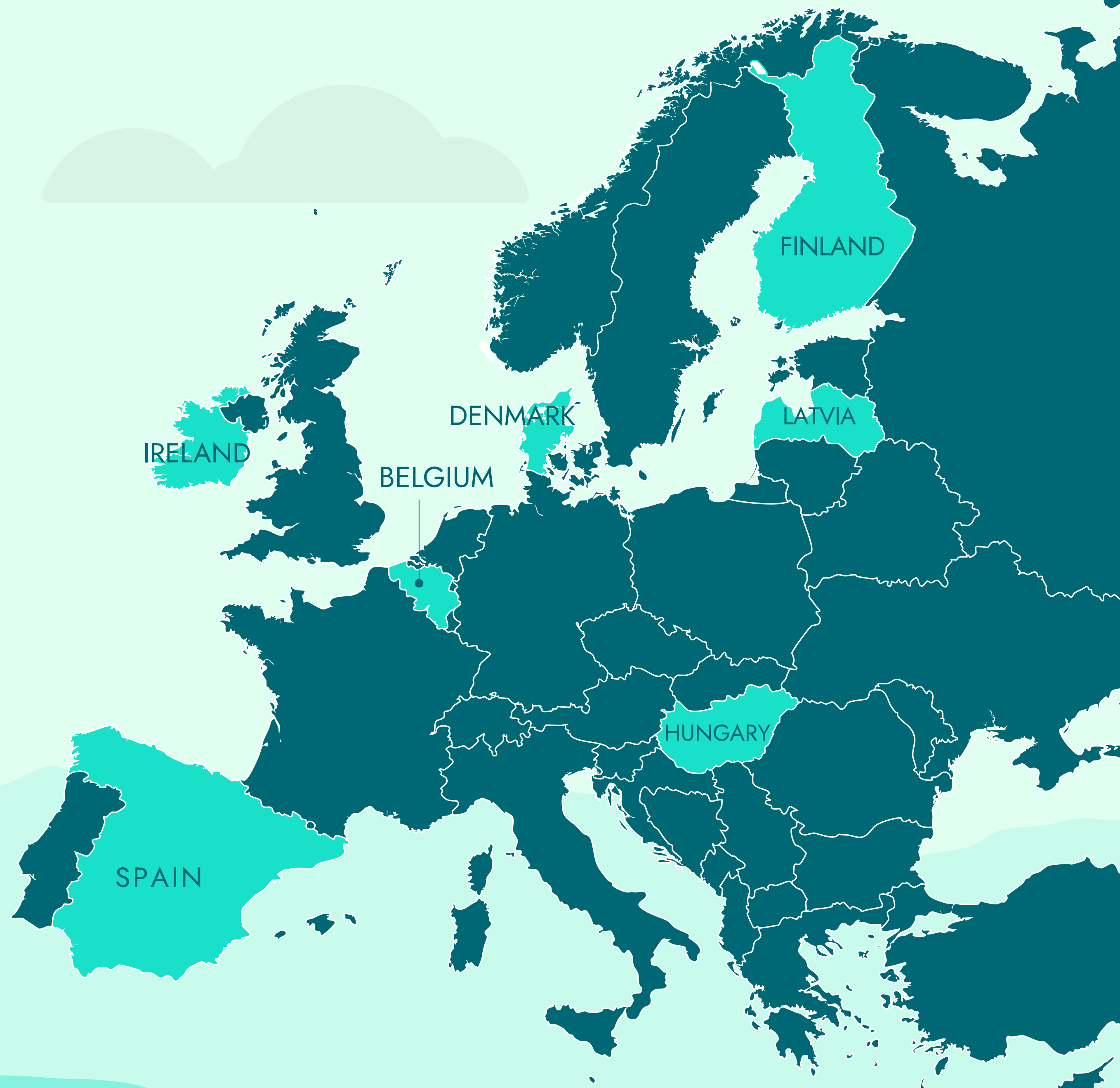


# SOILGUARD

## Impact of climate change stressors on soil biodiversity status

Maintaining soil health is a complex challenge that arises from a web of interconnected factors. Social choices, like the land management practices and ecological forces, including the increasing threat of climate change, the diversity of life within the soil, and water management practices, all play a crucial role. SOILGUARD explores how these social and ecological factors interact to shape soil health in 7 European regions.

