



Food and Agriculture
Organization of the
United Nations

GLOBAL SOIL
PARTNERSHIP
12th Plenary Assembly
03-05 June 2024

Cristina Yacoub

SOILGUARD



SOILGUARD

Sustainable soil management to unleash soil biodiversity potential and increase environmental, economic and social wellbeing



Universitat d'Alacant
Universidad de Alicante




DANISH TECHNOLOGICAL INSTITUTE

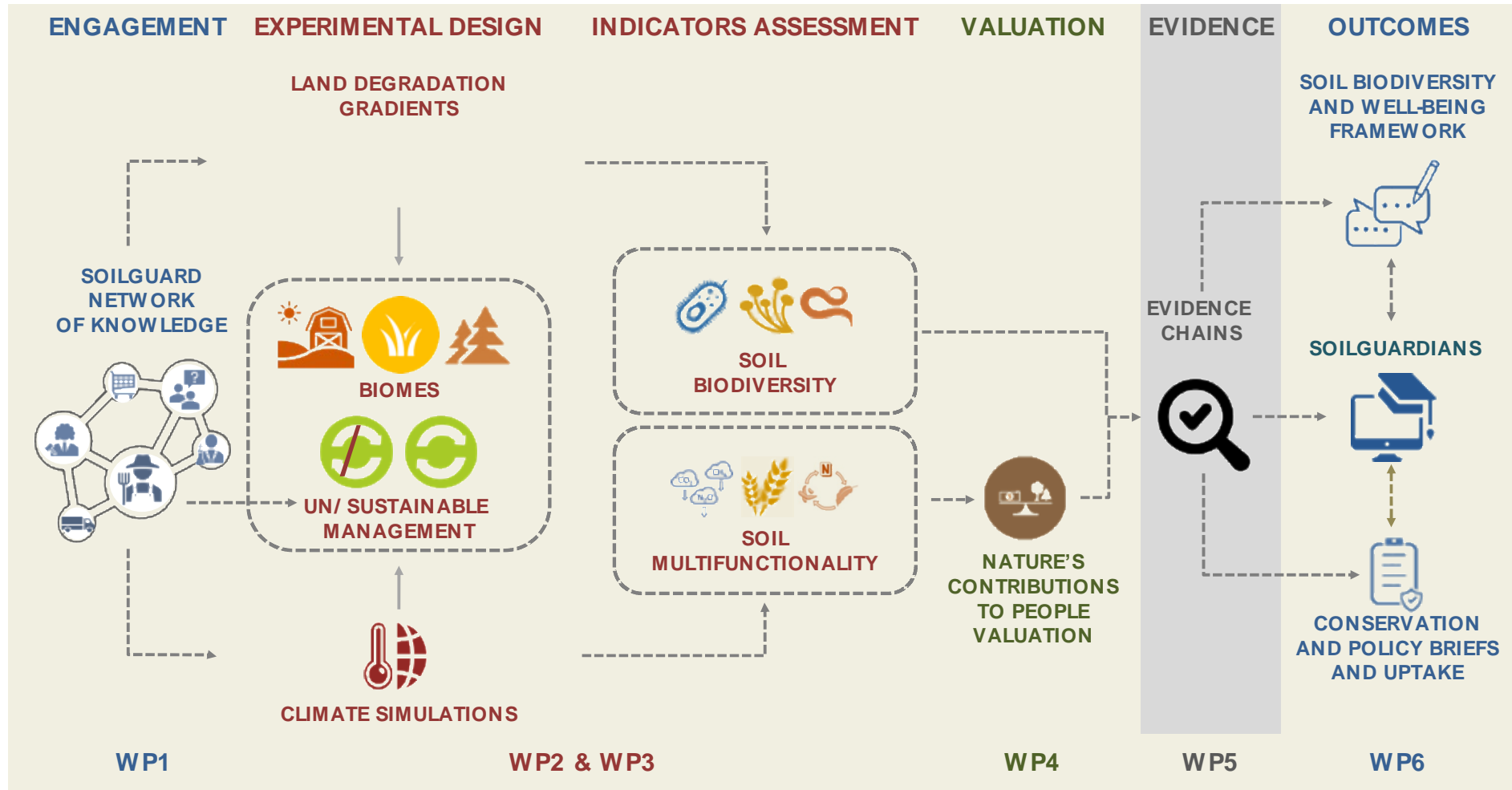


Latvia University of Life Sciences and Technologies



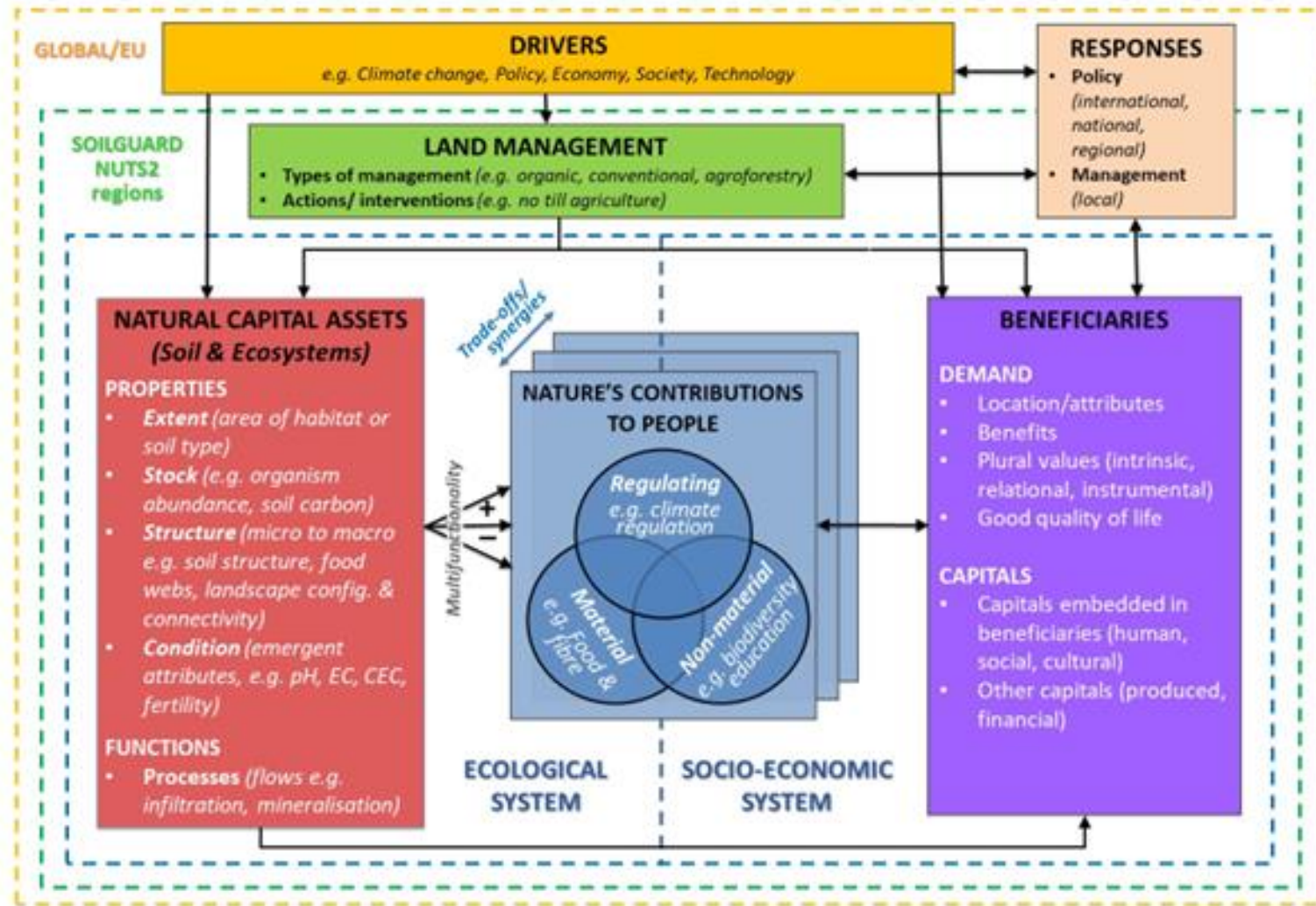
UNIVERSITY OF AMSTERDAM

