination objectives:

Objectives #	Description of the objectives
Objective 1	Bring a critical mass of stakeholders and maximize outreach opportunities for SoilWise with targeted messaging and customized content.
Objective 2	Diffuse scientific and technological knowledge generated in the project and put it to productive use via capacity building under SoilWise Results (Strategies and Guidelines).
Objective 3	Nurture a collaboration framework for complementarities/ synergies with Soil Mission projects, initiatives for example in EU Common European Data Spaces to avoid duplication of efforts, and capitalize on the results.
Objective 4	Get feedback from key stakeholder segments and potentials users to make sure our developments are going in the right direction and iterate.

Objective 5	Align and integrate our dissemination, communication, community-building activities with our exploitation efforts to ensure sustainability of our reusable assets.
Objective 6	Encourage new initiatives and support those already being carried out.

Table 12 – Dissemination Objectives

A continuous monitoring mechanism was formed to report the progress of the dissemination measures based on the following KPIs to safeguard that supportive or corrective actions would take place on time.

Table 13 – Dissemination KPIs

KPI	Values
High-level events and campaigns (disKPIs 1)	Organise **15** Demonstration activities to boost knowledge sharing and replication of results. Organise **≥3** dissemination events targeting all SoilWise stakeholder groups. Participate in ≥45 events (such as EUSO Stakeholder Forum, FarmDemo Conference, events organised by other Soil Mission projects, etc). Organise **≥7** stakeholder (WP2) and capacity building workshops (WP7).
Scientific and policy briefs (disKPIs 2)	**10** Policy briefs for local, national EU policy makers; **≥10** peer-reviewed papers & conferences contributions;
Community & ecosystem building (disKPIs 3)	Organize joint activities and share data with > **5** EU initiatives; **2.000** newsletter subscribers;
Networking, synergies & liaison activities (disKPIs 4)	8 Joint press releases & statements; 15+ EIP-AGRI Practice Abstracts; Representation in > **5** networks relevant to soil data (e.g. IUSS SIS, GSP P5,).

Partners have been allocated effort, travel and meeting budgets to carry out activities in relation to these tiers in order to boost the uptake of SoilWise results as enablers for competitiveness and sustainability. Even though, they have been assigned these funds under their own budget they should undertake activities only after consulting the Dissemination, Exploitation and Communication Plan (DoA, D6.1), their respective TL and WP6 Leader. An initial strategic Dissemination, Exploitation and Communication (DEC) plan will be developed by BIOS by M3 and it is foreseen to be updated during M18, and M48. The WP6 team will log planned activities in the project calendar which will take the form of a Teams calendar. Partners will have access right to the event calendar. They will be asked to suggest and add relevant events/meetings/conferences to the events database. After internal review, events' information will be published and promoted through SoilWise's online tools (i.e., website and social media accounts).

After executing dissemination activities, partners are responsible for providing relevant information (i.e., mention the type, date/time and place of the event, target audience and number of attendants, number of dissemination material handed, contacts made, photographs from the event, contact lists etc.), as directed by the above plan. The WP6 team will maintain dissemination activities log that is foreseen to be both available online (via live Team docs) but also maintained within the Teams

document repository, and accessible to all partners . A document in a Teams form has been created in order the partners to add successfully the dissemination measures that have been executed by their side.

In the event where there is scheduling conflict or disagreement on the appropriateness of a dissemination activity, the issue will be discussed first at the WP6 level. If the issue still cannot be resolved it will be brought to the attention of the PC.

Finally, partners are to present a uniform look for the project and hence reinforce the branding of the project using the templates produced.

Regarding participating to events outside the Europe Union for conferences or other dissemination events, partners must receive approval by the Project Officer (via sending a request to the PC) in order to be able to claim the expenses from their budget. To obtain the approval they must follow the following procedure as indicated in the table below.

#	Steps per period	Who	To Whom	When	Instrument
1	Send a request in the form of an e-mail explaining the reason for attending the meeting and why is it so important	Partner	PC, WP6 Leader	>2 months prior to the activity	e-mail
2	Examine the request against the dissemination strategy and approve or reject it.	PC, WP6 Leader	Partner	>2 months prior to the activity	e-mail
3	If the request is approved the WP6 Leader will inform the PC	WP6 Leader	PC	2 months prior to the activity	e-mail
4	If the request is approved the PC forwards the respective request to the Project Officer to get a provisional approval	PC	Project Officer	>1 month prior to the activity	e-mail
5	The Project Officer will respond with his/her decision. The Project Officer's decision is final.	Project Officer	PC	No way to gauge the time	e-mail
6	The PC will forward the Project Officer's decision to the Partner	PC	Partner, WP6 Leader	1 month prior to the activity	e-mail

Table 12 Procedure for conducting dissemination activities outside European Union boarders

7.5.3 Communication Tools Guidelines

To support the project management of SoilWise and facilitate the collaboration of the partners a number of tools have been provided. This section provides guidelines for the use of these tools:

- **Virtual or Face-to-face meeting**: To enhance collaboration of the partners, to increase efficiency-and to reduce travel- both face-to-face and remote meetings will be organized.

Guidelines for meetings are presented in section 7.5.1, where a list of the main consortium contacts may be found at the Teams folder.

