



Management concept for Central European vineyard ecosystems:

PromESSinG

Promoting EcoSystem Services in Grapes



Presented by Ilona Leyer, Geisenheim University





BiodiversA/FACCE-JPI joint call on “Promoting synergies and reducing trade-offs between food supply, biodiversity and ecosystem services”



Viticulture can provide high levels of biodiversity inside the cropped area

→ cannot be found in annual cropping systems



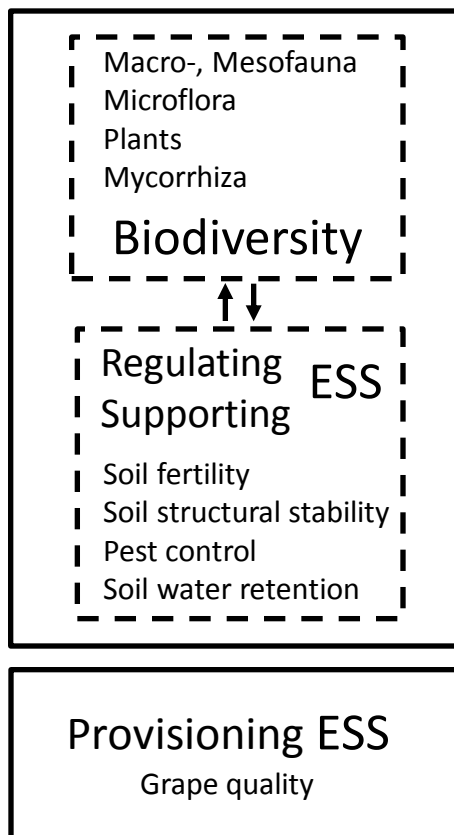


Consortium: Universities of five countries



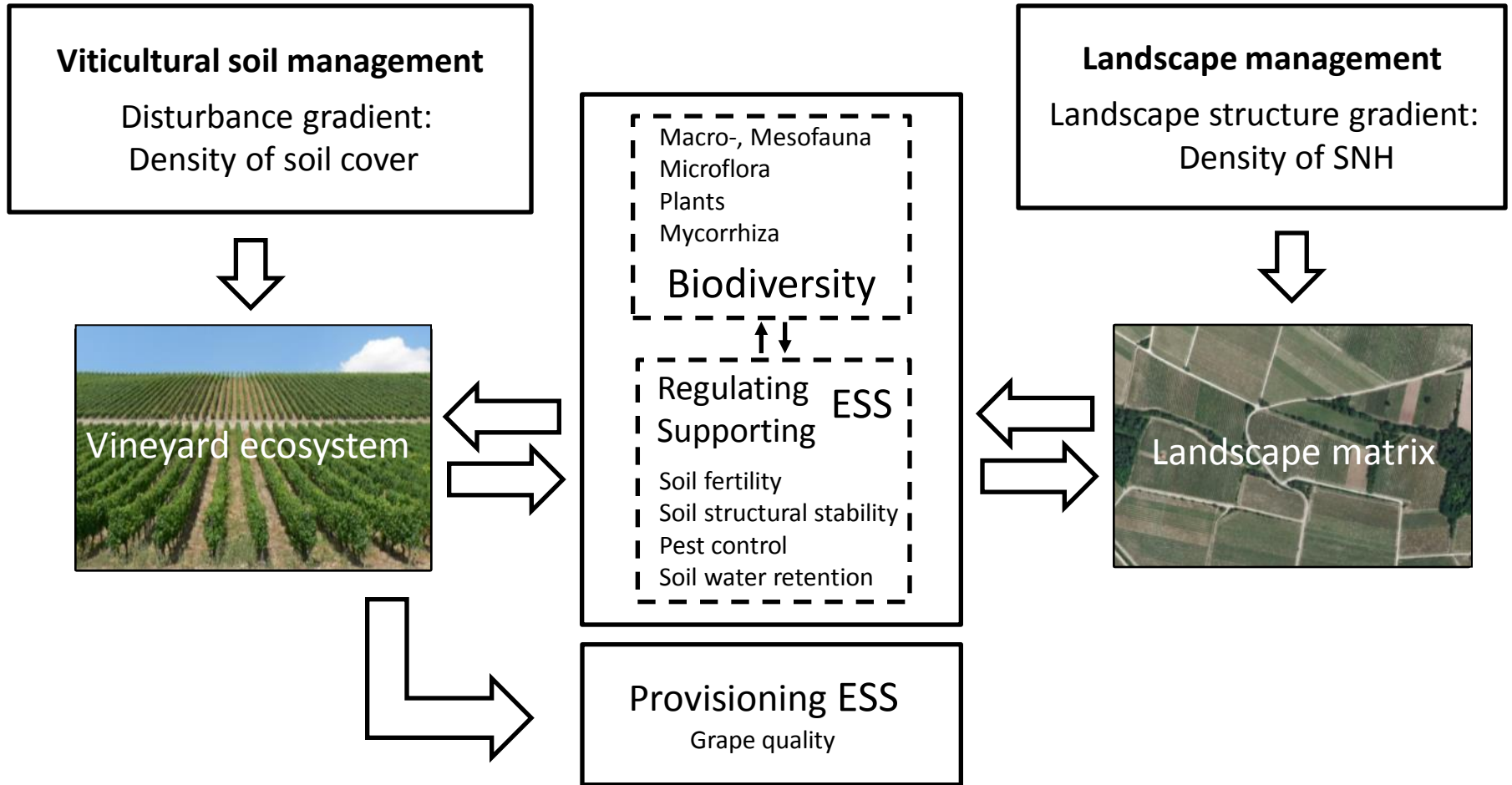
Question:

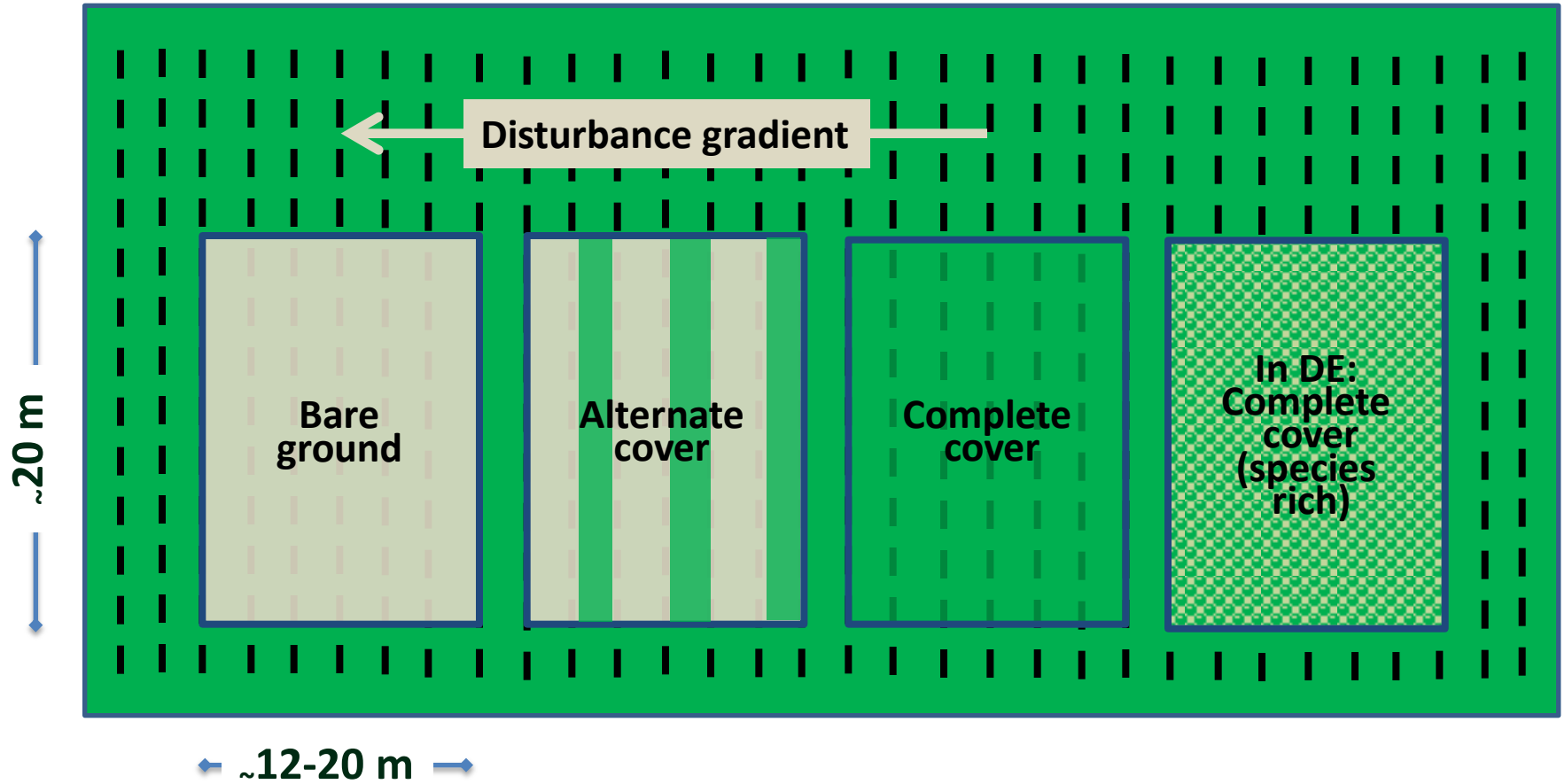
How can biodiversity promote Ecosystem Services leading to a higher added value?