 The research leading to these results has received funding from the European Union Horizon 2020 Research & Innovation programme under the Grant Agreement no. 101000371.



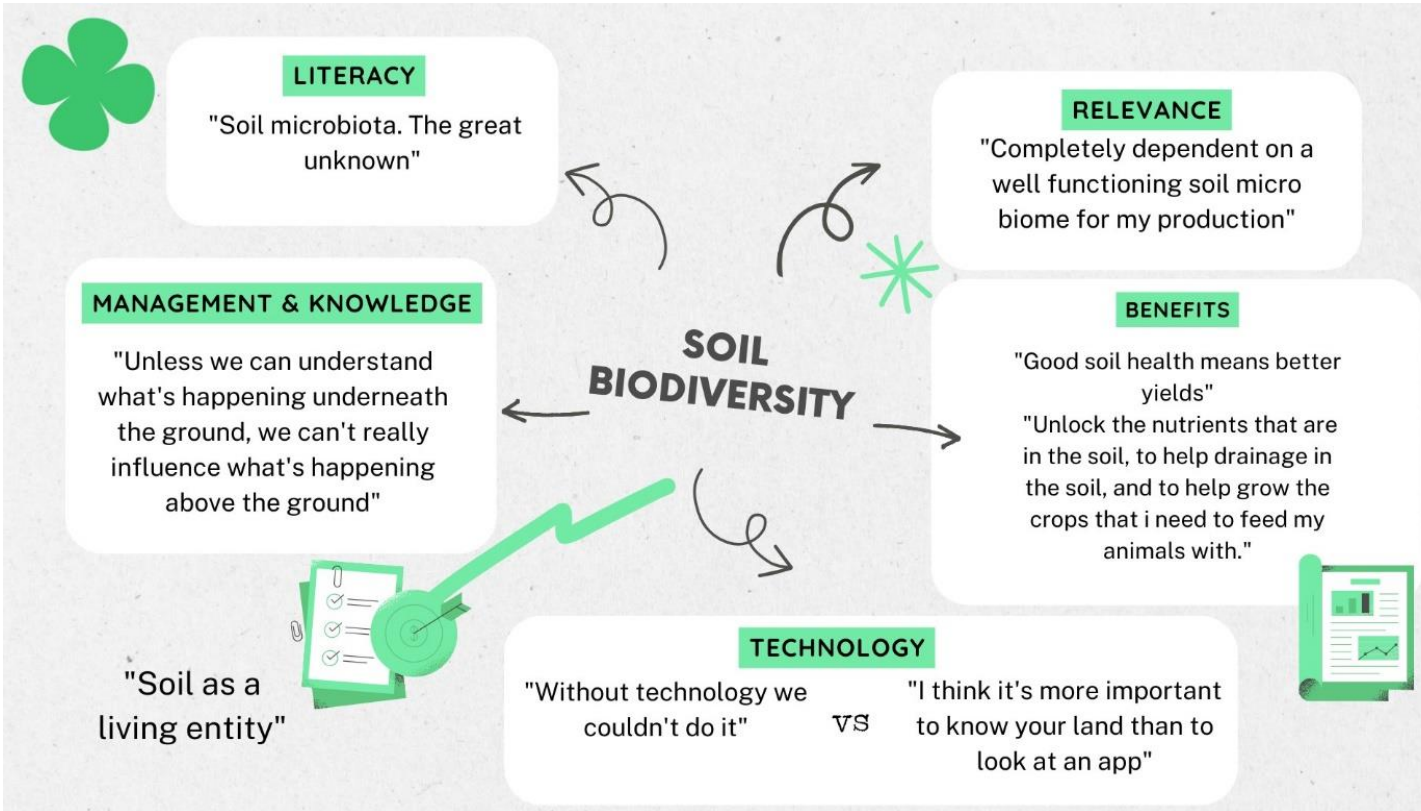
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Soilguard Network of Knowledge – Farmers insights



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3 biomes with 234 sites

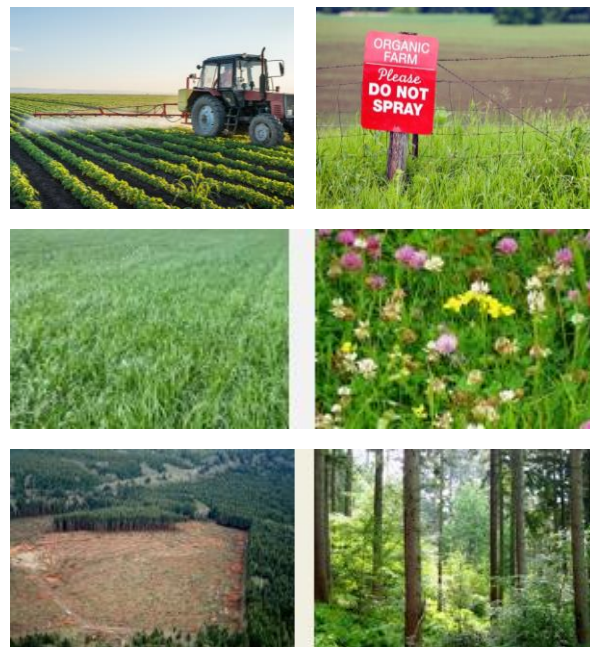
- Cropland
- Grassland
- Forest



Argentina, Belgium, Cameroon,
Denmark, Ireland, Finland, Hungary,
Latvia, Spain and Thailand