- **E-mail**: To facilitate e-mail communication for the project a project-wide list including all consortium members active to the project is compiled, indicating which person should be included in relevant topics (e.g., WP-specific mailing lists can be set up for a specific topic).Every email relevant to SoilWise, either sent to a SoilWise mailing list or to a number of members, should have a subject starting with "[SoilWise]", to easily distinguish SoilWise emails from others.

- **Document repository**: In addition to the external-facing project website and due to the need for frequent exchange of documents which often exceed the file size limit of e-mail systems and the structuring of project information, a project-only collaboration space was needed. Towards this, a Teams folder has been setup, to serve as the document repository that will be used to store and facilitate the exchange of documents (several templates for reporting, deliverables, etc.). This space serves as a private document repository, so only the partners can access and share all research and project documentation from final deliverables through presentations and other relevant information, while avoiding broadcasting of the project data and results. The structure of the project space is shown below:
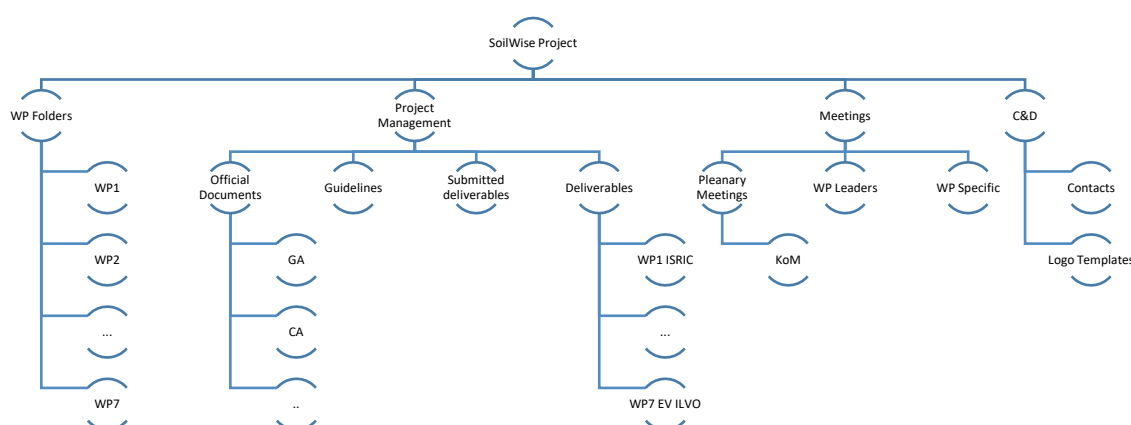

Figure 7 - Document Management System (DMS) directory structure

The folder structure of the Teams enables easy and intuitive navigation and management, while users are able to find what they need quickly and effortlessly. Once a user login into the Teams s/he has access to the main folder that contains subfolders.

- The «Project Management» folder maintains all information related to project such as the official documents (e.g., the Grant Agreement, Consortium Agreement, and Amendments), project's templates, logo and the deliverables that have been submitted to the EC.
- The "WP Folders" contain subfolders for each of the 7 WPs of the project. Each WP folder contains a child-folder for each deliverable in the WP where all deliverable-related materials are maintained within.

- The "Meetings" folder contains subfolders for each meeting (e.g., WP Leaders and Plenary Meetings) that takes place in the project i.e., agendas, presentations, meeting minutes, templates. Summarizing:

- Consortium members are encouraged to use Teams for project related exchange. In particular, members are encouraged to use links to Teams documents instead of attaching them to the email exchanges.

- Online collaboration tools: Partners are encouraged to utilize online collaboration tools (preferable Teams to maintain the history) to facilitate their day to day work. SoilWise project management places no restriction on the use of tools, however, strongly advices the partners to examine the terms and conditions of these tools in relation to licenses, copyright restrictions and confidentiality as inadvertently may be disseminating confidential information to the public.

- SoilWise public website (www.SoilWise-he.eu) is the main online tool of the project. The Dissemination Manager administers the site as dissemination leader and controls the publication of information generated under the project's umbrella such as the project's outputs, the organization and participation in events.

- A wide range of online channels has been created to disseminate the main outcomes of the project and promote consortium's presence in key events and the organization of workshops and webinars. In total, 4 social media accounts will be used to maximize the generated impact and to reach and attract all targeted stakeholders:

SoilWise Linkedin group

SoilWise Facebook page

SoilWise Twitter Page

SoilWise YouTube channel

Table 15 – SoilWise's online channels

8 Effort and Cost Management Plan

8.1 Introduction

The **Project Coordinator** is responsible for managing and reporting on the project's budget and effort consumption at the project level to the European Commission throughout the duration of the project. During the internal semi-annual, interim and annual progress reports, the Project Coordinator collects, presents and reviews the project's effort and cost performance for the preceding period. Performance is measured comparing actual consumption against planned. The Project Coordinator is responsible for accounting for cost and effort deviations and presenting the consortium with options for getting the project back on budget.

8.2 Effort and Cost Management Approach

Effort and costs for this project will be managed at the Task level of the Work Package Structure (WPS). The financial performance of the project will be measured and managed through comparisons between the actual comparison and the effort calendar and cost baselines. Activity effort is detailed at the task level and costs at the WP level. To avoid confusion and complications due to conflicts between National and European Union reporting rules, all efforts are to be reported in full hours. Euro amounts are to be reported in two decimals.

