

How can policy strengthen the synergies between agriculture and soil biodiversity?

Martin Banse, Martin Potthoff



Foto: Potthoff

Or:

**How can earthworms
enter the parliament?**



Foto: Potthoff



Programm
Produktionen
Archiv
Karten
Haus
Service

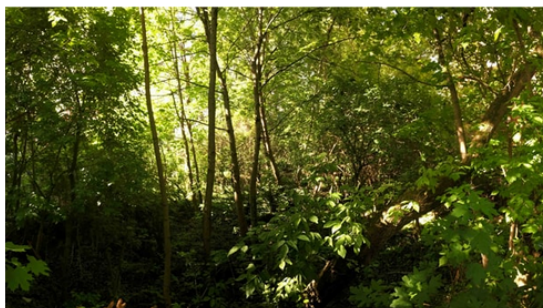
Kontakt
Newsletter
Impressum
Datenschutz

Twitter
Facebook
Instagram

Ballhaus Ost
Pappelallee 15
D-10437 Berlin
030 44 049 250
info@ballhausost.de
(U) Eberswalderstr.

Beyond Nature (Jenseits der Natur)

Club Real



September 08, 2019, 4.00 to 9.00 pm:
»Parliament of Organisms« in the garden (Osloer Str.
107|108, 13359 Berlin-Wedding)

September 29, 2019, starting at 11.00 am:
»Day of the Garden Executive« in the garden (Osloer Str.
107|108, 13359 Berlin-Wedding)

November 03, 2019, 8.00 pm:
»Palace of Justice of the People's Government« at Ballhaus
Ost

September 08 | 21: Free entrance

November 03: 15 | 10 Euros

[Tickets](#)

>>>[Deutsch](#)

Nature goes politics! Starting on the September 08 over 200 species of organisms, living at a site on Osloer Str. 107|108 in Berlin, are granted equal political rights. **Beyond Nature (Jenseits der Natur)** turns an ecosystem into a democratic system with all inhabitants, from bacteria to vertebrates, as members of the political community. Decisions are taken by the Parliament of Organisms, where 15 human representatives fight for the issues and rights of their

<https://www.ballhausost.de/produktionen/jenseits-der-natur/>

An art-performance:

- Nature goes politics!
- Over 200 species of organisms, living at a site on Osloer Str. 107|108 in Berlin, are granted equal political rights.
- Beyond Nature (Jenseits der Natur) turns an ecosystem into a democratic system with all inhabitants, from bacteria to vertebrates, as members of the political community.
- Decisions are taken by the Parliament of Organisms, where 15 human representatives fight for the issues and rights of their represented species.
- These decisions have real consequences on the ecosystem during the »Day of the Garden Executive« and are questioned in the third part of the procedure: »The Palace of Justice« of the Organisms Republic at Ballhaus Ost.
- If living beings, politically invisible, unnoticed, unheard, are suddenly being heard, are being treated as individuals with political rights, what happens to our concept of »nature«?



<https://www.ballhausost.de/produktionen/jenseits-der-natur/>

An Art-performance:

- Nature goes politics!
 - Over 200 species of organisms, living at a site on Osloer Str. 107|108 in Berlin, are granted equal political rights.
 - Beyond Nature (Jenseits der Natur) turns an ecosystem into a democratic system with all inhabitants, from bacteria to vertebrates as members of the political community.
 - Decisions are taken by the Parliament of Organisms, where 15 human representatives fight for the issues and rights of their represented species.
 - These decisions have real consequences on the ecosystem during the »Day of the Garden Executives« and are questioned in the third part of the procedure: »The Palace of Justice« of the Organisms Republic at Ballhaus Ost.
- And:
How would the next CAP look like?**
- If living beings politically invisible, unnoticed, unheard, are suddenly being treated as individuals with political rights, what happens to our concept of »nature«?



<https://www.ballhausost.de/produktionen/jenseits-der-natur/>

**Rettet
die Bienen,
Vögel und
Schmetterlinge**

**Letzte Chance:
Volksbegehren**

X Jetzt unterschreiben!