2 management practices per biome

- Conventional vs. organic cropland (190 sites)
- Monoculture vs. mixed species grassland (20 sites)
- Clear-cut vs. continuous cover forestry (24 sites)



8 groups of soil biota

- Viruses
- Bacteria
- Archaea
- Fungi
- Protozoa
- Nematodes
- Microarthropods
- Earthworms

2 analytical approaches

- Morphotyping
- Molecular (DNA-based)

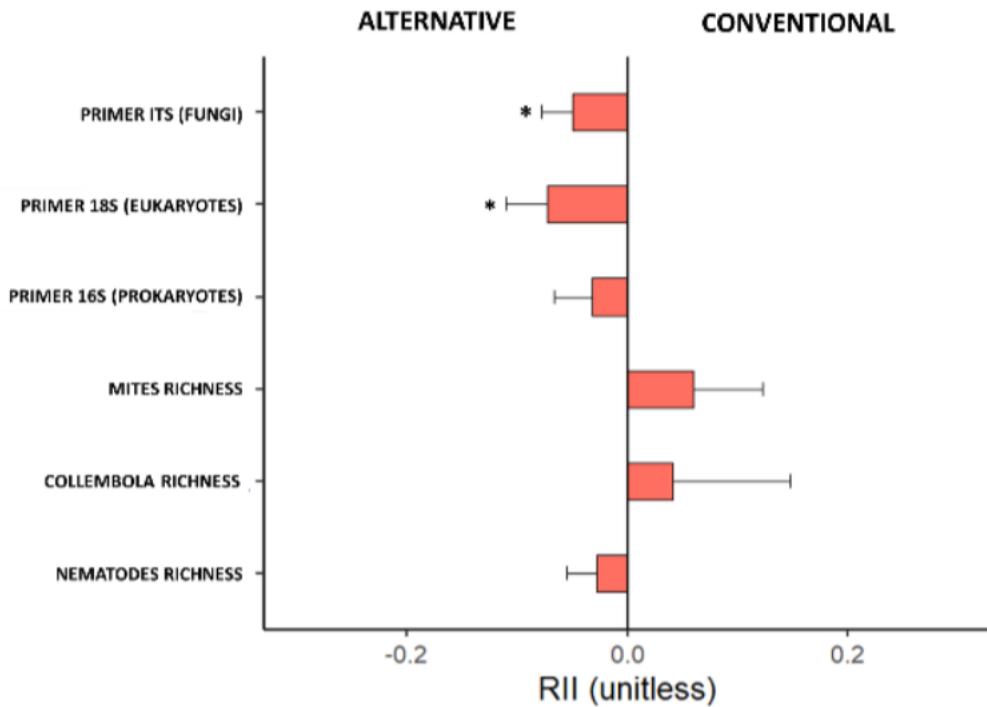


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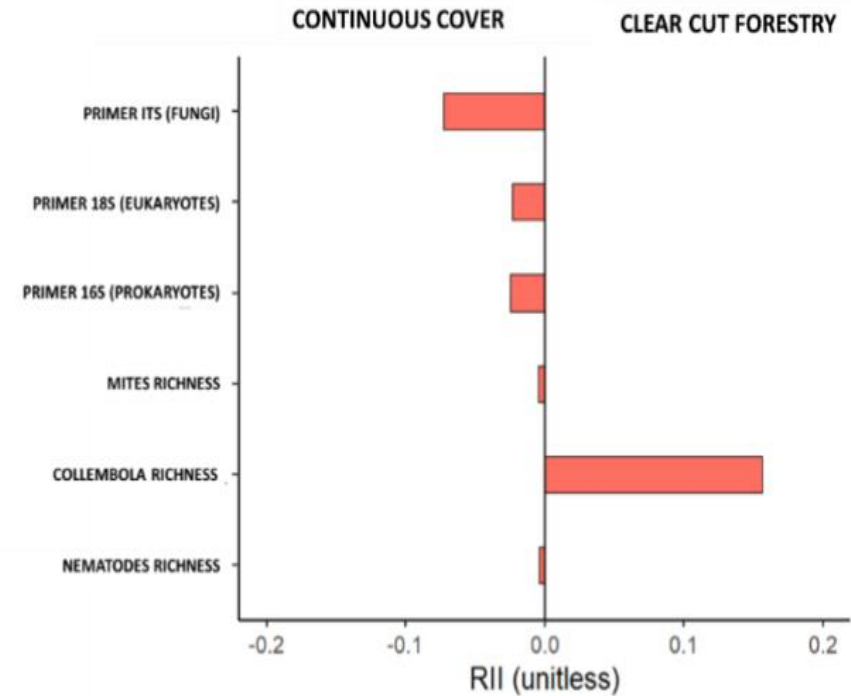


Relative Interaction Index

CROPLANDS. ALTERNATIVE VS CONVENTIONAL



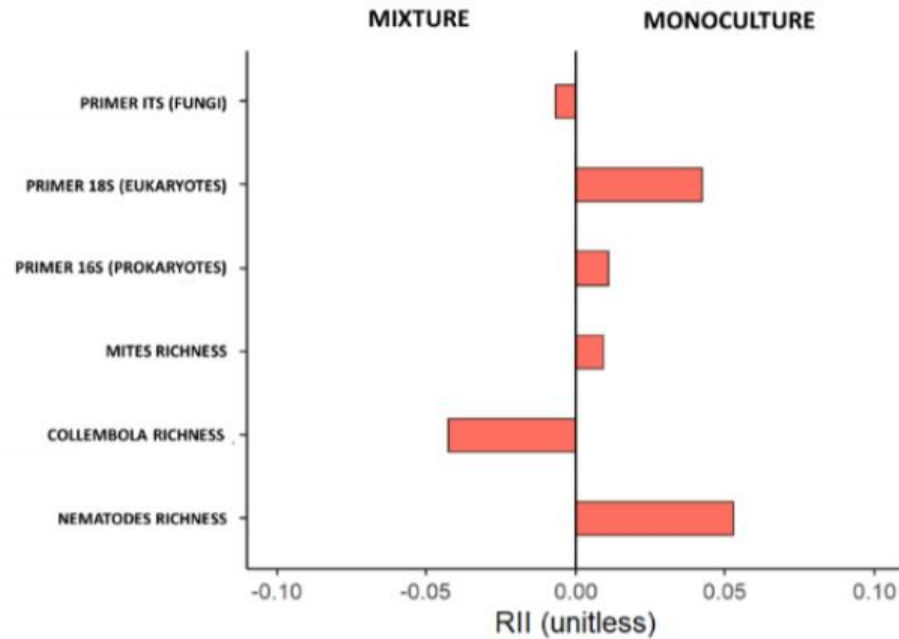
FINLAND, FORESTRY (CONTINUOUS COVER VS CLEAR CUT)



