

SoilHarmony: Towards a harmonised pan-European monitoring of soil health descriptors

Antonio Bispo, Emile Maillet, Maria Fantappie, Elena Tondini, Chiara Piccini, Lucas De Carvalho Gomes, Mathieu Lamandé, Johanna Wetterlind, Claudia Cagnarini, Bruno De Vos, Hans Van Calster, Bruno Huyghebaert, Julien Herinckx, Fenny van Egmond, Jesper Emborg, Marion Beguerie, Thomas Cesbron and Julie Signoret

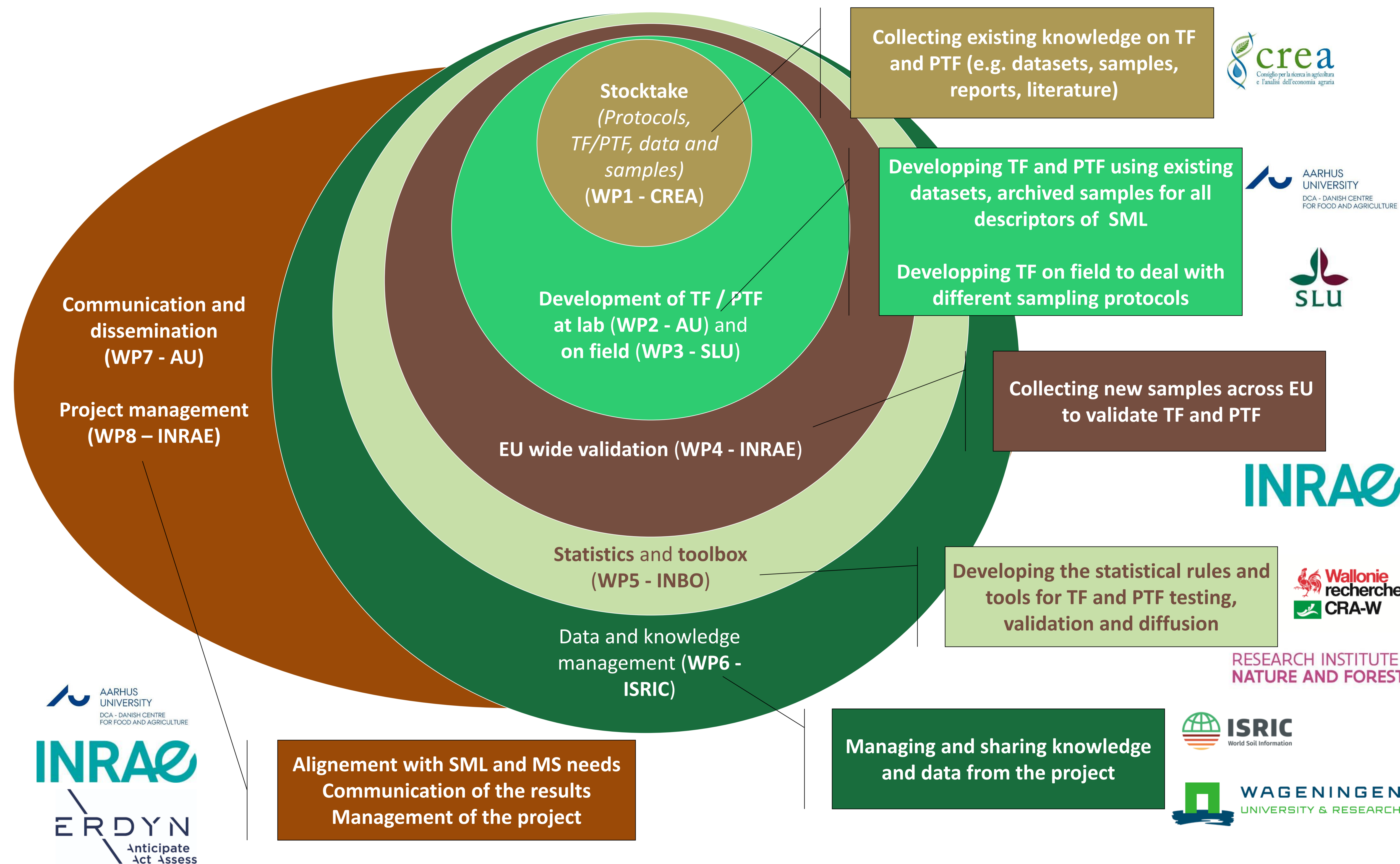
Context

- The **EU directive on soil monitoring and resilience (SML)** requires Member States to monitor their soils using a harmonised approach.
- In Europe, **several national soil monitoring networks (SMN) already exist.**
- **Harmonisation approaches are needed**, as existing systems cannot be significantly modified (due to the need for temporal continuity)
- **Transfer functions (TF)** are a way to harmonise data between SMN. TF are included in the SML.
- **SoilHarmony** is a Soil Mission project involving 21 Member States (MS), starting in June 2026 and dealing with all descriptors of the SML.

Transfer and pedotransfer functions

- **Transfer function (TF):** mathematical formulae that help convert the results from one method or protocol to the reference one (e.g. *estimate pH measured in water from pH measured in KCl*).
- **Pedotransfer function (PTF):** mathematical formulae used to combine soil properties to estimate another property or a function difficult or expensive to measure (e.g. *particle size distribution and/or organic carbon content can be used to estimate bulk density*).

The project at a glance



Expected outcomes

- 1 Easy access to validated TF/ PTF for all descriptors of the SML as centralized in an App
- 2 FAIR (data for) laboratory and field methods used in the EU
- 3 A high quality dataset that allows to derive and assess transfer functions
- 4 Enhanced understanding of the applicability of statistical methods
- 5 Harmonised soil health assessments possible across the EU

Interested ?

If you are experienced in TF/PTF development, contact us and join the group !

antonio.bispo@inrae.fr