Effort and cost variances of **+/- 10% in the cost and effort performance** indexes will change the status of the cost to cautionary. Cost variances of **+/- 20% in the cost and effort performance** indexes will change the status of the cost to an alert stage. These will serve as input to Risk Assessment and may require corrective action by the Project Coordinator in order to bring the cost and/or effort performance variations below the alert level. Corrective actions will require a project change request and be must approved by the PC before it can become within the scope of the project.

8.3 Planning and Reporting Effort and Costs Consumption

8.3.1 Planning Effort and Costs Consumption

Planning effort and cost consumption occurs through the completion of the project schedule MS-Excel file referenced in section 8 for the entire project at the beginning of the project. Additionally, apart from the personnel costs that are reported as envisaged costs that may be consumed under each Task in person hours, all partners should provide a list of planned other direct costs (i.e. travel and other specific costs) for the whole project duration per reporting period. Finally, all partners should report on their average personnel rate, if the one used in the Annex 2 of the GA is no longer valid. This information is consumed by the PC to produce the Cost Baseline and Effort Schedule.

8.3.2 Reporting Effort and Budget Consumption

The following reports are established:

- Periodic Progress Reports (for external reporting to EC)

More specifically the overall reporting per project period is as follows:

#	Steps per period	Who	To Whom	When	Instrument
1	Each partner provides period effort & cost consumptions, with the effort	Partners	PC	15 days after the	resource consumption

	consumptions, accompanied by work progress description.	50		end of each reporting perid	xlsx file, work description, word file, email
2	For every reporting period, WPLs should manage the collection of task reports from Task leaders. TLs (also in collaboration with the partners involved in each task) should provide a consolidated report and send this to the respective WPL. The reporting should follow the guidelines set by the European Commission for HORIZON Programme**2** and the format of the SoilWise Deliverable .docx template. These reports should also reference any deviations occurred to the project time plan at Task level along with their contingency planning.	Partner TL	TL WPL	TC by each WPL and not later than the end of each reporting period	work description, word file, email
3	WPLs will perform a consistency check between effort and activities taken place by partners in each WP and if needed adaptation/rationalization of effort/activities reported may take place; otherwise this information is transferred to the PC.	WPL	TL, PM or PC	4 days after receipt of reports	e-mail
4	Upload of Financial Form (and Certificate of Financial Statement; where needed) to the European Commission Participant Portal (ECAS system)	Partners	European Commission	30 days after the end of the reporting period (M18, M36 and M48)	European Commission Participant Portal
5	PC consolidates all information received to a complete report to European Commission following the guidelines set by the EC within HORIZON Programme and the	PC	European Commission	60 days after the end of the reporting period	Interim/annual deliverable, European Commission

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2 https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/aga_en.pdf

format of the SoilWise Deliverable .docx template and uploads it to ECAS			(M18, M36 and M48)	Participant Portal

Table 13 - Effort and Budget Consumption reporting procedure

NOTES:
- The preparation of each Periodic Progress Report requires steps 1 - 7.

8.3.3 Guidelines for Unplanned Expenses

The Annex 1 to the Grant Agreement details a **budget** for each partner and for each task or activity in SoilWise. Any effort or cost allocation which deviates from this plan presents an unplanned expense. In general terms, unplanned expenses are not allowed. However, due to the realities of implementing a project, there is the possibility that reasonable and justifiable expenses contributing to the project and not contradicting the rules of the project may be eligible.

If a partner has a cost which they believe falls under this category, they must obtain permission from the Project Officer before incurring the cost. To do so, they need to discuss the issue with their WPL. If they concur, they should e-mail the PC with a justification for the cost requesting from the PC to obtain approval from the Project Officer. Follow due diligence, the PC may reject the justification and inform the partner or accept it and forward the justification to the Project Officer. Once the PC receives a response from the Project Officer they inform the partner.

For **travel outside the European Union** for dissemination this procedure is particularized as follows: Partners must send a request via e-mail to the WP6 leader well in advance of the trip. The e-mail must contain the following information:

- Who is travelling
- Destination of the trip
- Date of the trip
- The trip's relevance to the SoilWise project.

The WP6 leader will examine the request and upon approval, it will forward the requested with the recommended action to the PC. In the event the request is accepted the PC will forward the request to the Project Officer who has the final say on the matter. The partner will be informed of the decision.

8.4   Measuring Project Effort and Costs

Following each internal semi-annual report, the PC will use a comparison between actual against planned to measure variance.

If the effort and cost has a variance of between 10% and 20% of planned the reporting PM must report the reason for the exception. If the variance is greater than 20% the reporting PM must report the reason for the exception and provide the General Assembly with a detailed corrective plan to bring the project's performance back to acceptable levels.

8.5   Effort and Cost Variance Response Process

Once the variation exceeds the 20% threshold, the reporting PM must present the General Assembly with options for corrective actions. The General Assembly will meet to select the best option. The PM will develop corrective action plan to bring the project back on track. Once the General Assembly

approves the plan, the change control procedure will be activated and the action plan will become part of the project plan.

8.6   Cost Change Control Process

The cost change control process will follow the established project change request process. Approvals for extreme project effort/cost changes may require a contract amendment.

