MICROBES 4CLIMATE

In association with: PHYTOBIOMES ALLIANCE

Funded by the European Union

Navigating the regulatory complexity of microbial interventions for climate change mitigation

About M4C

Legal and Regulatory

Confusing Terminology & Regulatory Ambiguity

Webinar Objectives

About the project 01

Main goal

Understand how microorganisms, plants, and soils interact in the context of climate change;

M4C approach

To provide access to advanced Research Infrastructures (RIs) and expert support, and offer of training opportunities for researchers;

Focus area

1) Study of microbial contributions to biodiversity and ecosystem resilience;

2) Exploration on how microbes can enhance plant and crop resistance to climate stress.

Impact

Strengthen sustainable agriculture and forestry, and support biodiversity conservation under climate change conditions

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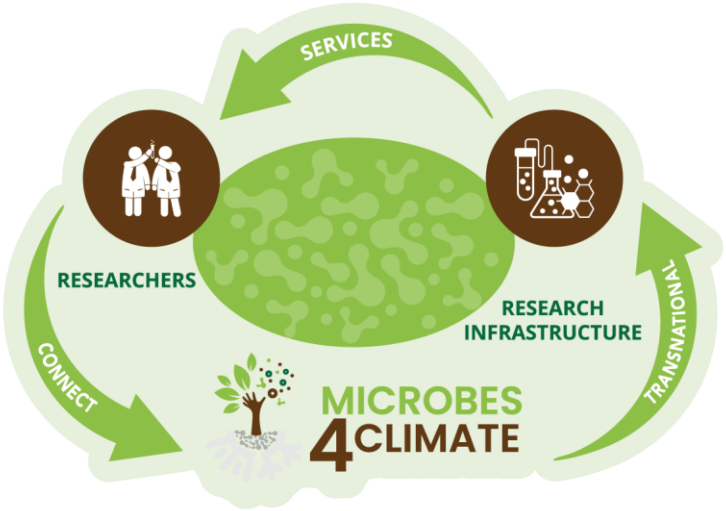
About the project

Project fact sheet



Project name **Microbes-4-Climate**	Acronym **M4C**
Grant agreement n° **101131818**	Topic **HORIZON-INFRA-2023 SERV-01-02**
Total budget (EUR) **14 494 818.43**	Start/End date **Feb 2024/Jan 2029** *60months*