Aim:

Identification of management options for promoting biodiversity linked ESS in order to reduce external inputs in vineyard ecosystems





Density of SNH



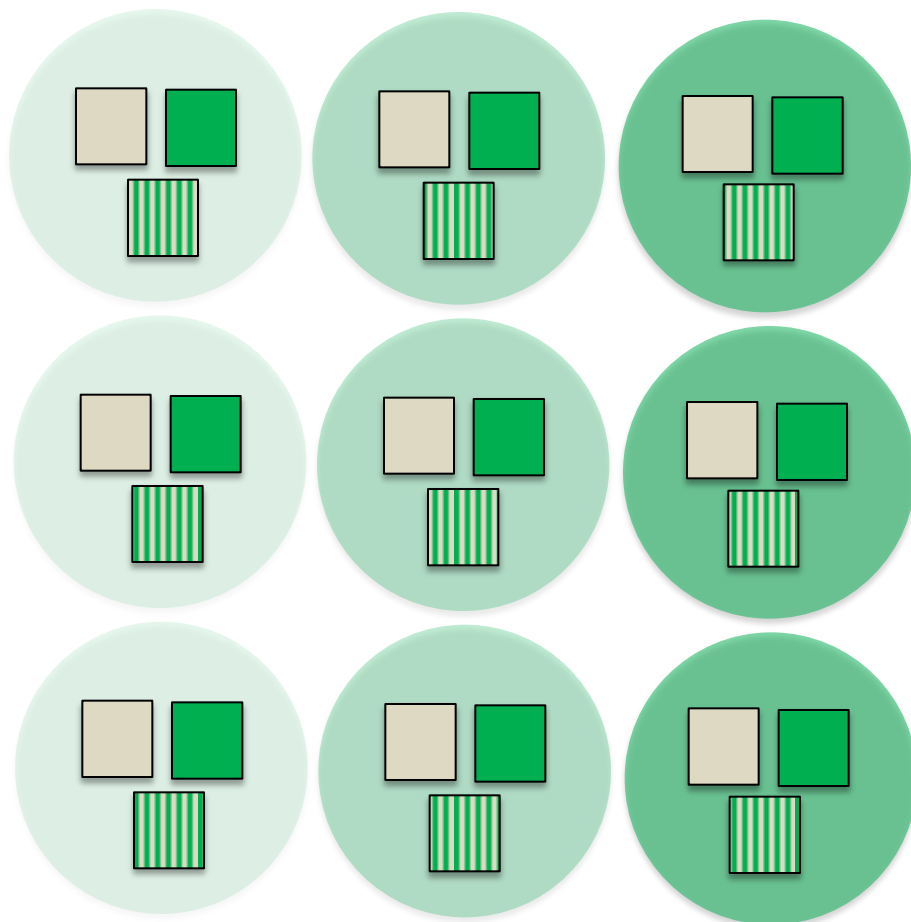
4 %



11 %



32 %



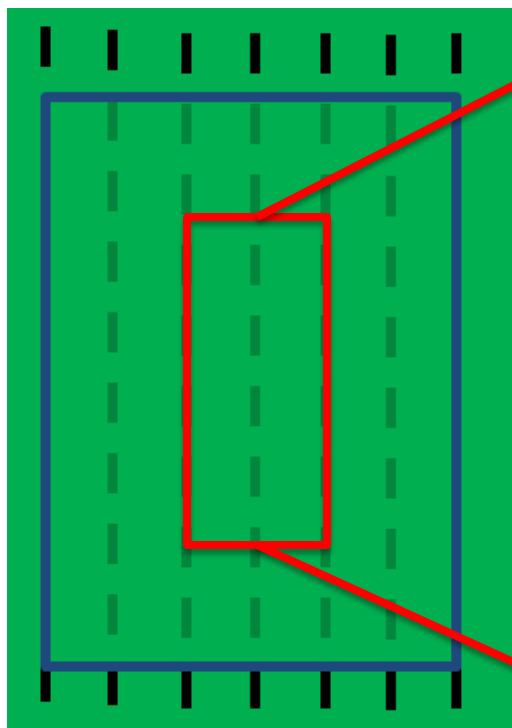
3 soil management treatments
3 landscape density levels
3 replications (subregions)