9 Procurement

During the project, partners will be required to acquire from third parties the following services:

- Auditing Services for partners exceeding the threshold funding value
- Organization for online or offline meetings for training, dissemination, project meetings, piloting and validation
- Production of dissemination material
- Transportation and accommodation for travel
- Software or hardware equipment (e.g. laptops, parallel processing nodes, license software for modelling activities etc.). From the original proposal and SoilWise DoA, we do not foresee such costs. However, the consortium should investigate this possibility, in case this becomes necessary.

The PC has oversight of the procurement for the project through the Internal Financial Reports. The actual management for procurement activities falls with the budget-holding partner. The partners assigned with subcontracting budget are responsible for following the procedure agreed in the GA and /or mentioned in the EC guidelines. The partners are required to strictly adhere to the Annex 1 of the GA and Grant Agreement guidelines for purchases. For deviations in purchases, partners must obtain approval before proceeding with procurement.

10 Project Scope Management Plan

10.1 Introduction

The Scope Management Plan provides the scope framework for this project. This section documents the scope management approach, verification and control measures. Roles and responsibilities as they pertain to project scope, scope definition; scope change control; and the project's work breakdown structure have been discussed in earlier chapters. Any project communication which pertains to the project's scope should adhere to the Communication Management Plan.

10.2 Scope Verification

The project deliverables will need to be verified against the original scope as defined in the DoA in the section "List of Deliverables" of Part A of DoA. The verification against the scope occurs through the peer review and approval process described in section 5 of this document. The European Commission review of the deliverables during the period review meeting is the final checkpoint of the acceptance of the deliverables.

10.3 Scope Control

The Project Coordinator, Scientific Coordinator, Technical Manager and partners will work together to control the scope of the project. The project team will leverage the DoA using it as a statement of work for each deliverable. The project team will ensure that they perform the work described in the DoA and generate the defined deliverables keeping as ultimate guide the project vision. When the WPS does not seem to serve the project vision, partners will introduce change requests through the project structure. The Project Coordinator along with the Technical Manager will oversee the project team and the progression of the project to ensure that this scope control process is followed.

If a change to the project scope is needed the change control process for recommending changes to the project must be carried out. Any partner can request changes to the project scope. All change requests must be submitted to the PC, TC, WPL, or TL in the form of a change request e-mail and the process in section 6.5 will be followed.

11 Schedule Management Plan

11.1 Introduction

The project schedule is the roadmap for how the project will be executed. Schedules are an important part of any project as they provide the consortium with a clear picture of the project's status at any given time. The purpose of the schedule management plan is to define the approach to project schedule management including monitoring and controlling changes to the baseline. This includes identifying, analysing, documenting, prioritizing, approving or rejecting, and publishing all schedule-related changes.

11.2 Schedule Management Approach

The project schedule will be in the form of a Gantt Chart. A working version of the current schedule (available as xlsx file in Teams) may be found in the following figure. The first column presents the Work Breakdown Structure of the project. In the first and second row, the calendar year and the calendar months of the projects are shown respectively. Within the area of the 4 years duration, the cells in gray and orange indicate the months where each action and sub-action is active, respectively.
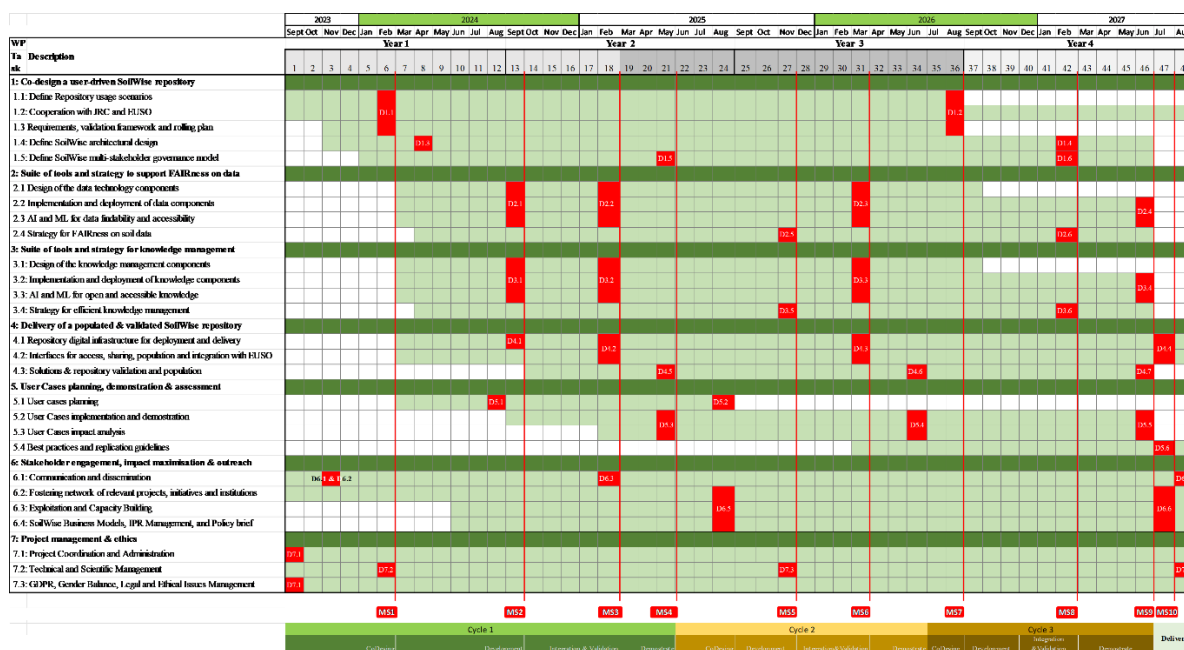

