



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

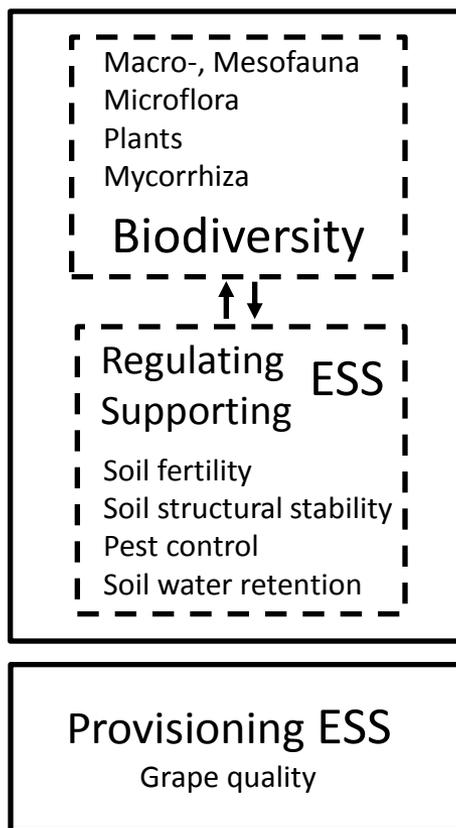




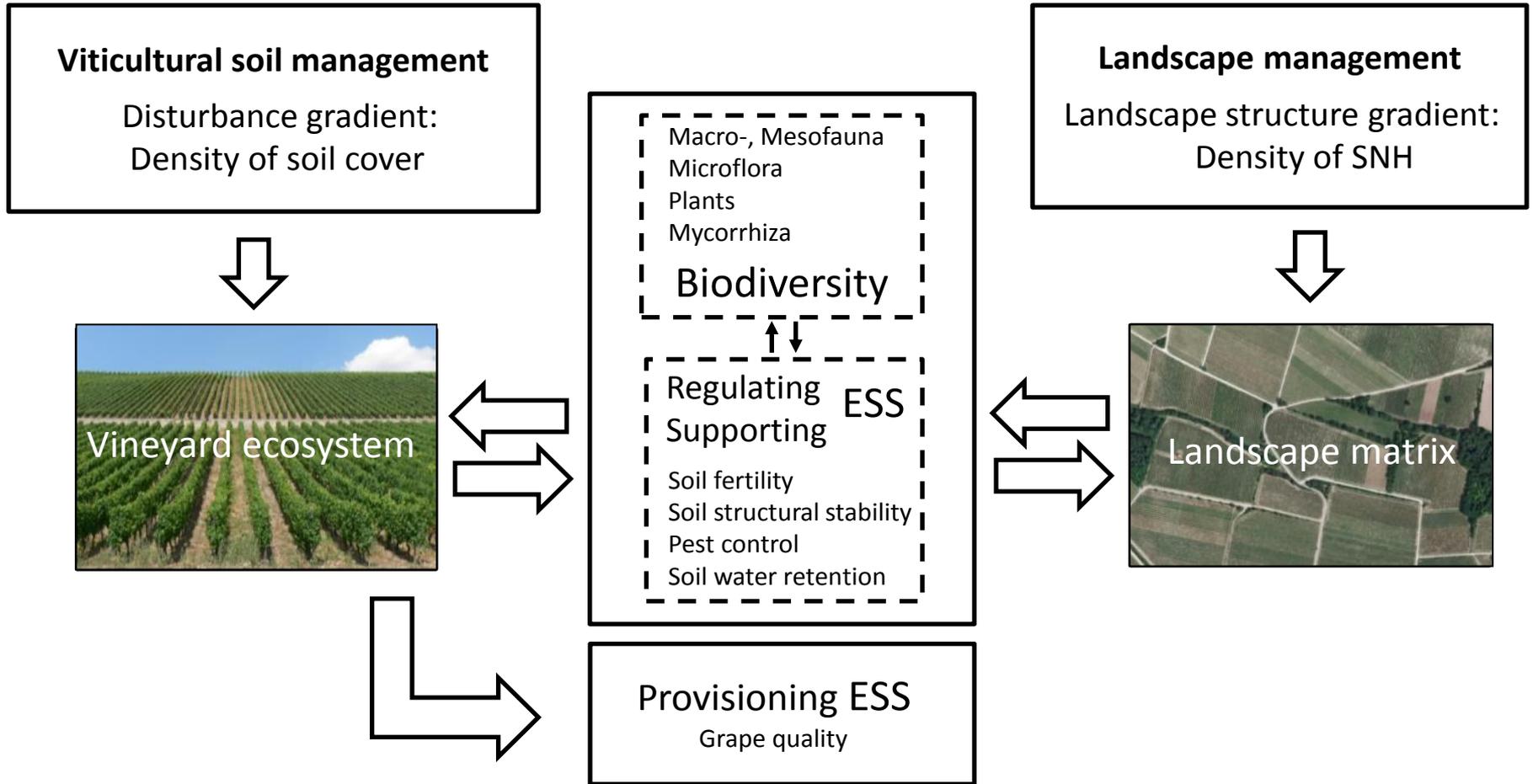
Consortium: Universities of five countries