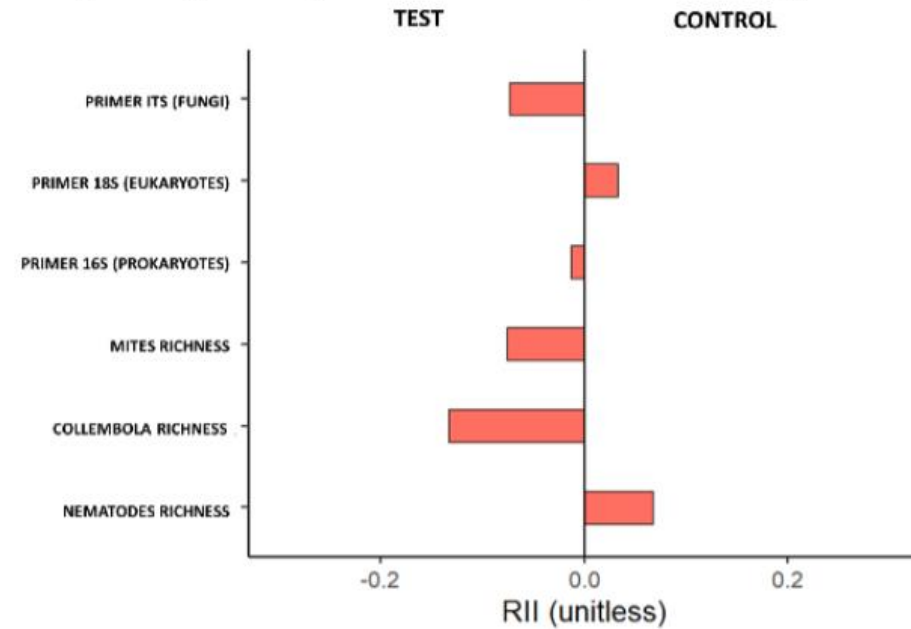
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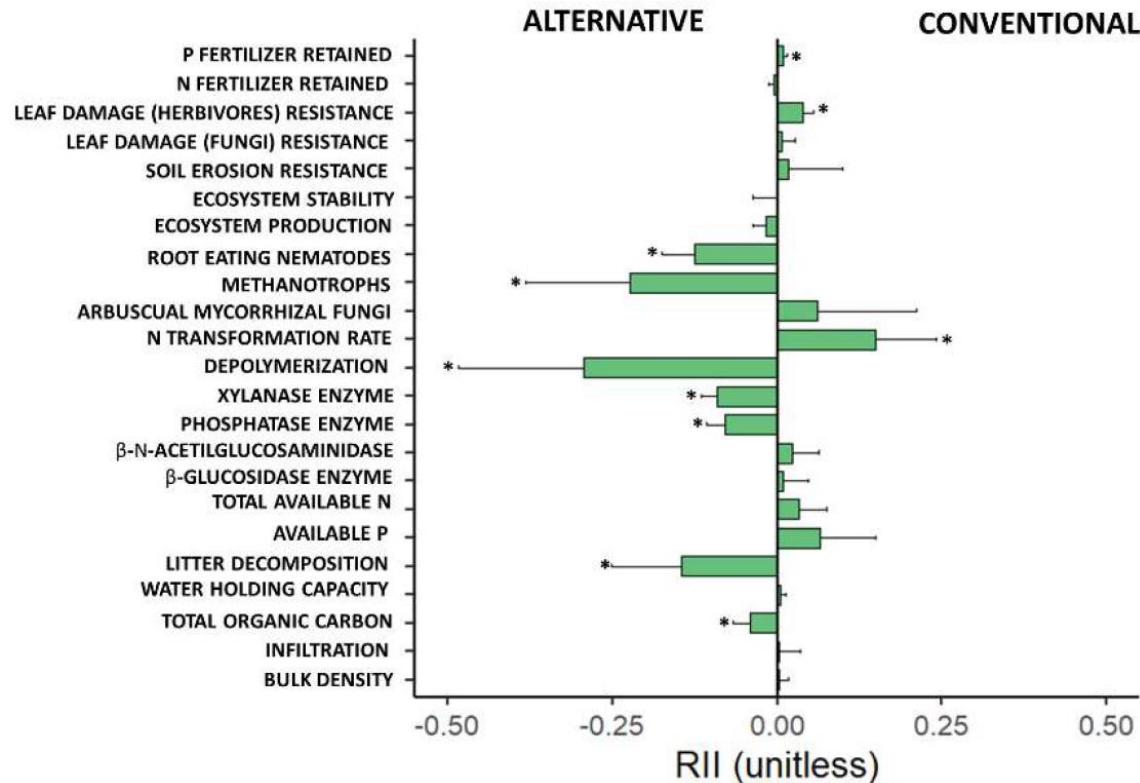
**IRELAND, GRASSLAND
(MIXTURE VS MONOCULTURE)**