Figure 8 - SoilWise Project Schedule

In the Annex 1 of the GA, the project activities were identified organized in work packages which were broken into tasks. The outcomes of one or more tasks are reported in one deliverable. Task sequencing was used to determine the order of tasks. Task duration estimates were performed to months required to complete tasks within the constraints of the program. Duration and resource estimates are used to assign resources to tasks in order to complete schedule development. These are the steps that will be repeated to adjust the project schedule when changes are required.

The project schedule will be being reviewed by the PC and individual partners on a continuous three-month basis until the project end. In case of deviations, project partners must agree to the proposed resources, effort assignments, durations, schedule, and once this is achieved the General Assembly will review and approve the schedule which will become the new baseline.

The Project Coordinator with the support of the Technical Manager will be responsible for facilitating the schedule development and adjustments. The PC will also create the project schedule using MS-Excel and validate the schedule with the General Assembly and partners. The PC may obtain schedule approval by the Project Officer before re-baselining the schedule especially when that entails major calibrations of the agreed schedule.

The partners are responsible for participating in activity definition, sequencing, and duration and resource estimating. Partners will also review and validate the proposed schedule and perform assigned activities once the schedule is approved.

The European Commission will participate in reviews of the proposed schedule through the annual project review and contract amendments as necessary.

11.3 Schedule Control

The project schedule will be reviewed as necessary on a monthly basis by the respective WPLs following recommendations received by the TM and SC. Better control of the project schedule would be anyway performed during the monthly WP online calls, as they are foreseen to take place during the project course. If a variance of 1 month or more is observed against the Schedule baseline at WP level, the respective WPL will inform the TM, SC and PC who in turn will review the project schedule. Otherwise, project schedule reviews will be held regularly by the PC and partners on a quarterly basis through the preparation of the internal quarterly work package progress status report.

The General Assembly members are responsible for discussing schedule variances during the General Assembly meetings, determining impacts; submitting schedule change requests; and reporting schedule status in accordance with the project's communications plan.

The partners are responsible for participating in schedule variance resolution activities as needed.

The PC will communicate to the European Commission of the project schedule status and review/approve any schedule change requests as necessary.

11.4 Schedule Changes and Thresholds

If any partner determines that a change to the schedule is necessary, the change control procedure will be initiated. The PC, TM, SC and WPL must analyse the request and determine:

- Which tasks will be impacted and in what way,
- Variance as a result of the potential change,
- Alternatives or variance resolution activities they may employ to see how they would affect the scope, schedule, risks, quality and resources.

If analysis shows that the proposed change may affect the duration of any individual task or the overall project by 1 month, a change request is required. Any other change requests that do not meet this threshold may be submitted for consideration.

Once the change request has been reviewed and approved, the PC is responsible for adjusting the schedule and communicating all changes and impacts to the consortium and the European Commission. The PC must also ensure that all change requests are documented in the change log.

12 Risk Management Plan

12.1 Risk Methodology

Risk management is as an overarching process that encompasses risk planning (identification, assessment, analysis, mitigation planning) and risk abatement (mitigation plan implementation, tracking, risk reassessment), in an iterative cycle until the end of the project, to ensure that risks are identified in a timely manner and handled proactively.

In more detail, this involves identifying a risk, assessing its importance and evaluating whether the risk level is higher than the risk that could be accepted for the project. In case that a risk exceeds the acceptable levels, a risk analysis activity will be instantiated that will define the required actions, in order to set the risk within acceptable levels. In addition, the management of risks also involves the planning of the required activities to handle the risk, the redistribution of resources, the evaluation of the results, as well as ensuring the stability of the new status.

Figure 9 - Risk Management Process

Timely awareness and reaction to potential problems are crucial to effective risk management. The primary objective is to avoid reasonless project breaks, budget excess and uncontrolled time-schedule extensions, and for that purpose a number of internal and external risks were identified even from the beginning of the project and will be constantly be updated; these are described in the following subsections.

Internal risks will be minimized and managed by using well-established methodologies for project planning and project control. The splitting of project work into individual packages also minimizes internal risks. The Project Coordinator, the Scientific Coordinator and the Technical Manager in cooperation with the Executive Board will be mainly responsible to handle internal risks and inform all partners when necessary. The management of external risks lays primarily on the hands of the Project Executive Board. External risks will be minimized by following closely on technological and business development in the field as well as on pertinent regulatory issues.

12.2 Risk Identification

Risk Identification is the first key activity that examines each element of the program to identify associated risks and set the stage for their successful management. The risks that will be documented in the context of SoilWise will be classified according to their probability and severity.

A baseline set of risks shall be identified and entered as risk statement through a Risk Information Form.   Each risk is identified by number (for configuration control) and have a responsible partner/person (s) assigned as risk owner. The risk owner has the overall responsibility for risk management activities until final closure of the risk.

