SoilHive

Unlocking soil data for a sustainable future

MARCH 2025

Challenges with the current soil data system

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Limited access & fragmentation

High variability in soils complicates accurate assessments.

Soil **data is scattered across organizations**, making access and synthesis difficult

(Paterson et al., 2015)

Lack of standardization

Legacy **data is incomplete** and hard to combine with new sources.

Lack of common standards leads to inconsistencies and knowledge gaps

(Todd-Brown et al., 2022)

Uneven data coverage

Global soil data **coverage is uneven**, with southern regions like often relying on global soil **maps that may not accurately represent local conditions**

(Bodenstein et al., 2022)

Barriers to sharing

Soil data is **not easily shared across regions**, limiting collaboration

Poor metadata and documentation make **many datasets unusable**

(Todd-Brown et al., 2022)

Building a playground for different stakeholders

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Soil Data Discovery
> Access and download soil data instantly
> Retrieve metadata and explore datasets on the fly

Data Sharing and Networking
> Share soil data under customizable licenses
> Expand soil knowledge while increasing visibility

Data Gap Analysis
> Assess availability across regions and time
> Avoid duplication by leveraging existing datasets
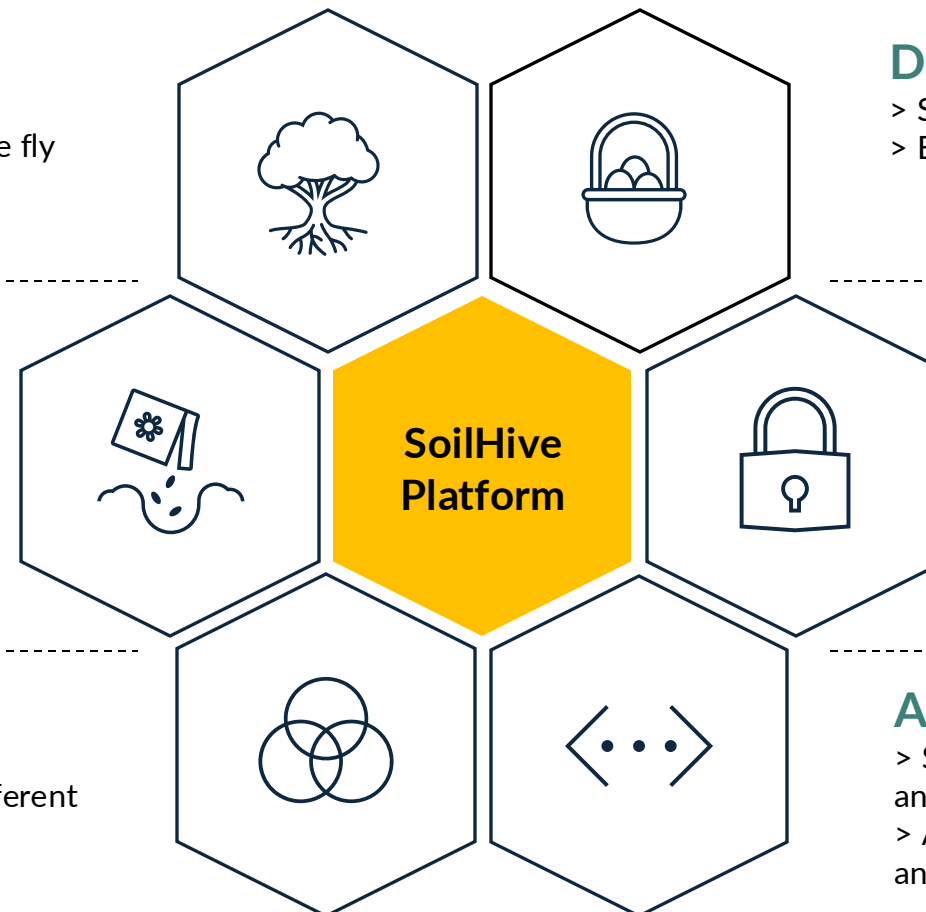
SoilHive Platform

Private Data Hub
> Secure data sharing with authorized users
> Easy discoverability to partners thanks to standardized metadata

Comparison
> Validate and cross-check multiple sources
> Analyze variations in soil properties across different locations