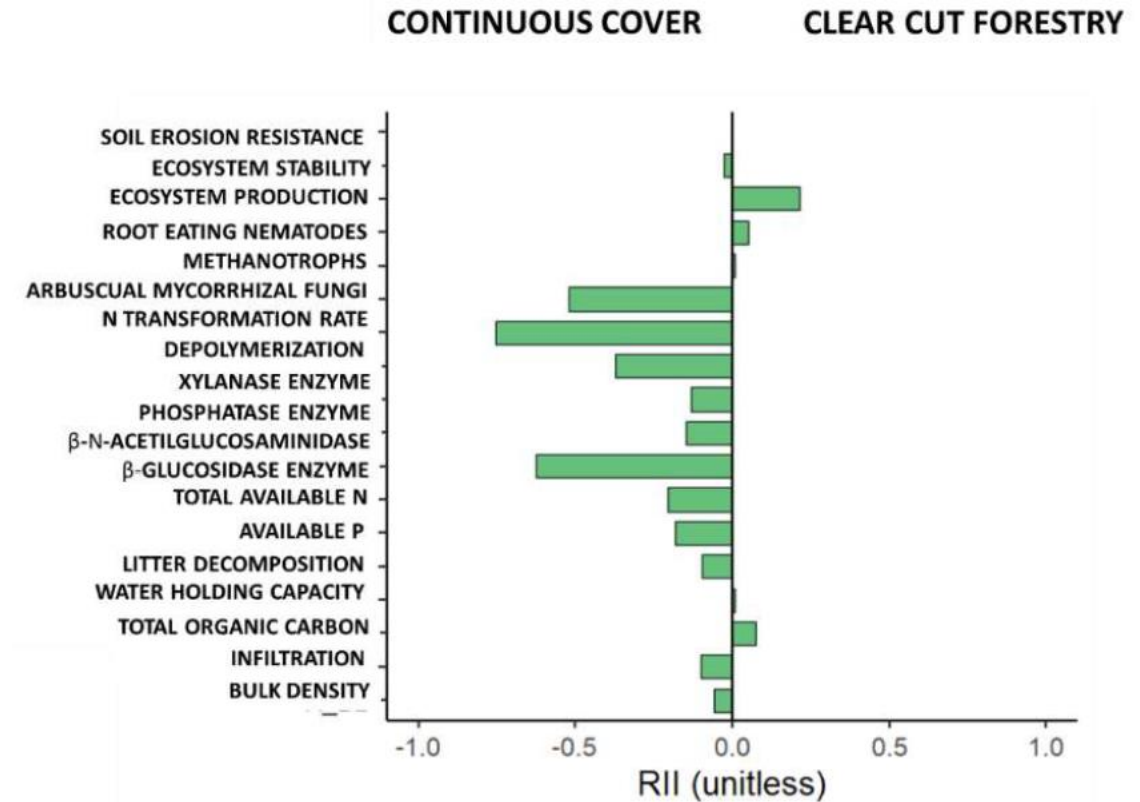
**IRELAND, AGROFORESTRY
(TEST [WITH] VS CONTROL [WITHOUT])**



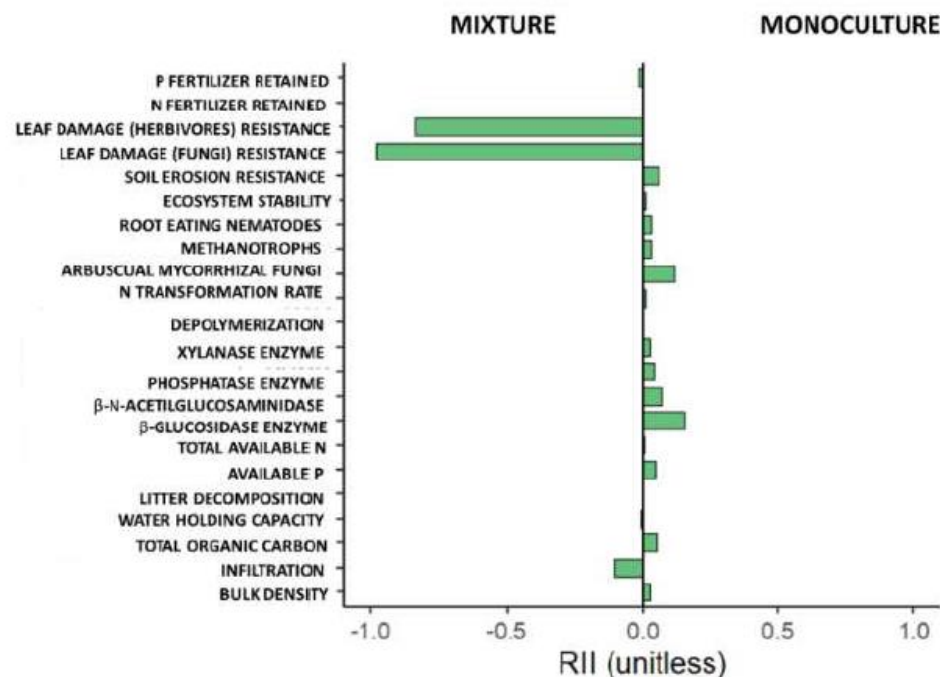
CROPLANDS. ALTERNATIVE VS CONVENTIONAL



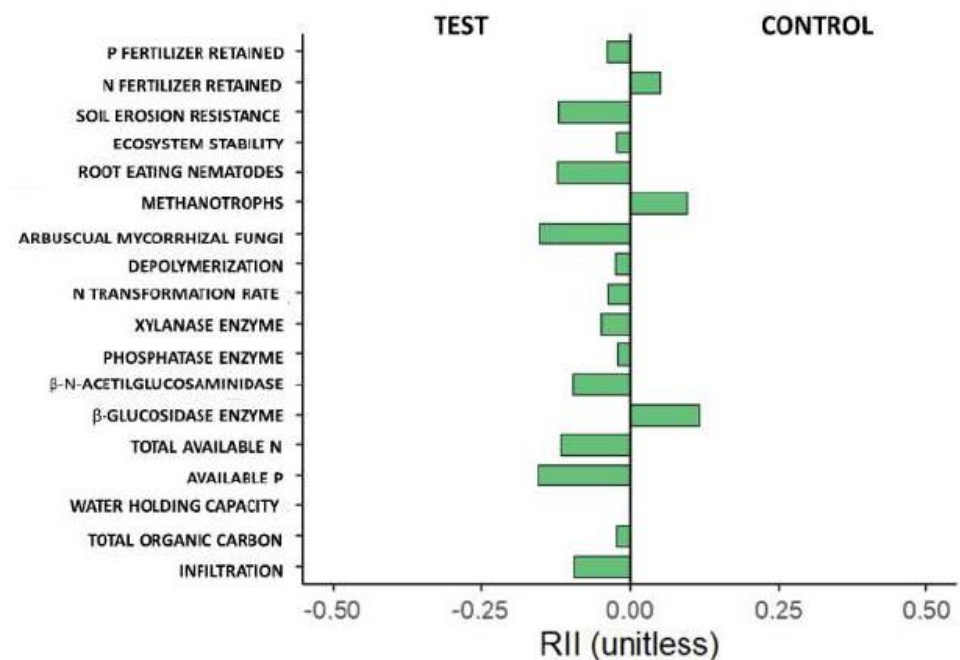
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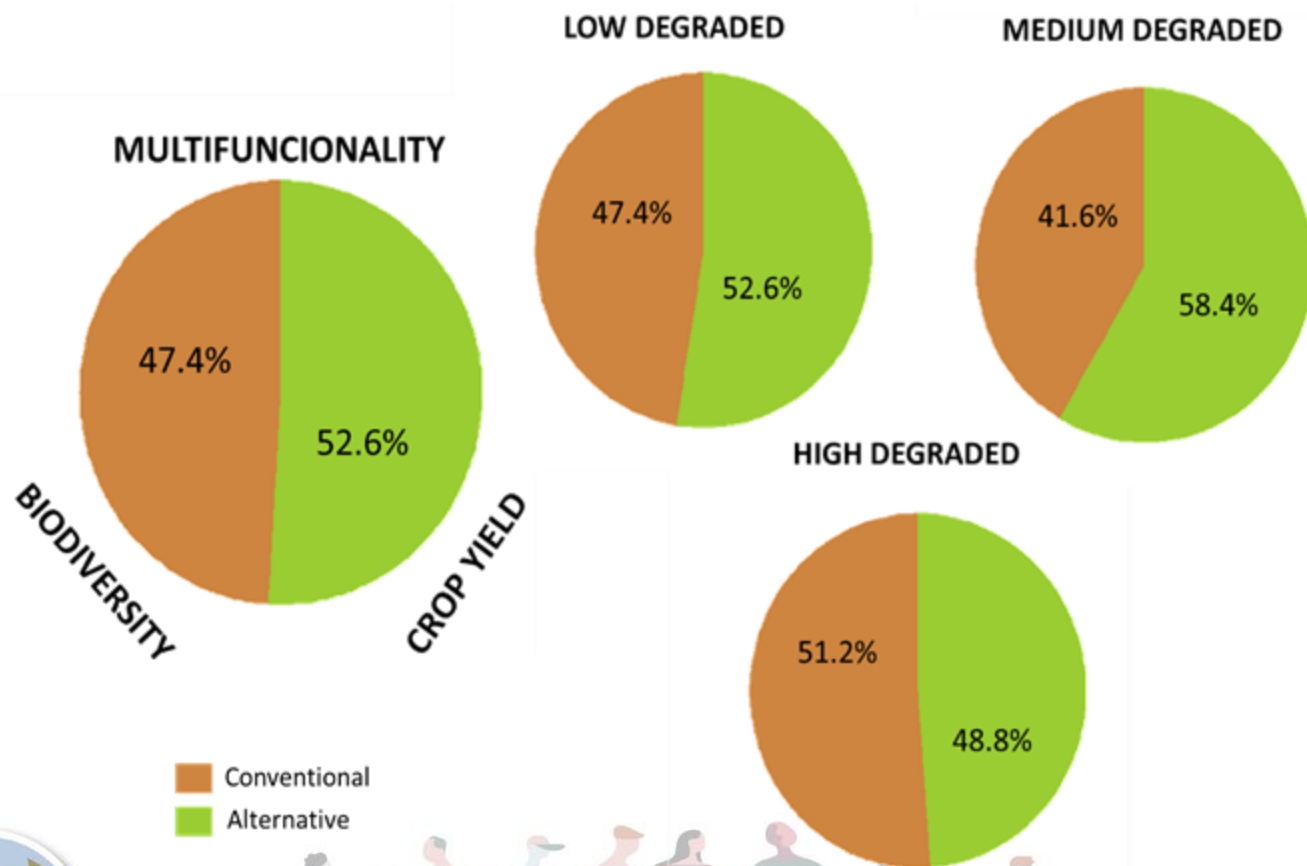