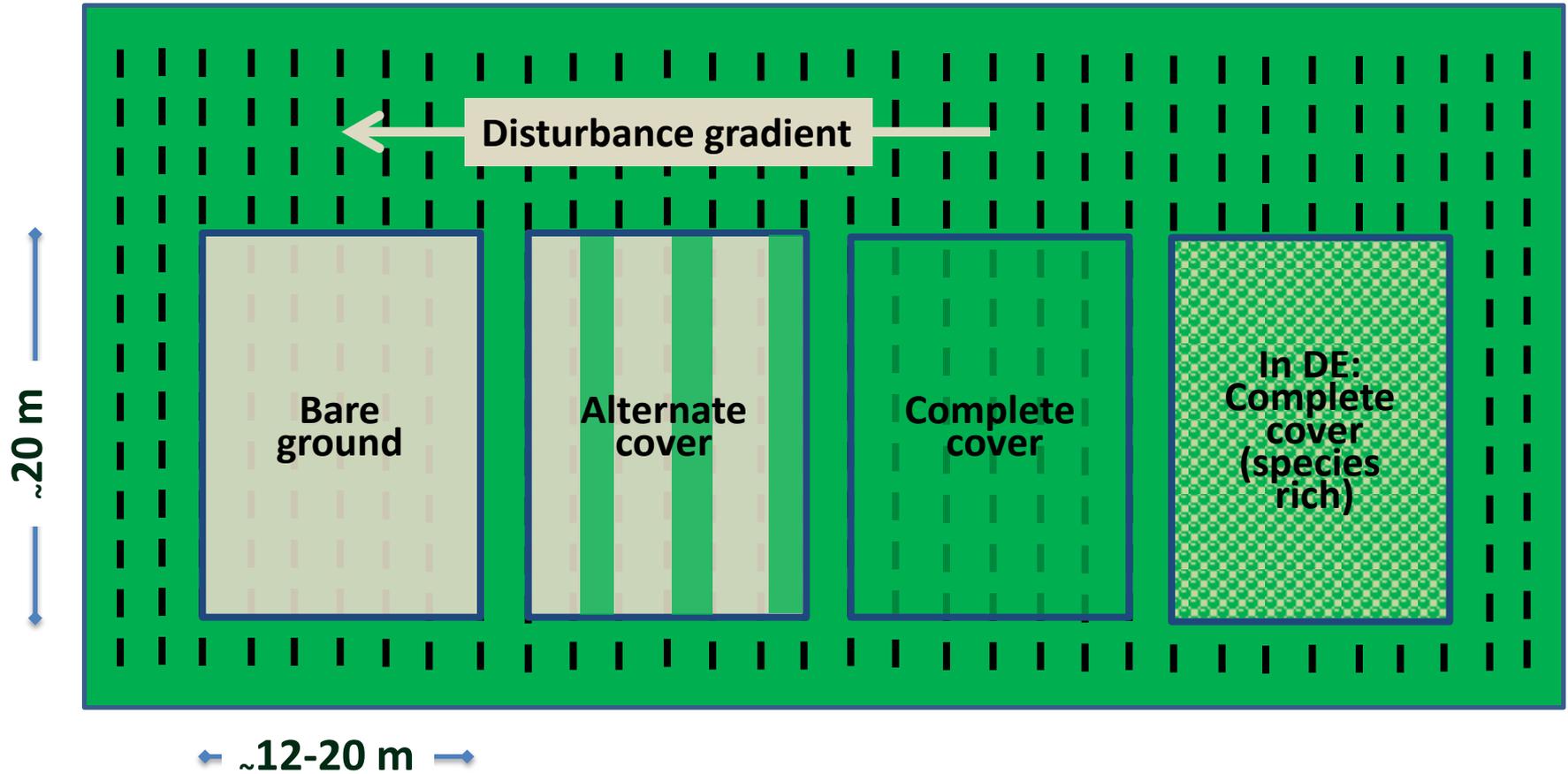


Question:
How can biodiversity promote Ecosystem Services leading to a higher added value?

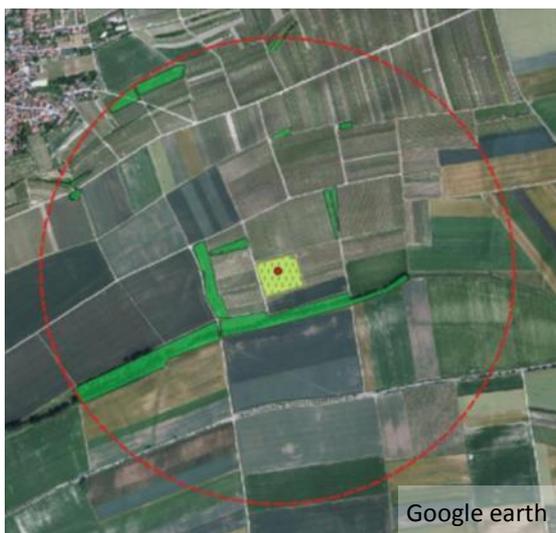


Aim:
Identification of management options for promoting biodiversity linked ESS in order to reduce external inputs in vineyard ecosystems