Project Coordinator
MIRRI-ERIC

MIRRI MICROBIAL RESOURCE RESEARCH INFRASTRUCTURE ERIC
EUROPEAN RESEARCH INFRASTRUCTURE CONSORTIUM

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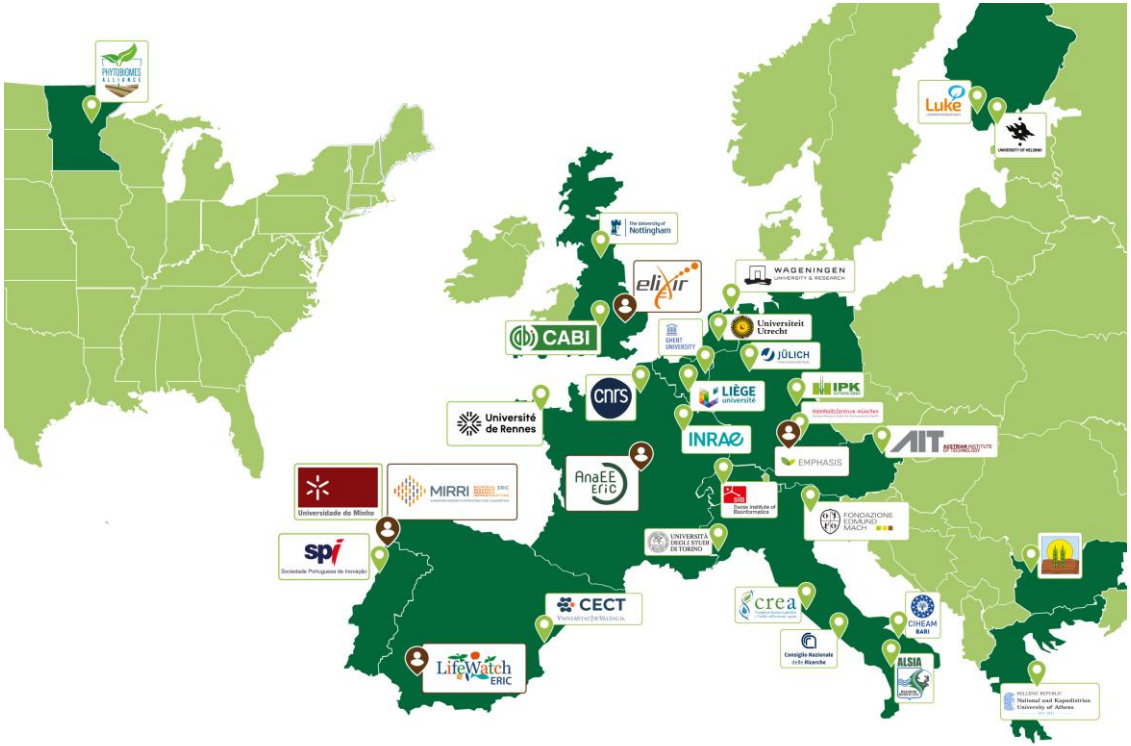
About the project

Project consortium

31 partners
23 beneficiaries,
7 associated entities &
1 associated partner

4 Research Infrastructures
MIRRI-ERIC, EMPHASIS,
LifeWatch-ERIC ,AnaEE-ERIC



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About the project

Main goals

1. Develop and refine frameworks and tools to facilitate access to data and data services essential for research on climate change.
2. Enhance the integration of services offered by multiple Research Infrastructures (RIs).
3. Provide comprehensive training and scientific/technical assistance to both RI staff and researchers/ users to maximise the benefits of the available services and resources.
4. Simplify access to a suite of efficient services (physical, remote, or virtual), aimed at Supporting curiosity-driven research on climate change impacts on terrestrial Biodiversity and ecosystems, including agricultural and forestry systems.
5. Promote active engagement from the target user communities and ensure the long-term sustainability of services developed during the project lifetime.

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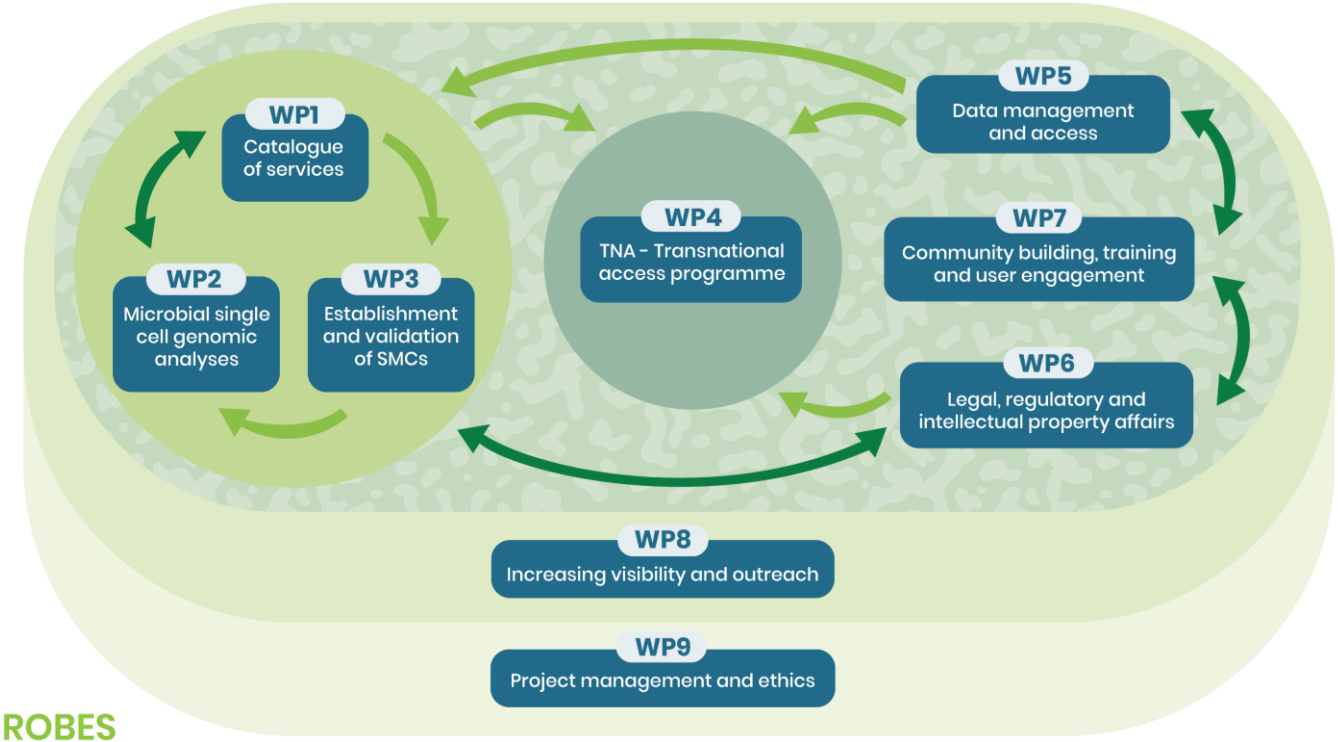
About the project