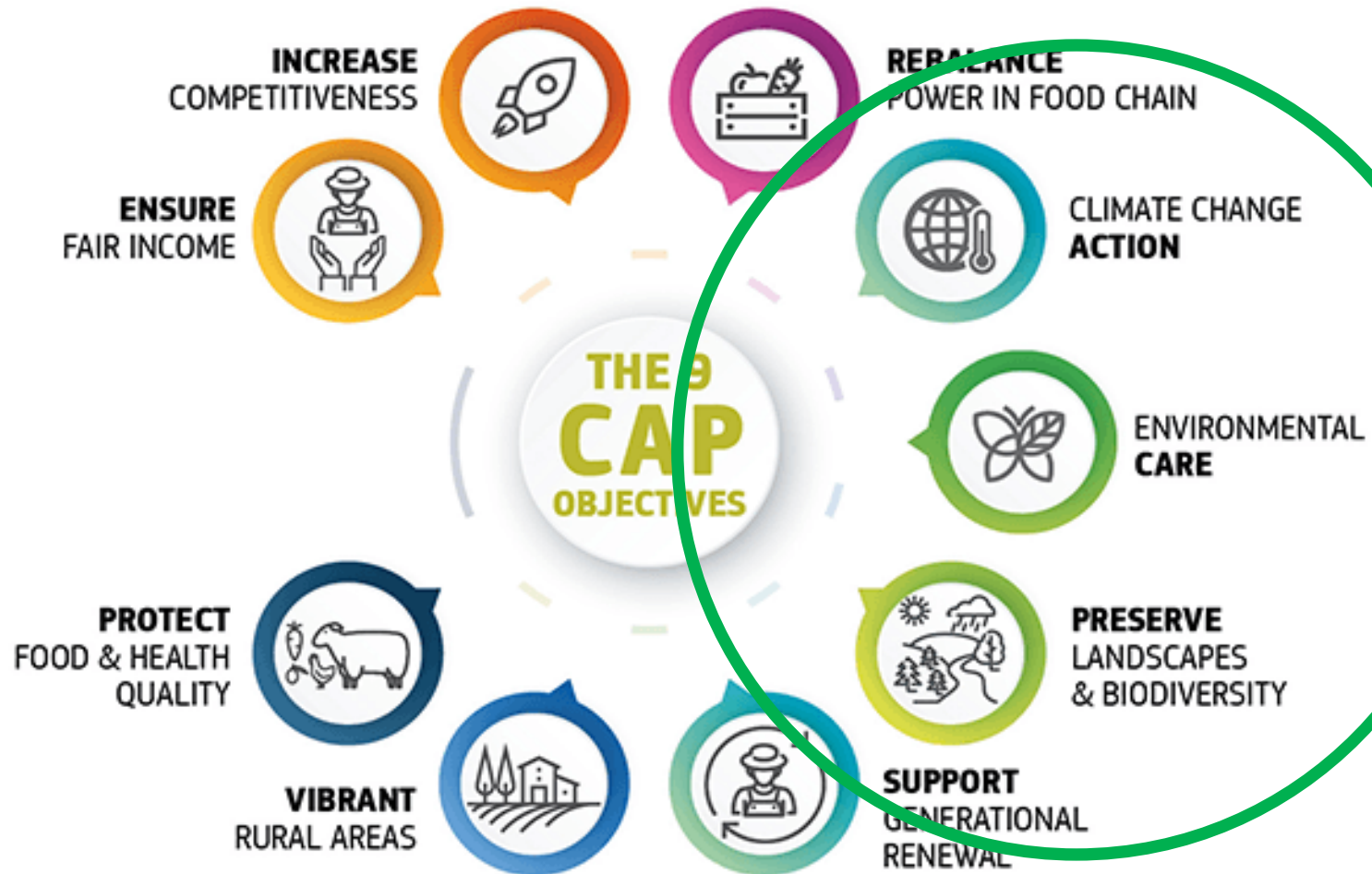
**Volksbegehren
Artenvielfalt** X
**Rettet die
Bienen, Blumen
und die Bauern!**