Density of SNH



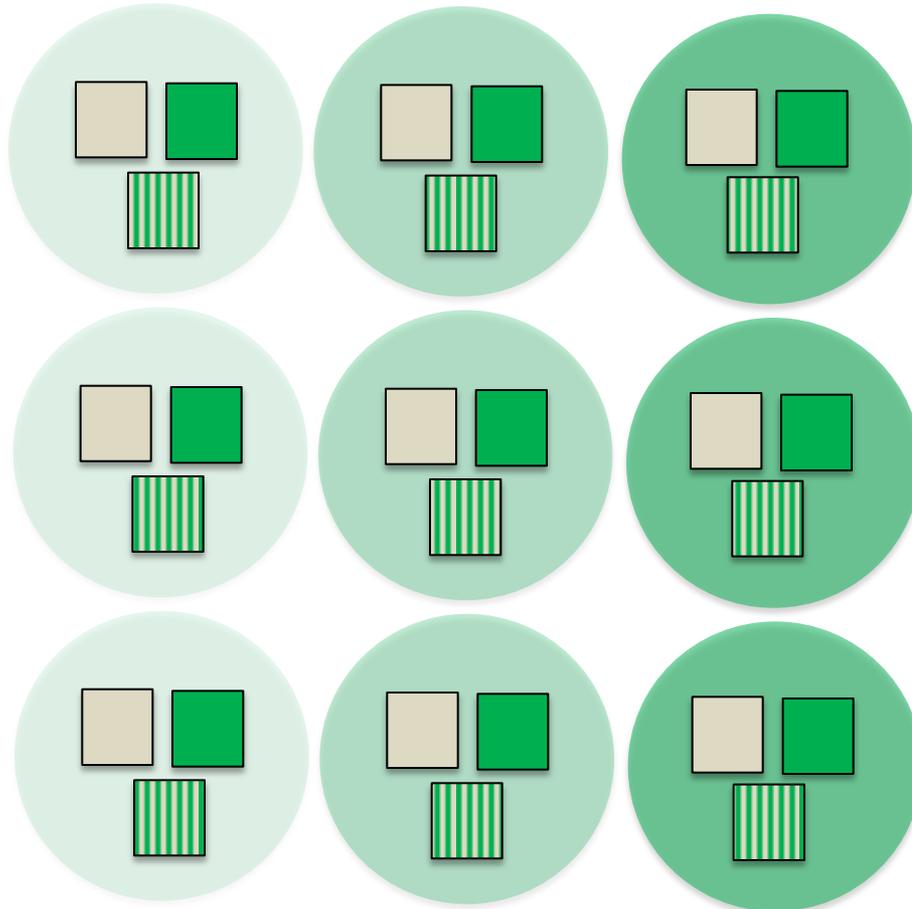
4 %



11 %



32 %



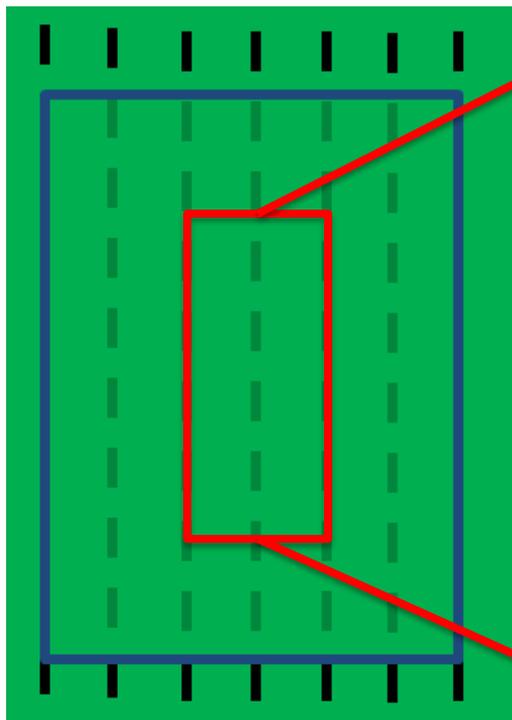
3 soil management treatments
3 landscape density levels
3 replications (subregions)

→ in each country