IRELAND, GRASSLAND (MIXTURE VS MONOCULTURE)



IRELAND, AGROFORESTRY (TEST [WITH] VS CONTROL [WITHOUT])

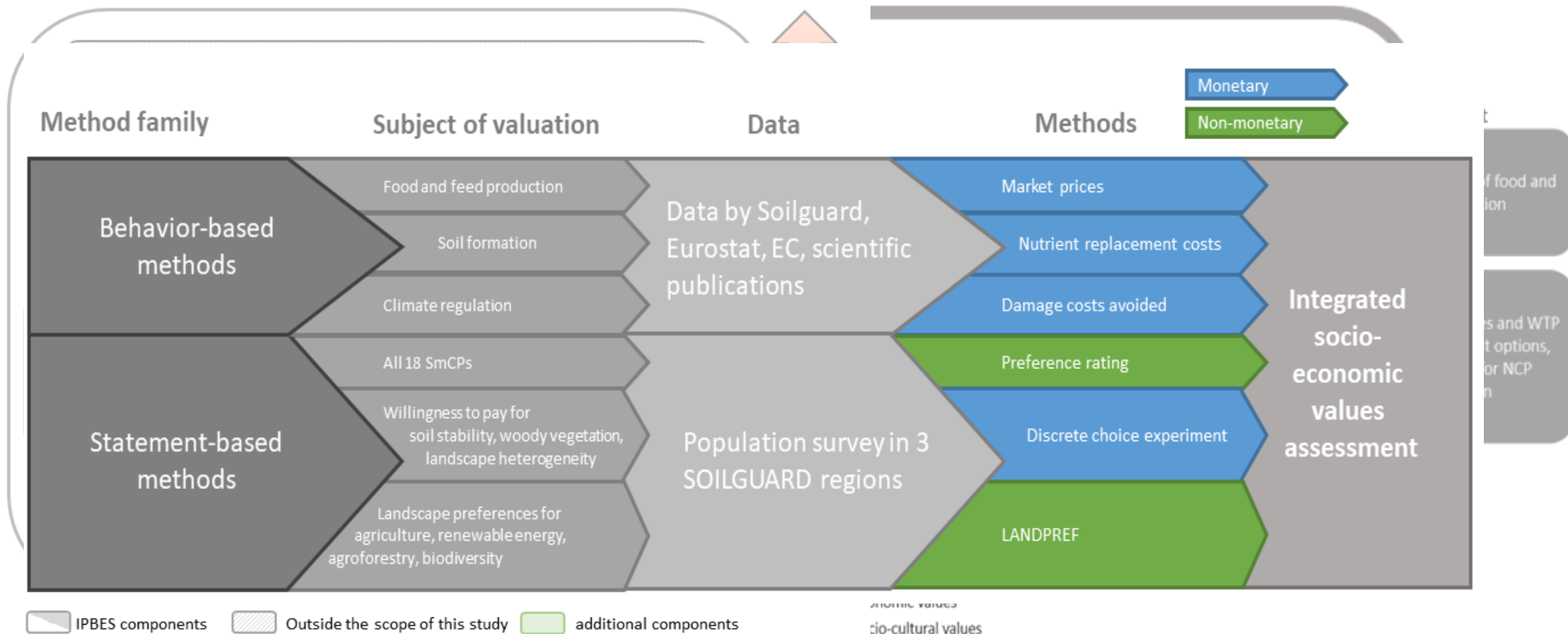




EU's target of 25% falls short

SSM x SD interactions of opposite signs (biodiversity, functioning) find a "middle spot"