Extra-terrestrial – sub-terrestrial

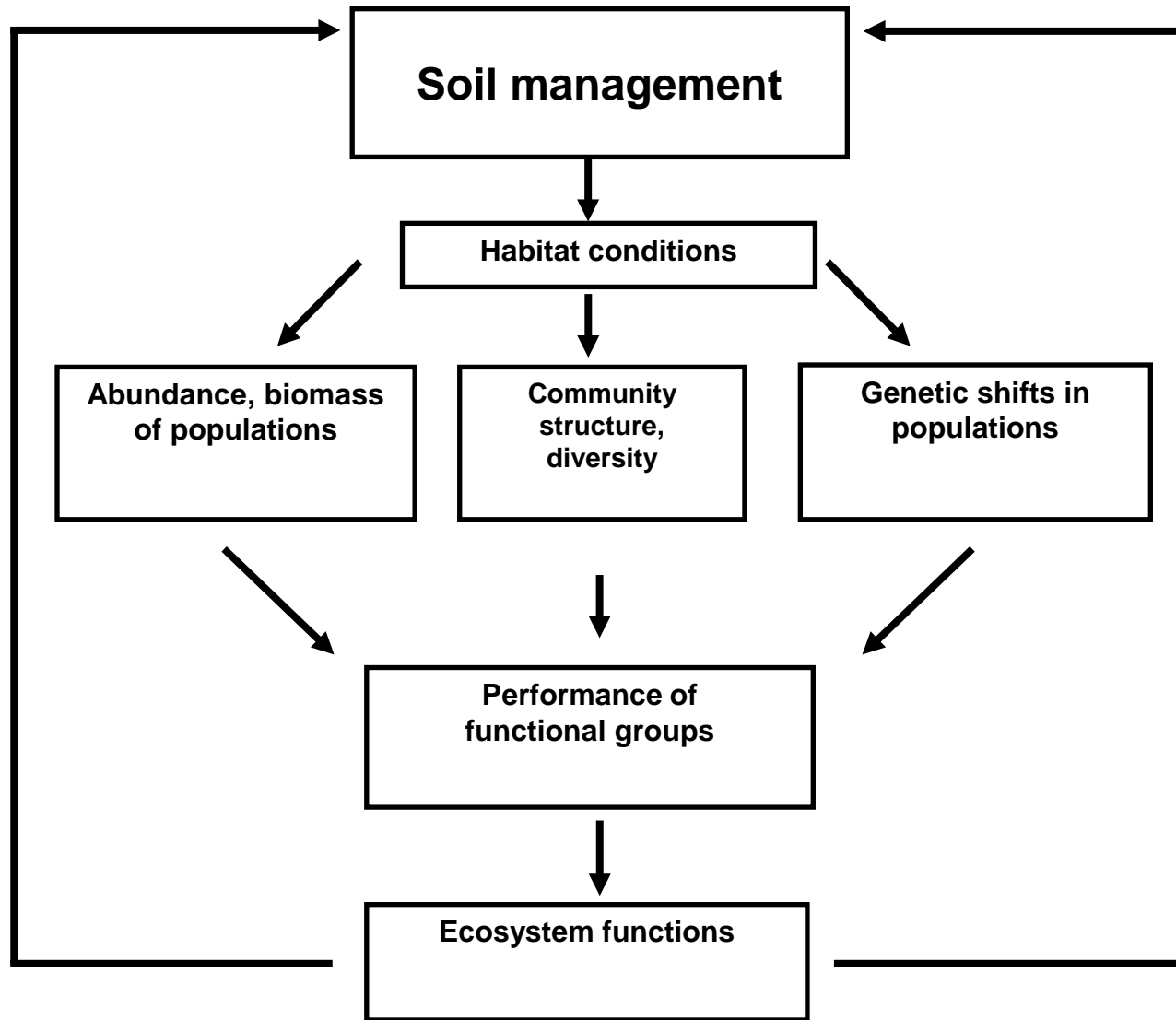
- Looking back at yesterday's discussion:
 - Improved soil quality and soil biodiversity is in the interest of farmers!
 - Technology helps to contribute on a improved soil biodiversity
- Does policies at national and EU level contribute and enhance to better soil diversity?
- How does it really work to get to a new CAP?

