

Soil Moisture — Scope and Boundaries

Domain: Soil Moisture

Track: D — Knowledge Base Population

Status: ACTIVE (descriptive, reviewer-safe)

1. Thematic Scope

Within SAL, **soil moisture** refers to the quantitative description of the amount of water contained in soil layers, as observed or derived by Earth observation systems and referenced by EU programmes.

This scope includes: - Surface and near-surface soil moisture variables - Descriptive indicators derived from satellite observations - Contextual use within land, climate, and environmental monitoring

Soil moisture is treated as an **environmental descriptor**, not as a management or decision variable.

2. Spatial Scope

The spatial scope of soil moisture information within SAL reflects the characteristics of EU-referenced datasets:

- Continental to global coverage (satellite-based products)
- Regional and local coverage (in-situ measurements)
- Spatial resolution defined by sensor and product specifications

SAL does not harmonise or resample spatial resolutions and does not infer field-level conditions.

3. Temporal Scope

The temporal scope includes: - Regular observation cycles defined by satellite revisit periods - Aggregated temporal products (e.g. daily, dekadal, monthly), where documented by services - Long-term records used for climate and environmental context

SAL does not perform temporal interpolation, forecasting, or trend projection.

4. Measurement and Product Boundaries

Soil moisture information within SAL may originate from: - Passive microwave satellite observations (e.g. L-band) - Derived soil moisture products documented by ESA and Copernicus services - In-situ sensor measurements used as reference or validation data

SAL does not evaluate retrieval algorithms, uncertainty metrics, or model performance.

5. Explicit Exclusions

The following are **explicitly outside scope**: - Crop yield estimation - Irrigation scheduling or recommendations - Drought forecasting or early-warning systems - Agronomic, economic, or policy interpretation - AI-driven inference or optimisation

SAL maintains a **strictly descriptive boundary** for soil moisture content.

6. Positioning Summary

Within SAL, soil moisture is positioned as: - A measured or derived environmental variable - One component within broader land and climate monitoring frameworks - Input context for understanding datasets, not for decision-making

This scope definition ensures suitability for EU reviewer and grant contexts.