→ in each country

**Study regions across Central Europe
from maritime to continental climate** →



Study plot



Macro-, Mesofauna
Microflora
Plants
Mycorrhiza

Biodiversity



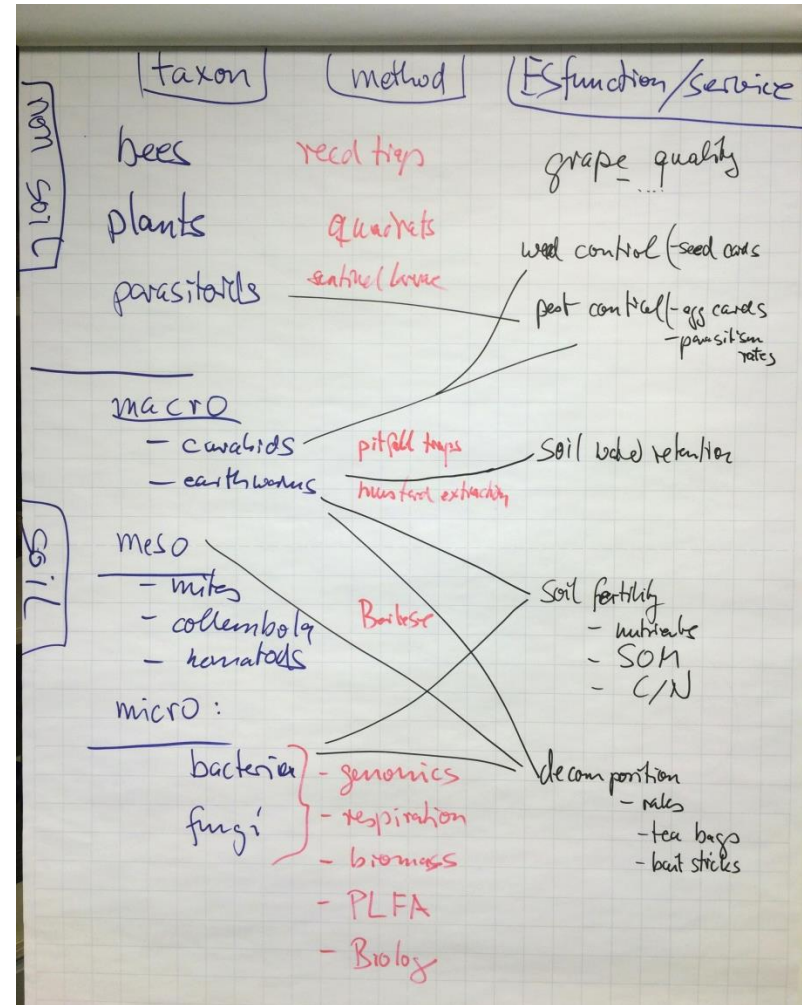
Regulating ESS
Supporting

Soil fertility
Soil structural stability
Pest control
Soil water retention

Provisioning ESS

Grape quality

Kick-off meeting 9.-11.2.2015 Geisenheim

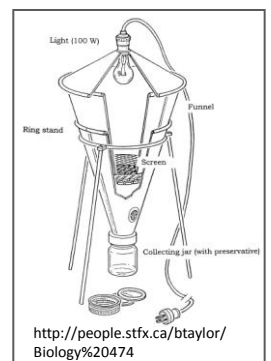


Biodiversity

Parameters related to Ecosystem Functions and ESS



Arthropods



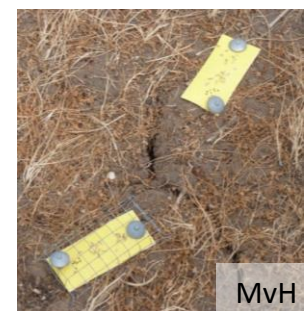
Mesofauna



Soil parameters related to fertility



Decomposition



Seed predation



Earthworms

AR	2011						2012											
	BBCH 60	BBCH 73	BBCH 83	BBCH 93	BBCH 60	BBCH 73	BBCH 83	BBCH 93	BBCH 60	BBCH 73	BBCH 83	BBCH 93						
Genus	W	AP	AP/BB	W	AP	AP/BB	W	AP	AP/BB	W	AP	AP/BB	W	AP	AP/BB	W	AP	AP/BB
Cryptosporium																		
Luteobasidium																		
Cystoflabasidium																		
Clavaria																		
Cladosporium																		
Askenzia																		
Epicoecium																		
Mentha																		
Epicoecium																		
Epicoecium																		

Microflora: Bacteria, Fungi



Plants



Pest control by parasitoids



Activity of entomopathogenic fungi



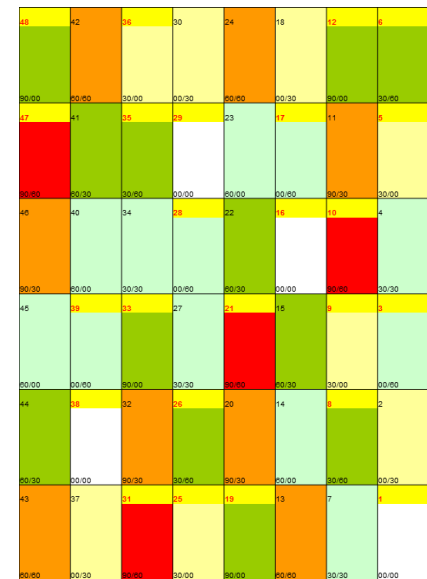
Grape quality

Thematic WP