12.3 Risk Assessment and Analysis

Once the Risks have been identified they should be analysed and assessed as to the likelihood (what's the "chance" it will go wrong) and consequence of occurrence (what's the "effect" on the project if it does go wrong).

The level of likelihood of each risk is established utilizing the following specific criteria.

Level	Likelihood	Probability of Occurrence
1	Not Likely	~10%
2	Low likelihood	~30%
3	Likely	~50%
4	Highly Likely	~70%
5	Near Certainty	~90%

Table 14 - Level of risk likelihood

The level of consequence of each risk is established utilizing a number of criteria related to a concrete situation or a recognized hazard. Examples include performance, schedule, cost, supportability, producibility and security. Finally, the overall impact is assessed and the level of consequence is calculated as follows:

Level	Impact of Occurrence
1	Negligible
2	Minor
3	Moderate
4	Significant
5	Severe

Table 15 - Level of risk consequence

Each partner shall contribute to the risk assessment process by the identification and definition of the risks from their perspective of the project. The following matrix calculates quantitatively the risk "score" as illustrated in the matrix below. The matrix is not symmetric as consequence values are weighted more than likelihood values.
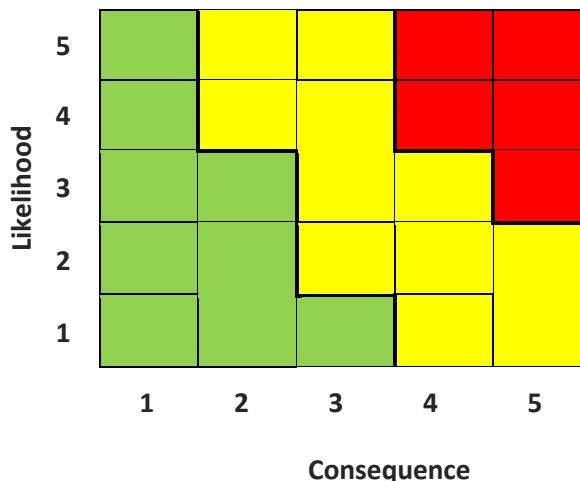

Figure 10 - Assessment of the identified risk according to its likelihood and consequence levels

The following table converts the score to a qualitative risk assessment.

Risk Level	Definition
LOW	Has little potential to cause disruption of schedule, increase in cost, or disruption of performance. Normal company effort will probably be able to overcome difficulties
MEDIUM	Can potentially cause some disruption of schedule, increase in cost, or disruption of performance. However, special effort will probably be able to overcome difficulties.
HIGH	Likely to cause significant serious disruption of schedule, increase in cost, or degradation of performance even with special effort and close monitoring of the contracting activity.

Table 16 - Risk score assessment

12.4 Risk Mitigation

Risk mitigation planning identifies, evaluates, and selects options to lower risk at acceptable levels given program constrains and objectives.

This can be accomplished through reduction in likelihood, reduction in consequences, or a combination of both. It includes the specifics of **what** should be done, **when** it should be accomplished, **who** is responsible, and the **resources** required to implement the risk mitigation plan.

12.5 Risk Mitigation Plan Implementation

The next key activity is the Risk Mitigation Plan Implementation which ensures successful risk mitigations occurs. It:

- directs the teams to execute the defined and approved risk mitigations plans,
- outlines the risk reporting requirements for on-going monitoring and
- documents the change history.

Implementing risk mitigation should be accomplished by risk category (technical performance, schedule, cost) and it's important for this process to be worked through the WBS level to scrub and endorse the risk mitigations of lower levels. It is important to mitigate risk where possible before passing it up to the next WBS level.

12.6 Risk Tracking

The final key activity is risk tracking which is the activity of systematically tracking and evaluating the performance of risk mitigation actions. The PC monitors progress and regularly updates risk status and information. Risk tracking is actually a feedback procedure where risk abetment plans may be revised or updated based on risk status update. If the plan is not effective, alternative plans must be put in place to ensure that risk is appropriately handled.

A project Risk Register is to be kept and reviewed at the EB physical meetings. For each identified risk the Risk Register shall detail at least:

- Risk title;
- Risk description;
- Description of the risk impact;
- Log date;
- Likelihood;
- Its potential consequence on the project;
- Work package in which the risk is managed;
- Risk owner;
- Risk status (Open / Occurred / Not occurred / Cancelled);
- A list of envisaged solutions / mitigation plan
- The deadline for decision;
- Progress / comments.

12.7 Risk Baseline

The SoilWise consortium partners have realized that they take the responsibility of an ambitious, innovative project with major strategic impact. As a result, a preliminary list of identified risks along with their contingency planning is presented in "List of Critical Risks" of Part A of the GA. These risks have also been extended in more detail, per WP, in the following table.

13 GDPR management.

13.1 . Data protection

All consortium members signed the consortium agreement which states that all parties shall cooperate in order to enable one another to fulfill legal obligations arising under applicable data protection laws *(the Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data and relevant national data protection law applicable to said Party)* within the scope of the performance and administration of the Project and of this Consortium Agreement. In particular, the parties shall, where necessary, conclude a separate data processing, data sharing and/or joint controller agreement before any data processing or data sharing takes place.