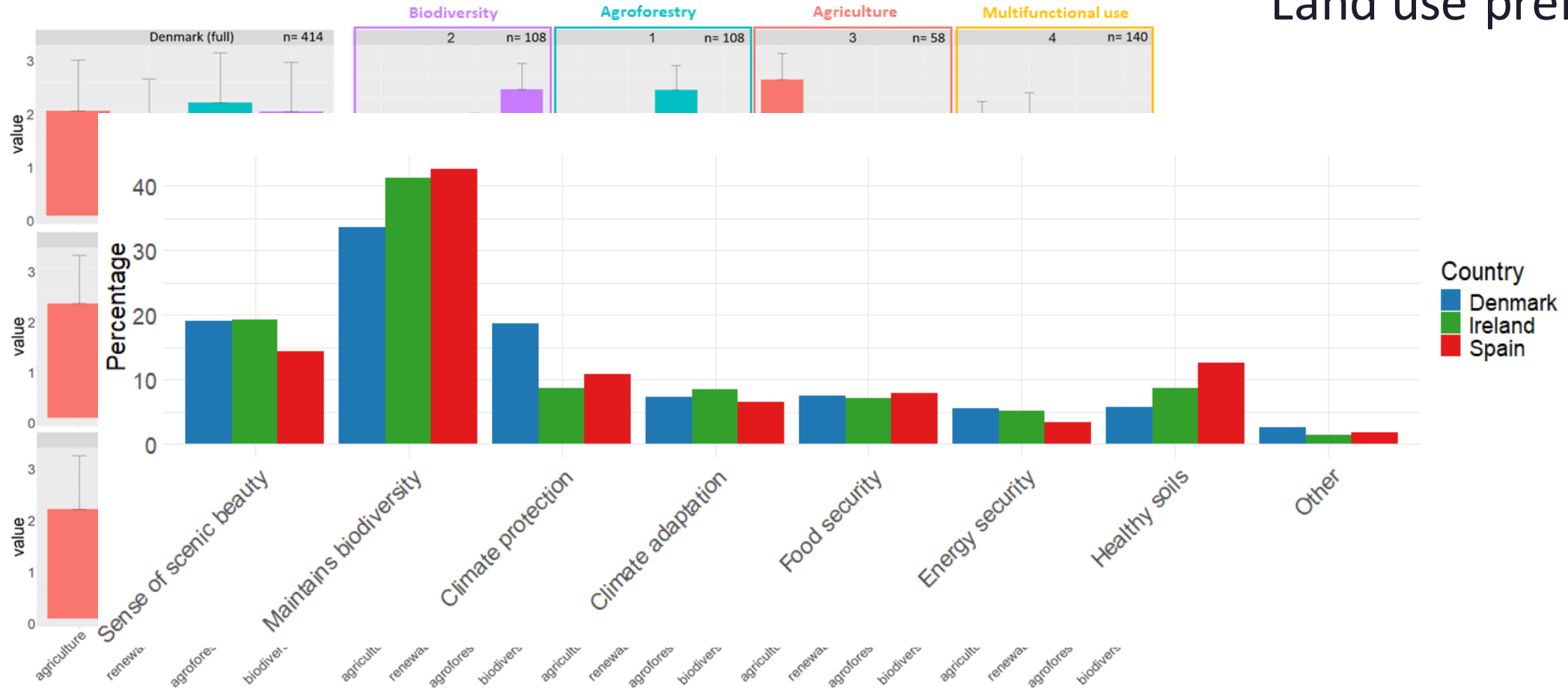
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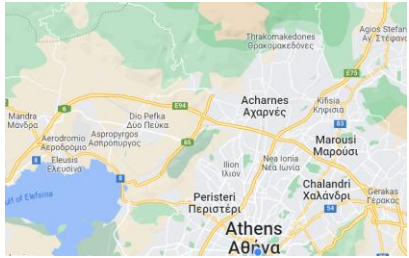


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User input:

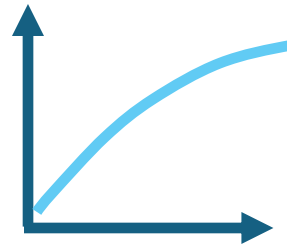
- Farm type (Arable, grassland)
- Grid Ref / Select Location