Objectives of the ,new' Common Agricultural Policies

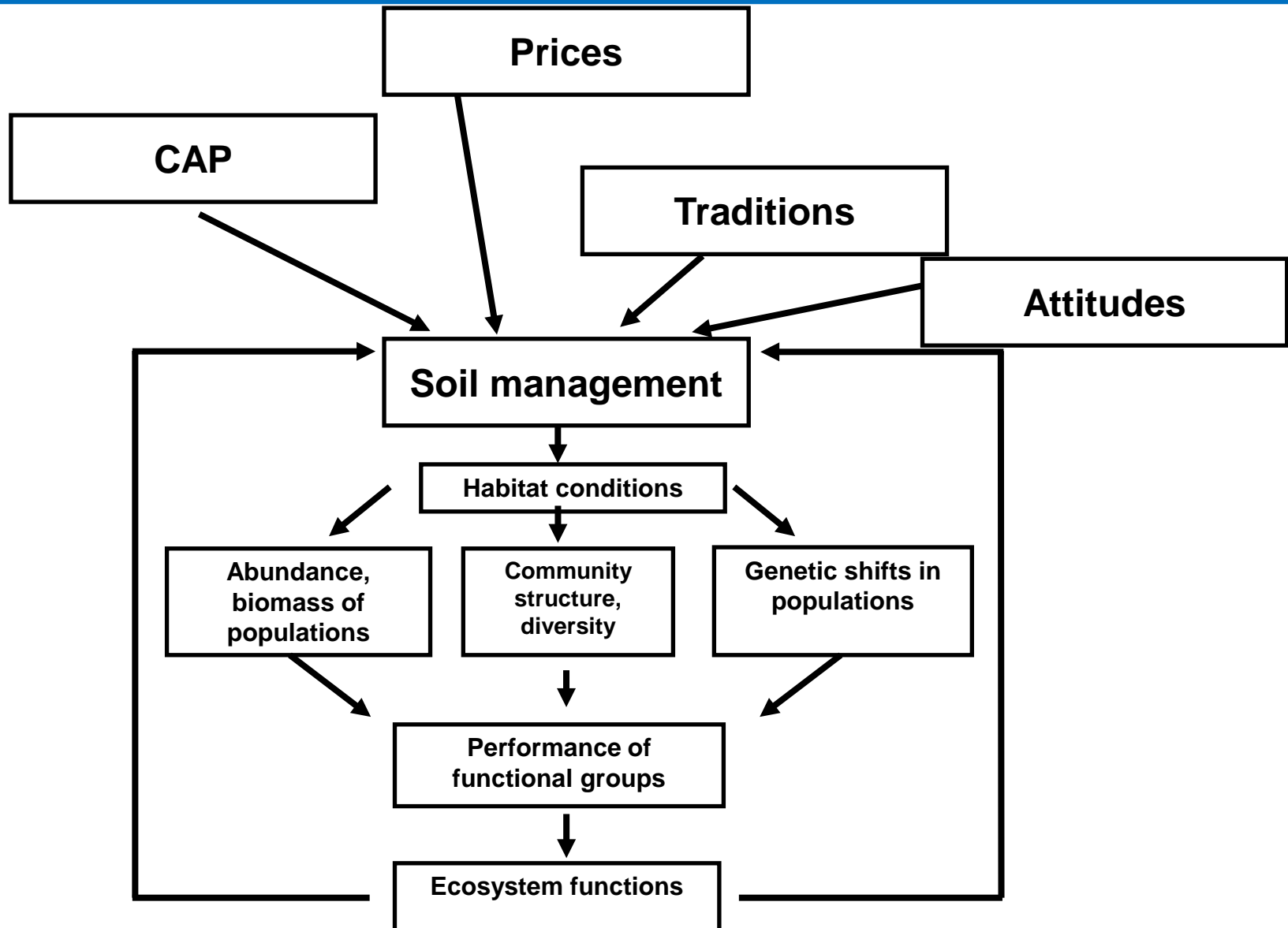


Source: DG Agri (2017)