Personal data will be collected and processed only if, and to the extent, necessary. Prior to any interaction, respondents and participants of interviews will receive information on what will happen with their personal data, and what their rights are in this respect. If participants think that certain information should not be used or consider some information incorrect, they can contact the designated data protection officers with their requests at the visibly marked contact e-mail address. If the participants consider that their personal information has not been handled in the correct way, they will also have the right to make a complaint.

13.2 Archiving and storage/preservation

Collected and generated data will be curated and preserved in secure data repositories that will follow up to date quality, security, privacy standards and relevant legislation of the EU (i.e., GDPR). Also, a system for data security is going to be used as a reference model for curation and preservation. Moreover, all data that can encompass any personal data protection or privacy and IPR will be stored in the project repository for a defined max storage period, given the stakeholder's consent, and will not be publicly disclosed unless otherwise agreed by the stakeholder. SoilWise will contribute to the development of the European Soil Observatory (EUSO). To ensure that relevant knowledge and project outputs (including data) are fed to the EUSO, the consortium will identify in the DMPs which knowledge and specific datasets might be of relevance to the EUSO and how they would be made accessible (including considerations on ownership). The DMPs will be made available to the JRC to validate their relevance and provide recommendations on how the integration of knowledge to EUSO can be organised.

During the project's life cycle, task T5.1 will provide the necessary means for organizing, managing, maintaining and making data and knowledge available to authorised entities. After or even before SoilWise is completed, discussion for the maintenance of the SWR along with the respective data and knowledge will be perfomed with EUSO, JRC. These pathways will be further elaborated and developed within exploitation activities, more specifically within T7.3.

13.3 co-creation approach

SoilWise will gather privacy-preserving user requirements in the co-design workshops to understand which techniques are more relevant to develop in this activity. Active involvement of stakeholders since the beginning of the process will guarantee that the developed solutions respond to end-users needs. Inspired by RRI (Responsible Research and Innovation) and Open Innovation, SoilWise will follow a co-creation approach to define tailored and contextualized engagement strategies and agile methodologies for maximising the sustained social acceptance of the SoilWise solutions. All data

gathered from involved end-users during the co-design process and the demonstrations will be pseudo anonymised, if needed for GDPR compliance, prior to processing and persisted for a defined maximum storage period. Ethical approval (informed consent) will be secured beforehand.

14 Gender balance

14.1 Gender analysis

SoilWise will overcome gender bias by disaggregating social and biological differences between man and woman as well as other gender identities. We will contribute to a more inclusive research and innovation by integrating related activities with the gendered innovations proposed by EC25 serving as inspiration. Project management activities control over engagement with gender issues in the project activities, and will include them in the reporting period's reports. SoilWise will build targeted objectives with respect to gender equality covering proportionality and balance in research activities, scientific and linguistic bias, equal projects' results and connections with established gender activities.

14.2 Proportionality and balance in research activities

The promotion of the equal participation of women and men at all project levels will be ensured. All partners are encouraged to increase women's participation in their activities, including management, research, conceptualisation, analysis, and networking, and to ensure equal opportunities, recruitment and working arrangements. All partners provide equal opportunities for employment and participation in multinational research projects, with special care to contribute to lessening the disparities being a result of COVID-19 pandemic (e.g., by offering flexible working schedules to parents of both genders).

14.3 Scientific and linguistic bias

Within SoilWise methodology, gender, age- and group-specific interests and effects will be systematically examined in each project development phase that follows co-design methods. Addressing texts and material written in English should be done according to the guidelines for gender-neutral language. Within WP1 co-design activities, local population and users will be differentiated based on (survey/expert-opinion derived) gender/class-dependent degrees of risk-aversion to gauge their sensitivity to perceived and actual threats and provide appropriate information and community engagement that respects the differing impacts to people of different gender, social and economic status.

14.4 Equal projects' results

Dissemination (quotations, visibility), communication in general public through releases and press, industry or agricultural stakeholders, policy recommendations and institutional regulations, and business and project results should be addressed equally to all genders and adjusted according to their profile and needs.

14.5 Connection with established gender activities

SoilWise will seek connections with gender organisations and EU institutes, academic departments studying gender, national gender equality bodies, etc., for information, knowledge acquisition, sharing, and participation in activities and provision.

14.6 Gender equality plan

12 out of 15 of consortium partners have submitted their gender equality plan in the System for Grant Management (SyGMa). The remaining partners do not have an obligation to have a plan since they belong to the private sector.

15 Legal and Ethical Issues

All consortium partners signed the Consortium Agreement (CA), whereby the rights and obligations of the parties concerning inter alia liability, access rights and dispute resolution are well laid out.

When preparing the proposal, an ethics self-assessment was also conducted, and an ethics issues table completed. The proposal consequently underwent and passed an ethics review.

15.1 Consortium agreement

15.1.1 Breach

In the event that the General Assembly identifies a breach by a Party of its obligations under this Consortium Agreement or the Grant Agreement (e.g. improper implementation of the Project), the Coordinator or, if the Coordinator is in breach of its obligations, the Party appointed by the General Assembly, will give formal notice to such Party requiring that such breach will be remedied within 30 calendar days from the date of receipt of the written notice by the Party.

If such breach is substantial and is not remedied within that period or is not capable of remedy, the General Assembly may decide to declare the Party to be a Defaulting Party and to decide on the consequences thereof which may include termination of its participation.