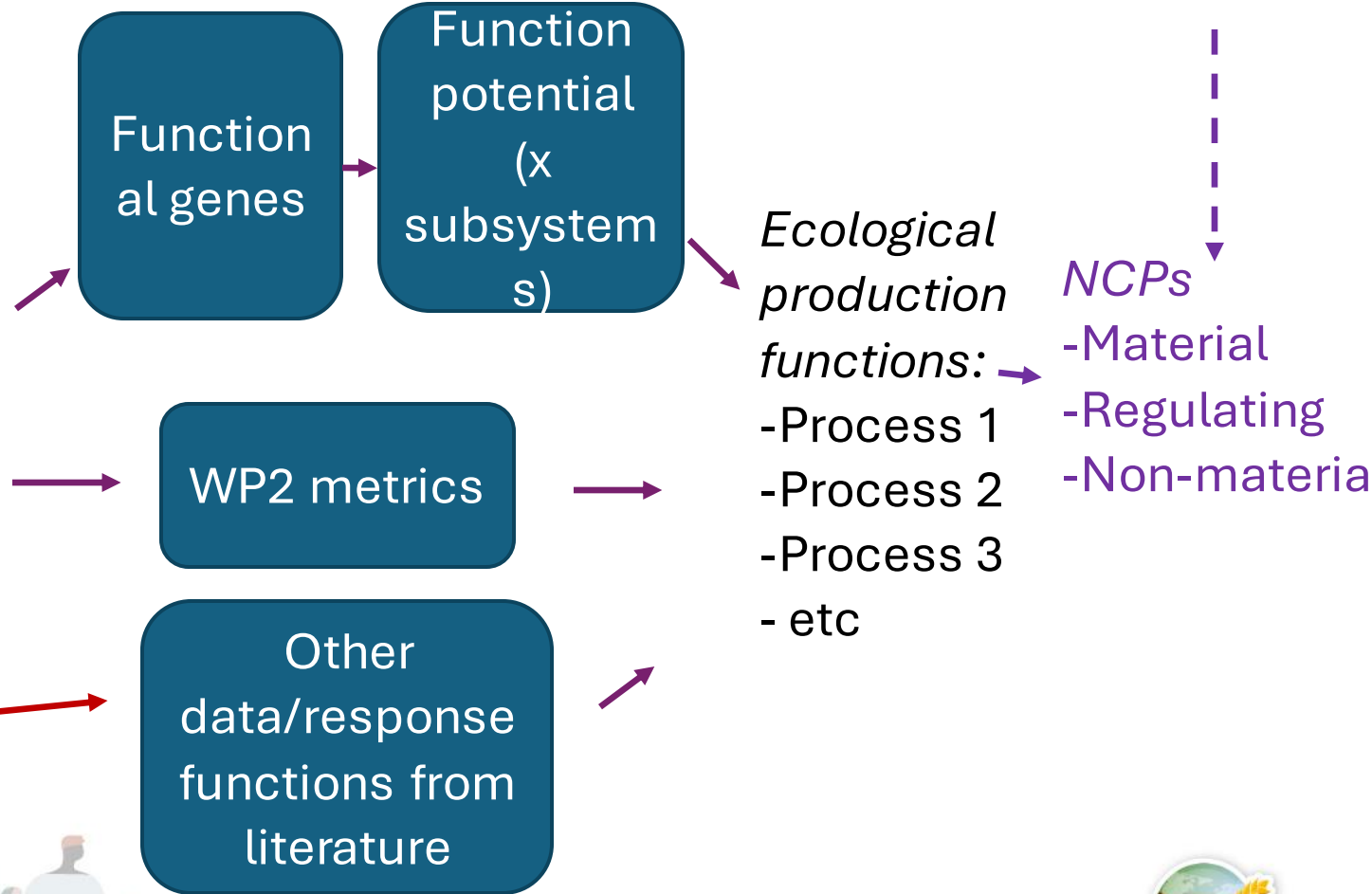
Look up (or user input):

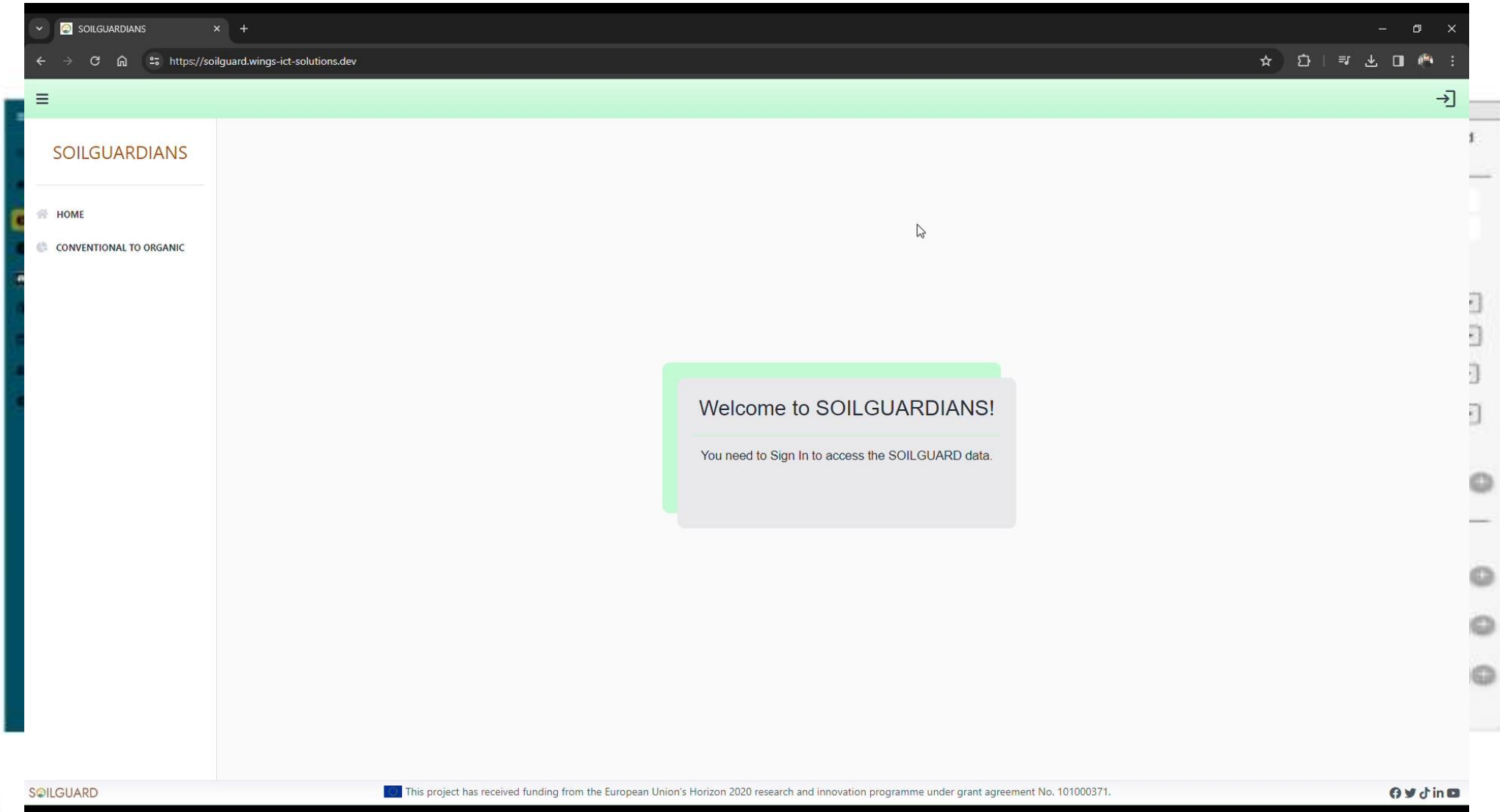
- (% clay)
- pH
- LOI
- Climate
- Bulk density

Predict biodiversity/composition



Predict function from biodiversity





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THANK YOU



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