API Integration
> Seamless connection with FMIS, AgTech, FinTech and other applications
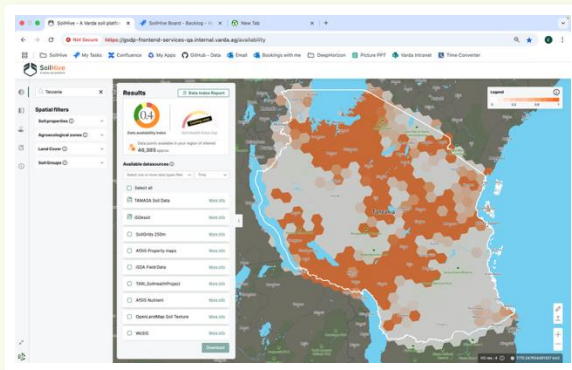> Access to structured soil data for AI training and analytics

A unique value proposition
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Faster access

Find the right data instantly

- No more scattered sources, **everything in one place**
- **Standardized formats** for seamless use across platforms.
- **Field-specific tracking** ensures precision and reliability

Open & secure collab.
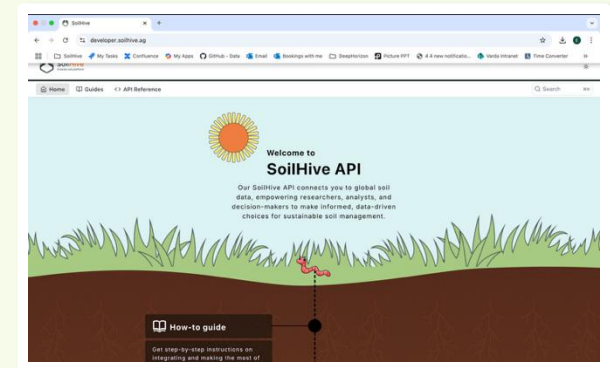
Your data, your way

- **Choose how to share:** Open access or secure sharing via **Private Data Hub**
- **Increase the visibility of your data** and connect with potential collaborators
- Work within a community!
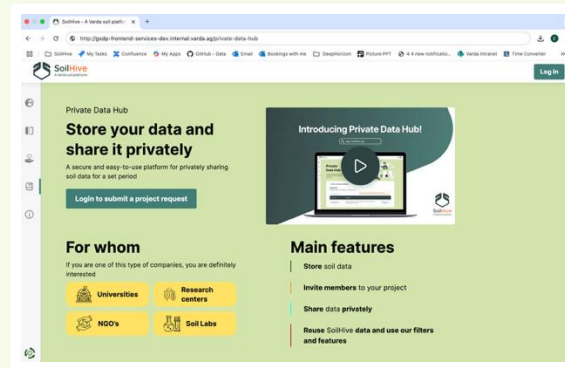
Interop. & integration

Make data work for you

- **API-ready** to connect effortlessly with FMIS, AgTech, and research tools
- No black-box analytics
- Enhance existing tools

Bringing value to different stakeholders
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TARGET USERS	WITHOUT SOILHIVE	WITH SOILHIVE
Scientist	Researchers spend **40% of their time** searching for and cleaning soil data, often relying on scattered, unstructured sources.	**Easy access to structured soil data** for long-term studies, predictive analytics, and AI models. Enables validation of remote sensing applications and reduces duplication efforts.
Policy Maker	Lack **visibility on available soil data** beyond their geography and across time, making it difficult to address global environmental challenges or identify underserved regions.	**Evidence-based policymaking** in agriculture & land management. Monitor **land degradation, climate adaptation, and soil fertility trends** to support sustainability efforts.
Agribusiness & AgTech Companies	**Data is fragmented** and difficult to integrate into decision-making tools. Information is often not linked to specific fields, making reuse challenging.	Effortless **soil data access & integration** into any digital agricultural solution. Enables better fertilizer recommendations, sustainability claims, and improved crop management strategies.
Soil Data Owner (farmer, institute, governmental dept)	Setting up and maintaining a **custom soil data infrastructure** is **expensive** and requires specialized skills.	**Private Data Hub** for secure storage while leveraging SoilHive's global dataset and features. **Improved insights** through metadata sharing and expanded data availability.

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THANKS!

Do you have any questions?

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