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



Study plot



Macro-, Mesofauna
Microflora
Plants
Mycorrhiza

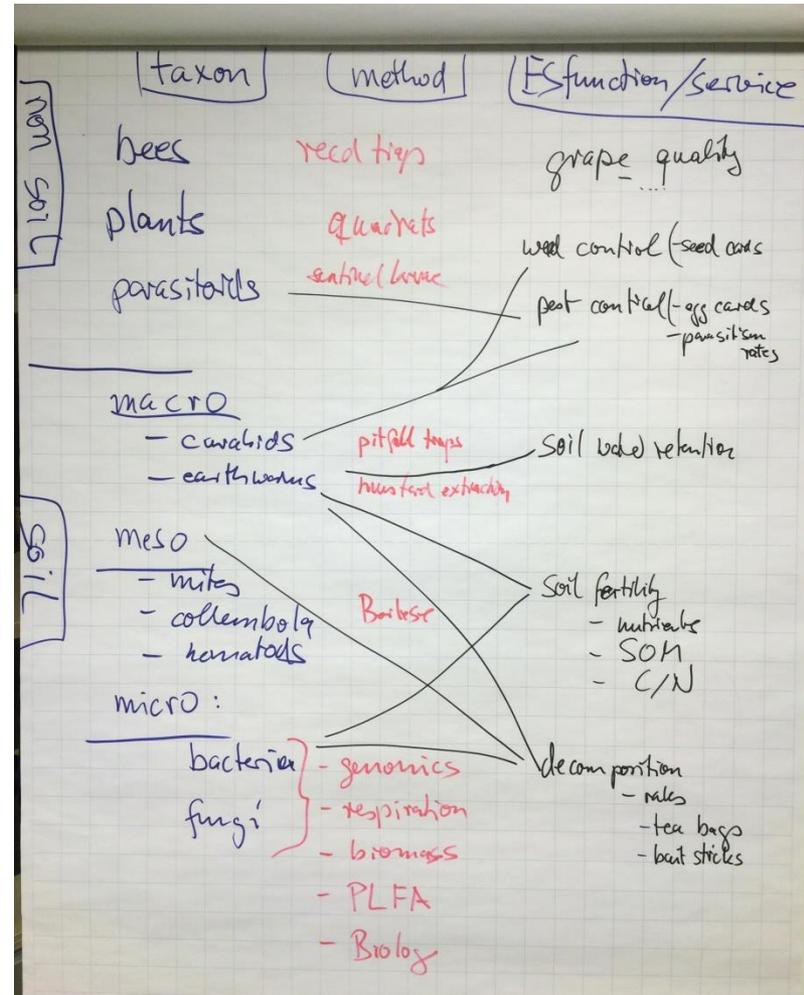
Biodiversity



Regulating ESS
Supporting ESS
Soil fertility
Soil structural stability
Pest control
Soil water retention