MICROBES-4-CLIMATE Collaborative dynamics



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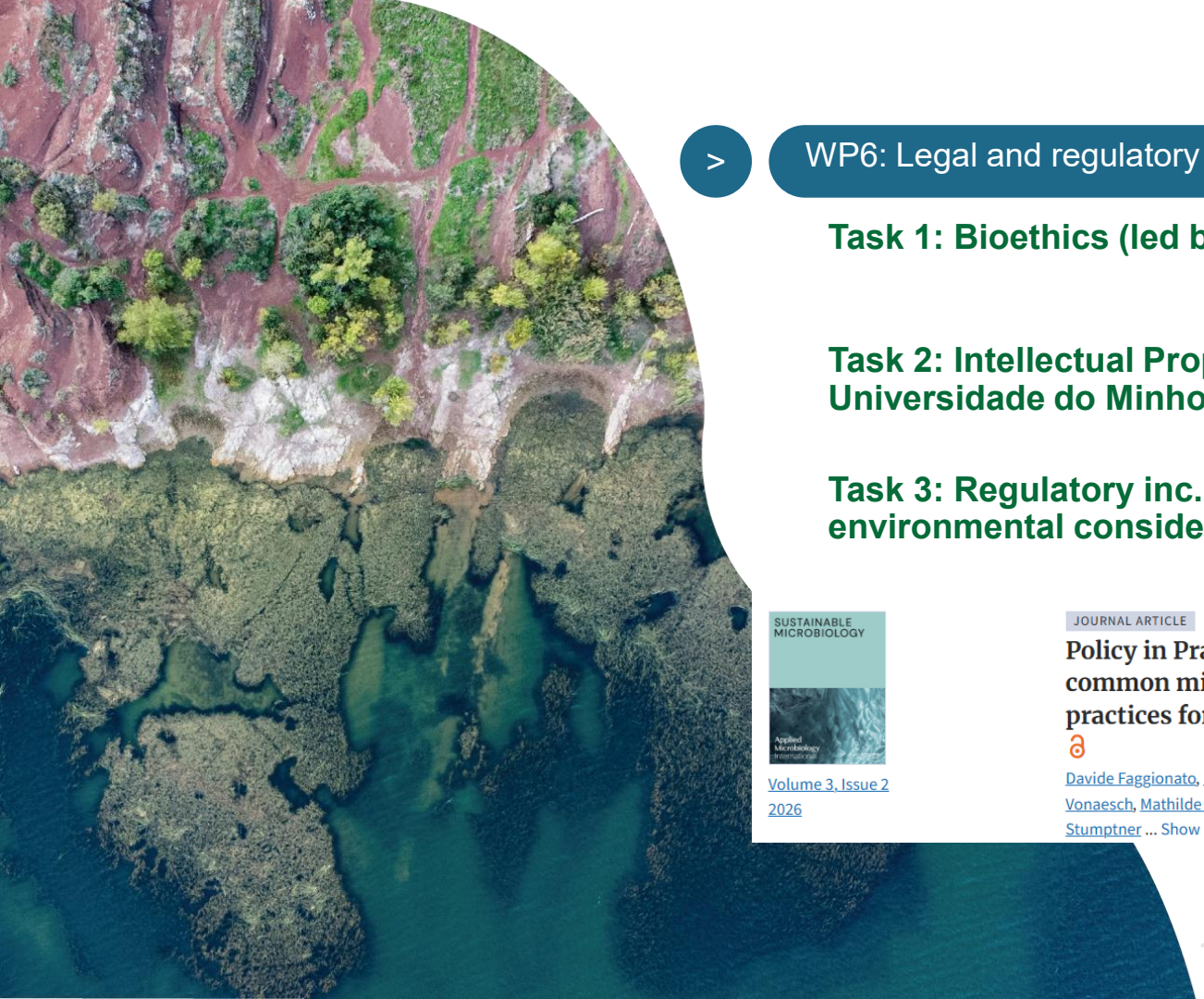