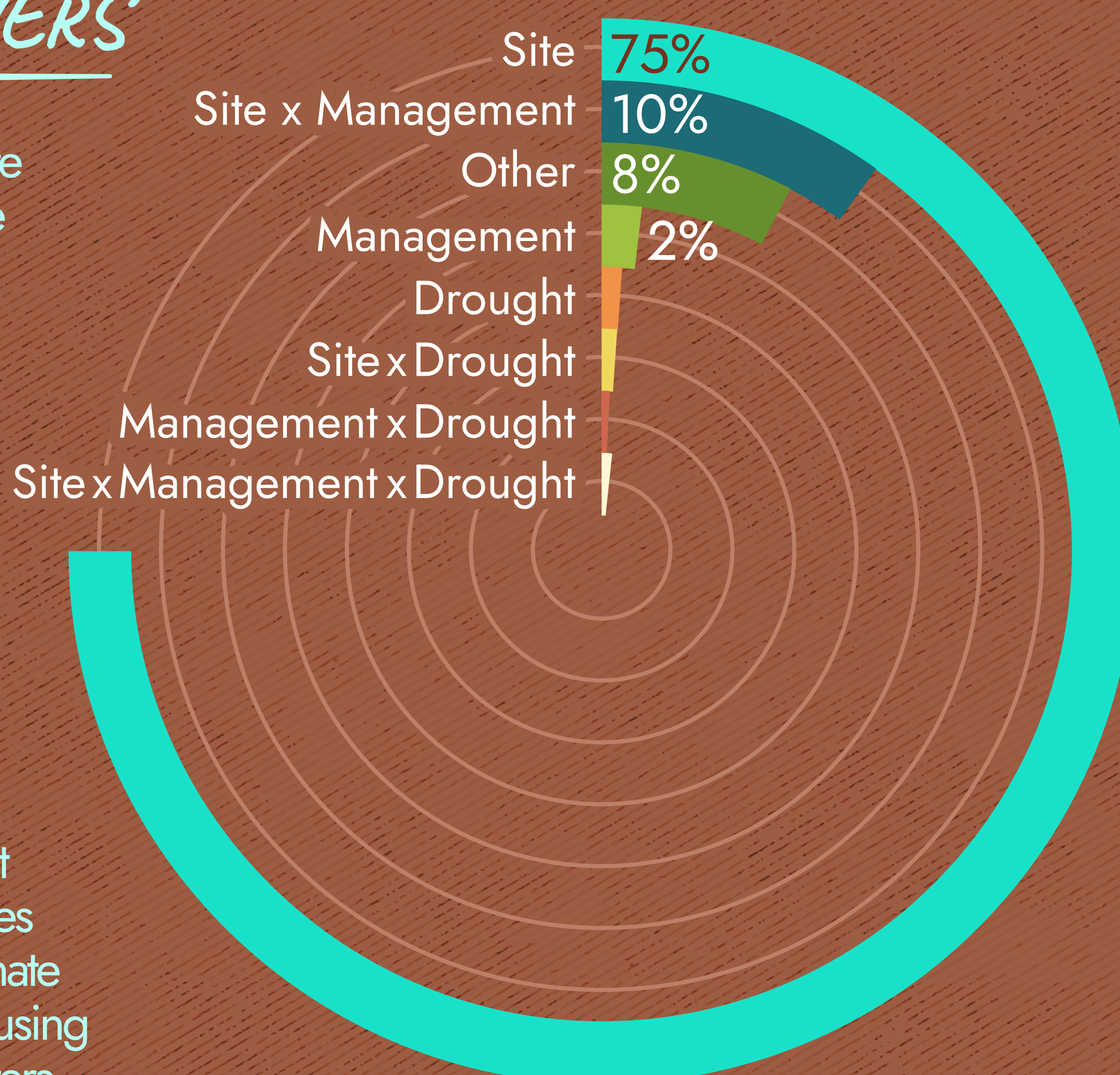


### The share of the different experimental factors explaining the variability in soil biodiversity

#### ECOLOGICAL DRIVERS

Soilguard simulated future climate conditions with respect to the occurrence of drought and heatwaves for 7 EU NUTS-2 regions, each represented by one country and one experimental site.

The experimental sites were located in three different biomes, i.e., cropland (Belgium, Denmark, Hungary, Latvia, Spain), grassland (Ireland) and forest (Finland). Target values for drought and heatwaves were obtained from regional climate models and applied in the field using rainout-shelters and infrared heaters.



#### MANAGEMENT PRACTICES

Each experimental site featured one conventionally managed field (i.e., conventionally managed cropland, mono-species high-input grasslands, and clear-cut forests) and one alternatively managed field (i.e., organically managed cropland, mixed-species low-input grasslands, and continuous cover forests)

### THE INTERCONNECTEDNESS OF THESE SOCIAL AND ECOLOGICAL FACTORS

- The different sites harbor a unique soil biodiversity, with the factor site explaining 54-75% of the variance in soil biodiversity.
- Management effects significantly influenced bacteria, fungi and other microbes living in the soil biota but explained only around 2% of the variability.
- Management effects were highly site-specific, with the interaction between site and management explaining around 10% of the variability.
- While short-term drought effects were less pronounced, alternative management practices appear to offer some buffering capacity against long-term climatic aridity.

#### WHAT CAN BE DONE?

The findings emphasize the importance of a holistic approach to soil health management. By adopting alternative management practices that promote soil biodiversity, farmers can significantly improve soil health, even in areas where land is degraded. The influence of management and drought are highly site dependent. Hence, targeted decision making is encouraged to enhance agroecosystems resilience.

Do you want to know more about specific taxonomic patterns or variability across the different sites? [VISIT OUR WEBSITE](http://www.soilguard-h2020.eu)

#### CONTACT US

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