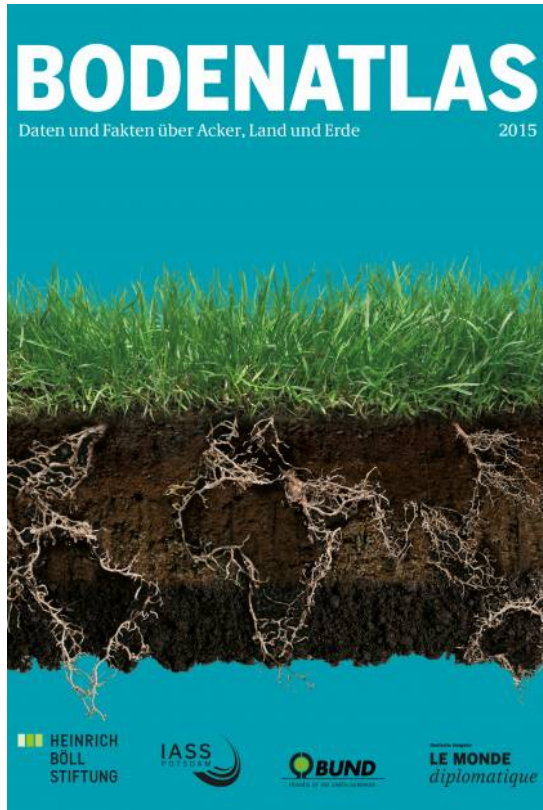
- ‚The Future of Food and Farming‘
 - Currently: Communication of the EU Commission 11/2017
- Elements of the ‚new‘ CAP
 - More subsidiarity, more regional responsibility
 - Approximation of payment levels between Member States
 - Better use of research and innovation, modernisation
 - Continuation of income support, capping and degression of direct payments, redistribution
 - Risk provisioning, increase in resilience
 - Meeting social requirements
 - Strengthening environmental and climate protection (3 of 9 targets)
 - Stronger focus on objectives and results (at programme level)



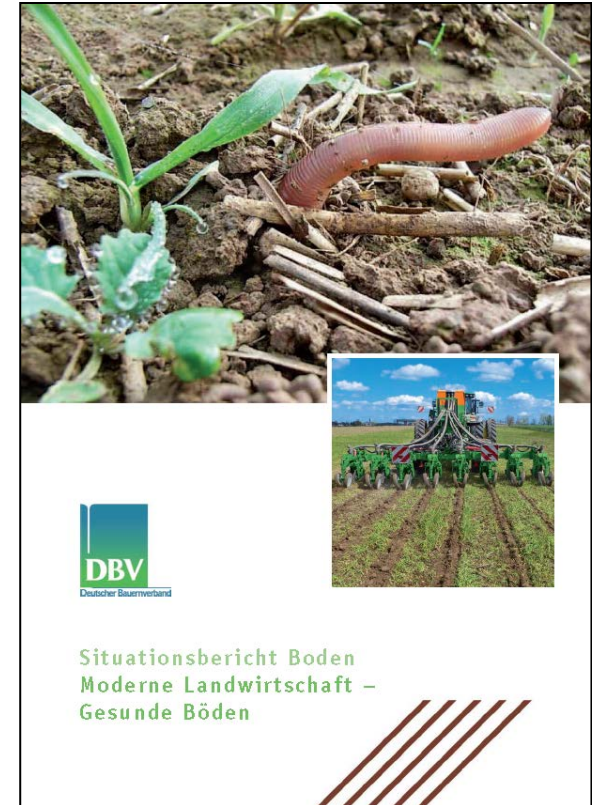
This scheme is a
life science scheme



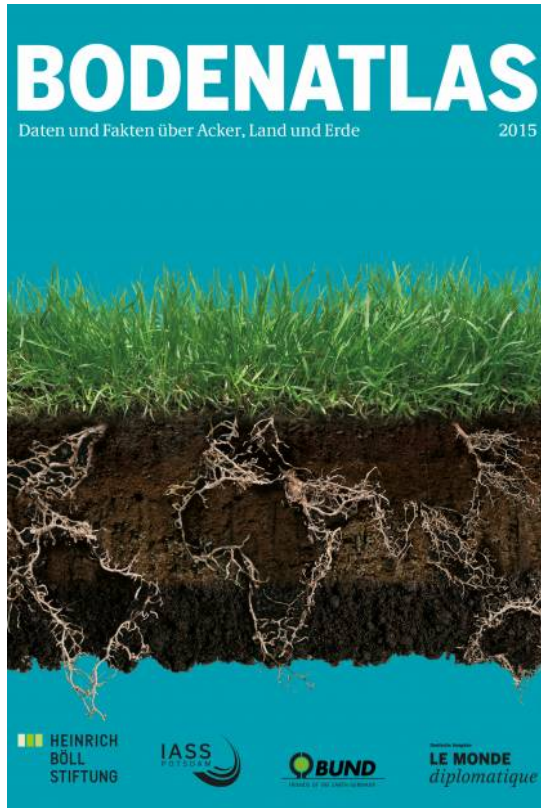
The clash of perspectives:



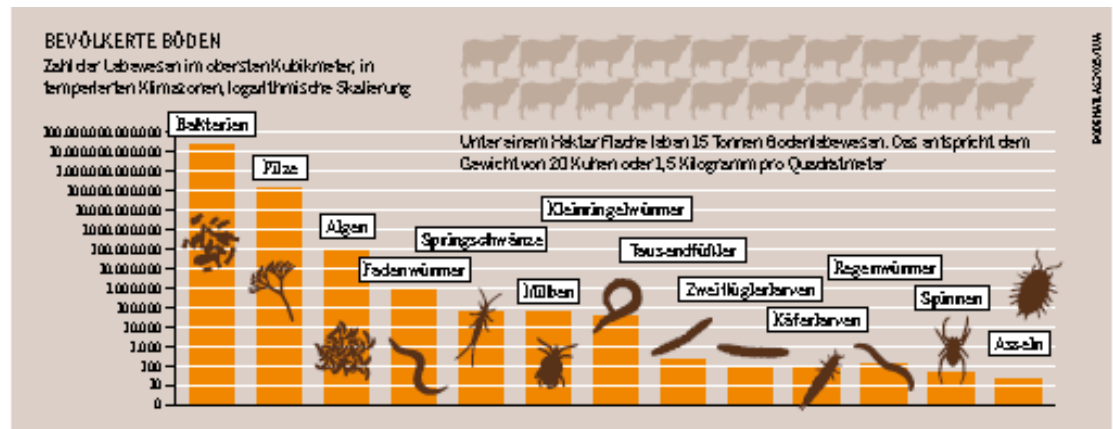
„wrong land use largely causes loss and degradation of fertile soils“

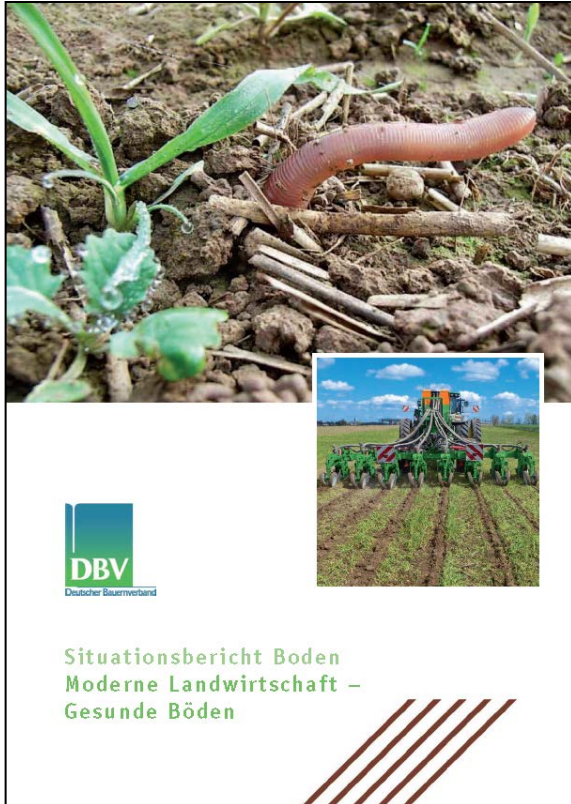


„modern agriculture ensures healthy and fertile soils;
German soils exemplify this“



- 19 chapters,
- 2 of which contain the term soil biota
- Context 1: soil as a living space;
soil engineering by earthworms
- Context 2: organic farming supports biota





- 6 chapters,
- 2 of which mention soil biota
- Context 1: organisms work for fertility
- Context 2: soil engineering by earthworms



How to overcome the clash of perspectives!

- Broadcast soil biota as the driver of services and intrinsic soil health.
- Elevate soil biota from a 'biodiversity goal' to the 'farmer's engineering companion'.
- Integrate soil biota into best practice suggestions and management recommendations.
- Break down adoption barriers via stakeholder involvement.