WP6: Legal and regulatory

Task 1: Bioethics (led by AIT)

Task 2: Intellectual Property inc. Patents (led by Universidade do Minho)

Task 3: Regulatory inc. Nagoya/ABS and environmental considerations (led by CABI)

Volume 3, Issue 2
2026

JOURNAL ARTICLE

Policy in Practice: How to do the Nagoya Protocol: common misconceptions, challenges and best practices for access and benefit-sharing compliance

Davide Faggionato, Melania Muñoz-García, Tanja Kostic, Mariana L Ferrari, Pascale Vonaesch, Mathilde Poyet, Perrine Portier, Matthew J Ryan, Djamila Djeddour, Cornelia Stumptner ... Show more

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Comment | Open access | Published: 08 June 2026

From "synthetic" to defined microbial communities for clearer terminology

Hanna Koch ✉, Thomas Clavel, Cintia Mayr, Benjamin L. Coltman, Michael Schloter, Julia A. Vorholt, Yolanda Sanz, Tomislav Cernava, Gwyn A. Beattie, Lene Lange, Stéphane Chaillou, Ákos T. Kovács, Hauke Smidt, Corné M. J. Pieterse, Tanja Kostic, Omri M. Finkel, Christopher E. Lawson, Luca Cocolin, Jesús Mercado-Blanco, Robert D. Finn, Kalliope K. Papadopoulou, Matthew Ryan, Marco Candela, Paul D. Cotter, ... Angela Sessitsch ✉ + Show authors