	RO	WP 2 Biodiversity Sampling: • Macrofauna • Microflora • Mycorrhiza • Plants	DE	WP 3 ESS • Soil fertility • Soil structural stability • Pest control • Water retention	AT	WP 4 Provisioning Services • Grape quality • Yield • Socio-economic values
<i>Integrative WP</i>	FR	WP 1: Experimental Setup • Development of techniques and methods, • Site selection, GIS mapping • Standardised sampling design				
	CH	WP 5: Analysis and Synthesis • Statistical procedures • Synthesis by structural equation modelling				
	FR	WP 6: Spread of results • Spread of knowledge: stakeholder groups • Scientific community: scientific papers, presentations • Policy recommendations (policy brief)				

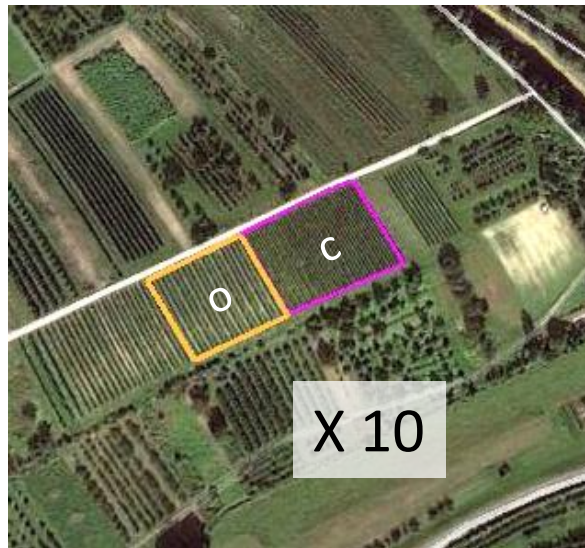
Intended further studies in addition to our transnational experiment

- **Biodiversity and soil function responses to fertilization and disturbance in a vineyard ecosystem: results of a 30-year experiment (DE)**



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- **Effects of fungicides on biodiversity and soil functions (CH)**



Recent activities

- Selecting vineyards/finding wine growers for collaboration
- Set-up of soil management plans
- Intensive exchange with growers concerning the development of SOPs for various practices
- Creation of Website www.PromESSing.eu ✓ and first leaflet



Acknowledgement

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