Provisioning ESS
Grape quality

Kick-off meeting 9.-11.2.2015 Geisenheim

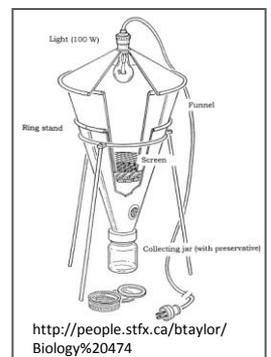


Biodiversity

Parameters related to Ecosystem Functions and ESS



Arthropods



<http://people.stfx.ca/btaylor/Biology%20474>

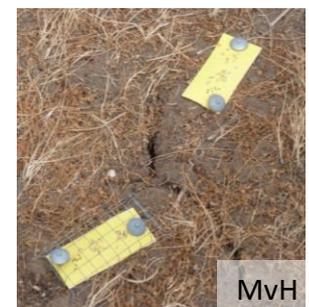
Mesofauna



Soil parameters related to fertility



Decomposition



Seed predation



Earthworms

AR	2011						2012					
	BBCH 60	BBCH 73	BBCH 93	BBCH 60	BBCH 73	BBCH 93	BBCH 60	BBCH 73	BBCH 93	BBCH 60	BBCH 73	BBCH 93
Genus	W	AP	AP/BB									
Cryptosporium												
Luteobasidium												
Cystoflabasidium												
Cladonia												
Cladosporeum												
Askenzia												
Epicoecium												
Mentha												
Verticillium												
Epicoecium												

Microflora: Bacteria, Fungi



Plants



Pest control by parasitoids



Activity of entomopathogenic fungi



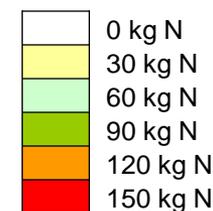
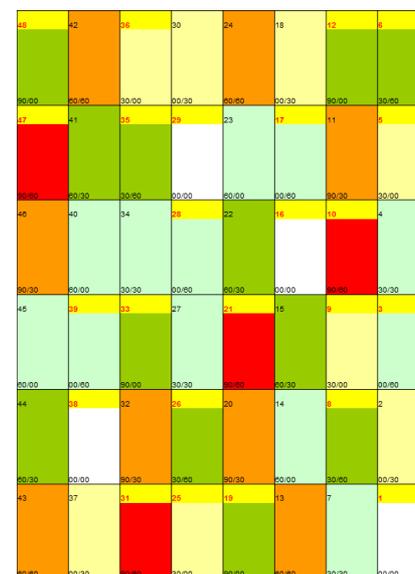
Grape quality

Thematic WP

	RO	WP 2 Biodiversity	DE	WP 3 ESS	AT	WP 4 Provisioning Services
		<ul style="list-style-type: none"> • Sampling: • Macrofauna • Microflora • Mycorrhiza • Plants 		<ul style="list-style-type: none"> • Soil fertility • Soil structural stability • Pest control • Water retention 		<ul style="list-style-type: none"> • Grape quality • Yield • Socio-economic values
<i>Integrative WP</i>	FR	WP 1: Experimental Setup	<ul style="list-style-type: none"> • Development of techniques and methods, • Site selection, GIS mapping • Standardised sampling design 			
	CH	WP 5: Analysis and Synthesis	<ul style="list-style-type: none"> • Statistical procedures • Synthesis by structural equation modelling 			
	FR	WP 6: Spread of results	<ul style="list-style-type: none"> • 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 farming type (conventional/organic) and landscape structure on biodiversity in vineyard ecosystems (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  and first leaflet

www.PromESSing.eu



Acknowledgement

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