Nature Communications **17**, Article number: 5283 (2026) | Cite this article

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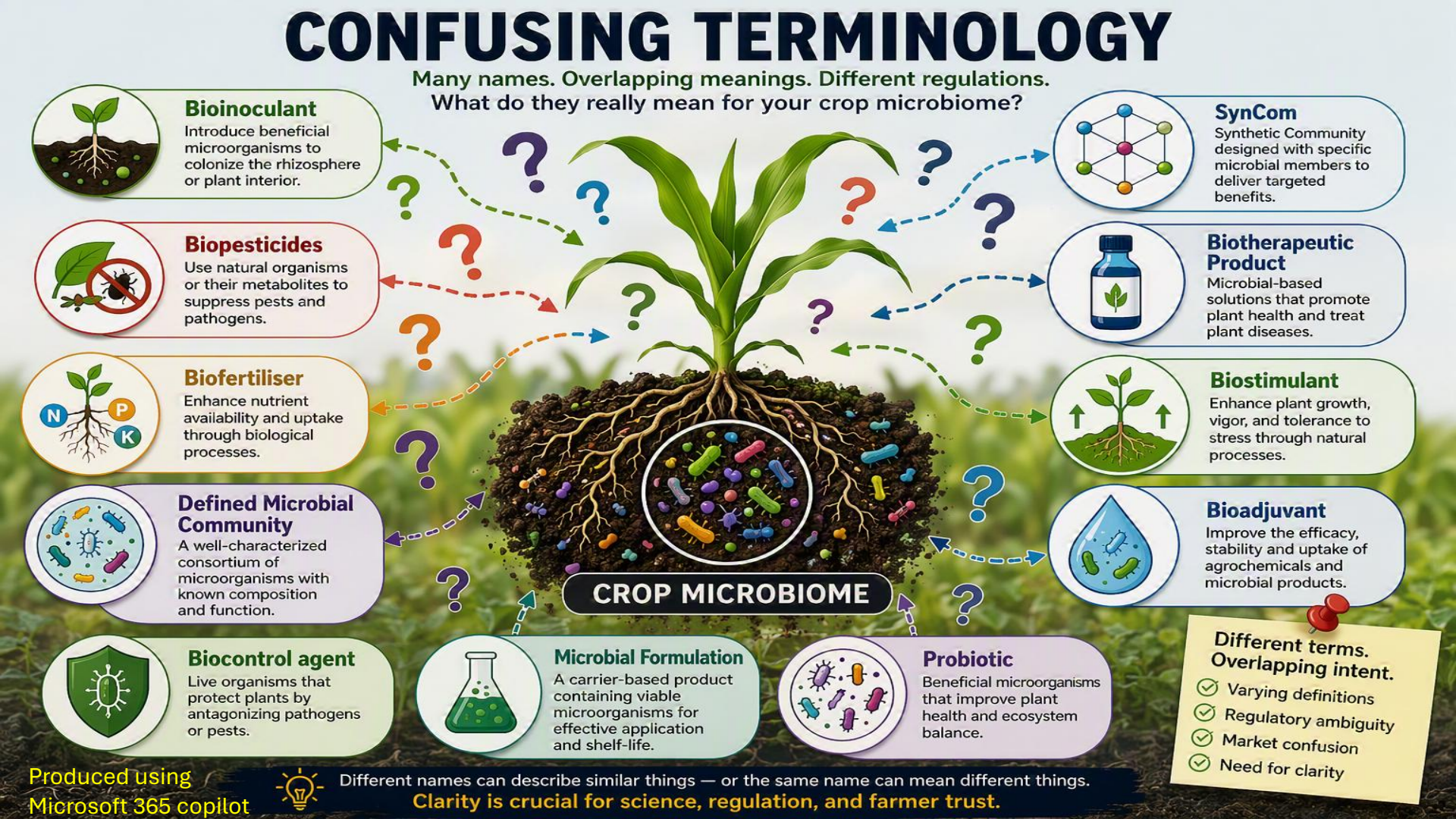
Consortia of microbial isolates, also known as synthetic communities (SynComs), are increasingly used to study and harness microbe-microbe and microbe-host interactions. Since "synthetic" potentially evokes negative connotations, we propose adopting the term "Defined Microbial Community" for practical applications.

CONFUSING TERMINOLOGY

Many names. Overlapping meanings. Different regulations.
What do they really mean for your crop microbiome?



Bioinoculant
Introduce beneficial microorganisms to colonize the rhizosphere or plant interior.

Biopesticides
Use natural organisms or their metabolites to suppress pests and pathogens.

Biofertiliser
Enhance nutrient availability and uptake through biological processes.

Defined Microbial Community
A well-characterized consortium of microorganisms with known composition and function.