15.1.2 Involvement of third parties

A Party that enters into a subcontract or otherwise involves third parties (including but not limited to Affiliated Entities or other Participants) in the Project remains responsible for carrying out its relevant part of the Project and for such third party's compliance with the provisions of this Consortium Agreement and of the Grant Agreement. Such Party has to ensure that the involvement of third parties does not affect the rights and obligations of the other Parties under this Consortium Agreement and the Grant Agreement.

15.1.3 Liability towards each other

In respect of any information or materials (incl. Results and Background) supplied by one Party to another under the Project, no warranty or representation of any kind is made, given or implied as to the sufficiency or fitness for purpose nor as to the absence of any infringement of any proprietary rights of third parties.

Therefore,

- the recipient Party shall in all cases be entirely and solely liable for the use to which it puts such information and materials, and
- no Party granting Access Rights shall be liable in case of infringement of proprietary rights of a third party resulting from any other Party (or its entities under the same control) exercising its Access Rights.

Furthermore, no party shall be responsible to any other party for any indirect or consequential loss or similar damage such as, but not limited to, loss of profit, loss of revenue or loss of contracts, except in case of breach of confidentiality. A party's aggregate liability towards the other parties collectively shall be limited to once the party's share of the total costs of the project as identified in annex 2 of the Grant Agreement. A party's liability shall not be limited under either of the two foregoing paragraphs to the extent such damage was caused by a willful act or gross negligence or to the extent that such limitation is not permitted by law.

Finally, the CA states that each party shall be solely liable for any loss, damage or injury to third parties resulting from the performance of the said party's obligations by it or on its behalf under this CA or from its use of results or background.

15.1.4 Force majeur

No Party shall be considered to be in breach of this Consortium Agreement if it is prevented from fulfilling its obligations under the Consortium Agreement by Force Majeure. Each Party will notify the General Assembly of any Force Majeure without undue delay. If the consequences of Force Majeure for the Project are not overcome within 6 weeks after such notice the transfer of tasks - if any - shall be decided by the General Assembly.

15.1.5 Human participation

SoilWise will engage stakeholders through co-design and evaluation workshops. The aim is to gain an understanding of requirements and user needs in order to steer the development work. Different user groups are envisioned to be included as external evaluators/input providers: Entrusted Entities, policymakers, and different types of end users. Participants will be fully informed about the project and their participation will be entirely voluntary. Research will be carried out across Europe, primarily in the partner countries. In addition to these research activities, the project will organise events and other meetings with the abovementioned stakeholder groups.

15.1.6 Personal data

The project will not collect personal data such as self-identified ethnicity, gender and age from the participants. The fundamental principles outlined in the Charter of European Fundamental Rights complemented by the GDPR, such as human dignity, the integrity of the person, the protection of personal data to ensure privacy, will be fully respected and promoted in the project. The project will not include any research on vulnerable populations.

15.2 Ethics self assessment

SoilWise will ensure the compliance with the ethical principles and the applicable EU, international, and national laws for the ethics issues identified in the Ethics Summary Report and any additional ethics issues that may emerge in the course of the grant. The SoilWise consortium confirms that for any applicable ethics issue, the guidance provided in the European Commission Ethics Self-Assessment Guidelines will be rigorously followed.

15.2.1 Ethical dimension of the objectives, methodology and likely impact

In relation to human ethical issues, SoilWise addresses the following: (i) the involvement of human participants, (ii) the protection of personal data, and (iii) import and export of data to non-EU countries.

SoilWise will engage stakeholders through co-design and evaluation workshops. The aim is to gain an understanding of requirements and user needs in order to steer the development work. Different user groups are envisioned to be included as external evaluators/input providers: Entrusted Entities, policymakers, and different types of end users. Research will be carried out across Europe, primarily in the partner countries. In addition to these research activities, the project will organise events and other meetings with the abovementioned stakeholder groups.

Artificial Intelligence AI will be applied to interlink scattered data and knowledge, automatise the processes, infer new knowledge and increase FAIRness. The algorithms will automatize the processes of metadata harvesting/extraction, knowledge inference, data validation and improve the searching capabilities with AI and ML techniques. In the past few years, ethical questions associated with the

usage of ML have been the subject of academic and public scrutiny. The EC has recently published guidelines on "Requirements of Trustworthy AI".

Based on these guidelines and the active experience of the consortium researchers and technologists in data technologies, soil science & knowledge, remote sensing and proximal sensing and decision-making R&D, that confirms that there are no ethical concerns in the developments of SoilWise.

Additional measures have been taken in the SoilWise data management plan to conform with the upcoming AI act(in legislative process). According to the objectives and methodology of SoilWise there are no ethical concerns in the implementation and execution of the project.

15.2.2 Compliance with ethical principles and relevant legislations

The project will not include any research on vulnerable populations. The machine learning and artificial intelligence parts of the project will apply to remote sensing prototypes and will not apply to population monitoring. Our AI systems will not subordinate, coerce, deceive or manipulate people, and will not create attachment or stimulate addiction. All data sets and processes associated with AI & machine learning decisions will be well communicated and appropriately documented; best possible efforts will be made to avoid unfair bias; no possible risk or harm is anticipated.