Biocontrol agent
Live organisms that protect plants by antagonizing pathogens or pests.

Microbial Formulation
A carrier-based product containing viable microorganisms for effective application and shelf-life.

Probiotic
Beneficial microorganisms that improve plant health and ecosystem balance.

SynCom
Synthetic Community designed with specific microbial members to deliver targeted benefits.

Biotherapeutic Product
Microbial-based solutions that promote plant health and treat plant diseases.

Biostimulant
Enhance plant growth, vigor, and tolerance to stress through natural processes.

Bioadjuvant
Improve the efficacy, stability and uptake of agrochemicals and microbial products.

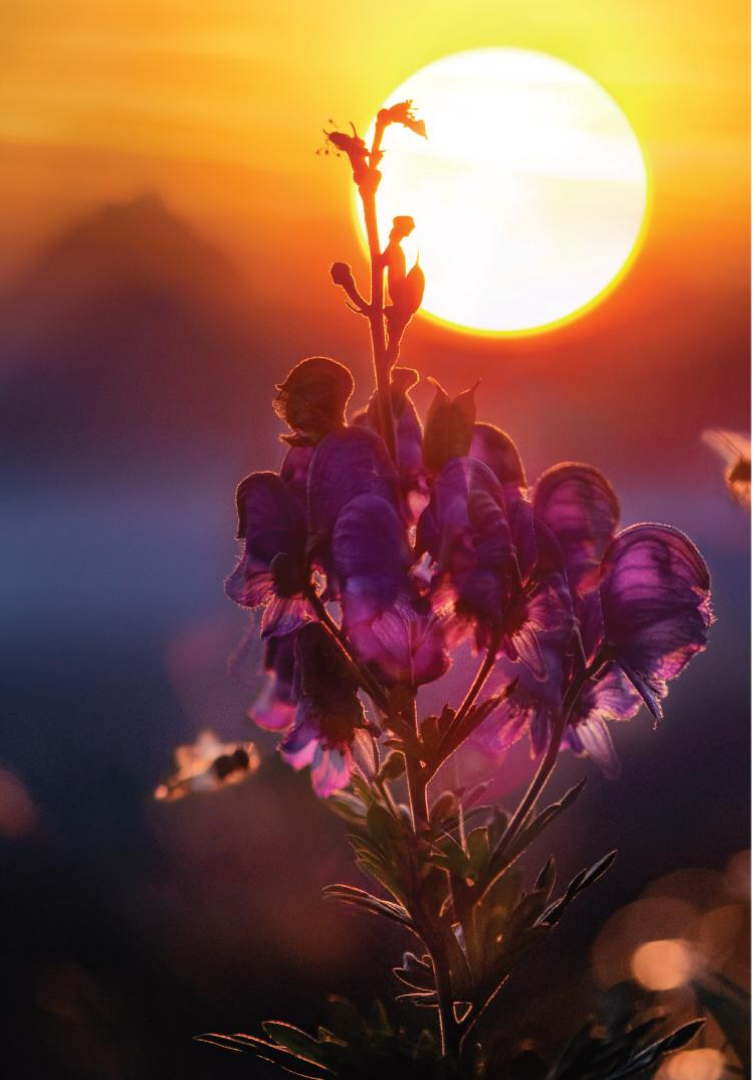
Different terms. Overlapping intent.

- Varying definitions
- Regulatory ambiguity
- Market confusion
- Need for clarity

Different names can describe similar things — or the same name can mean different things.

Clarity is crucial for science, regulation, and farmer trust.

Produced using Microsoft 365 copilot



Webinar Objectives & Potential Questions

- Begin to untangle the complexity of environmental regulations for end users. For example, why using Defined Microbial Communities might be more complex than using single-axenic organisms?
- Provide an oversight of approaches to Environmental Regulation in different jurisdictions. For example: what should a researcher consider when developing a potential microbial solution?
- Consider the impact of terminology. Can it be made easier?
- Understand how the regulatory landscape might evolve in the future. What might it look like?

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