But what concerns and positions are in place

Organism concerns

Spokepersons:

- Nature conservation associations

Farmers concerns

Spokepersons:

- Farmers associations

public concerns

- All citizen

But what concerns and positions are in place

Organism concerns

Spokepersons:

- Nature conservation associations

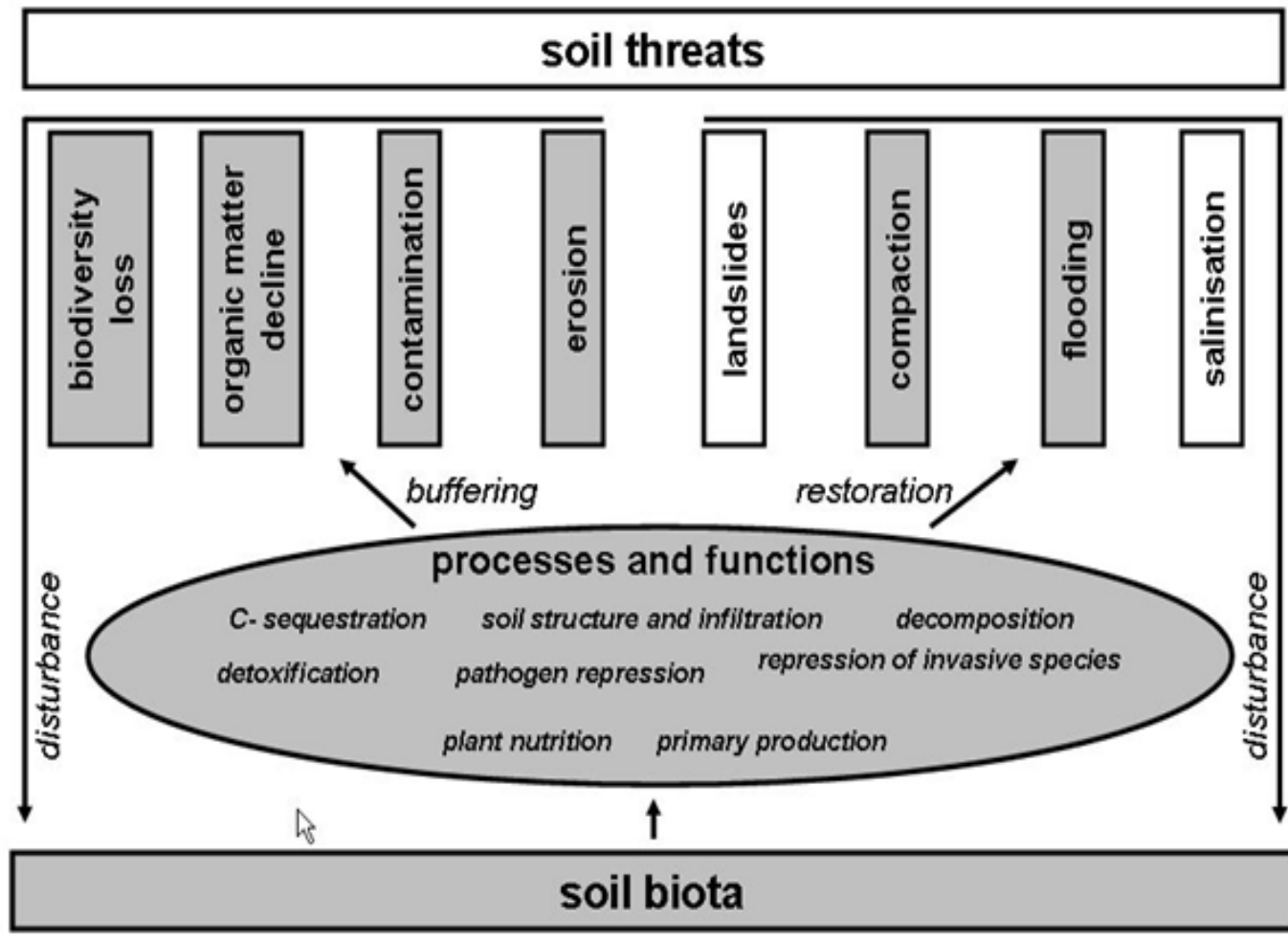
Farmers concerns

Spokepersons:

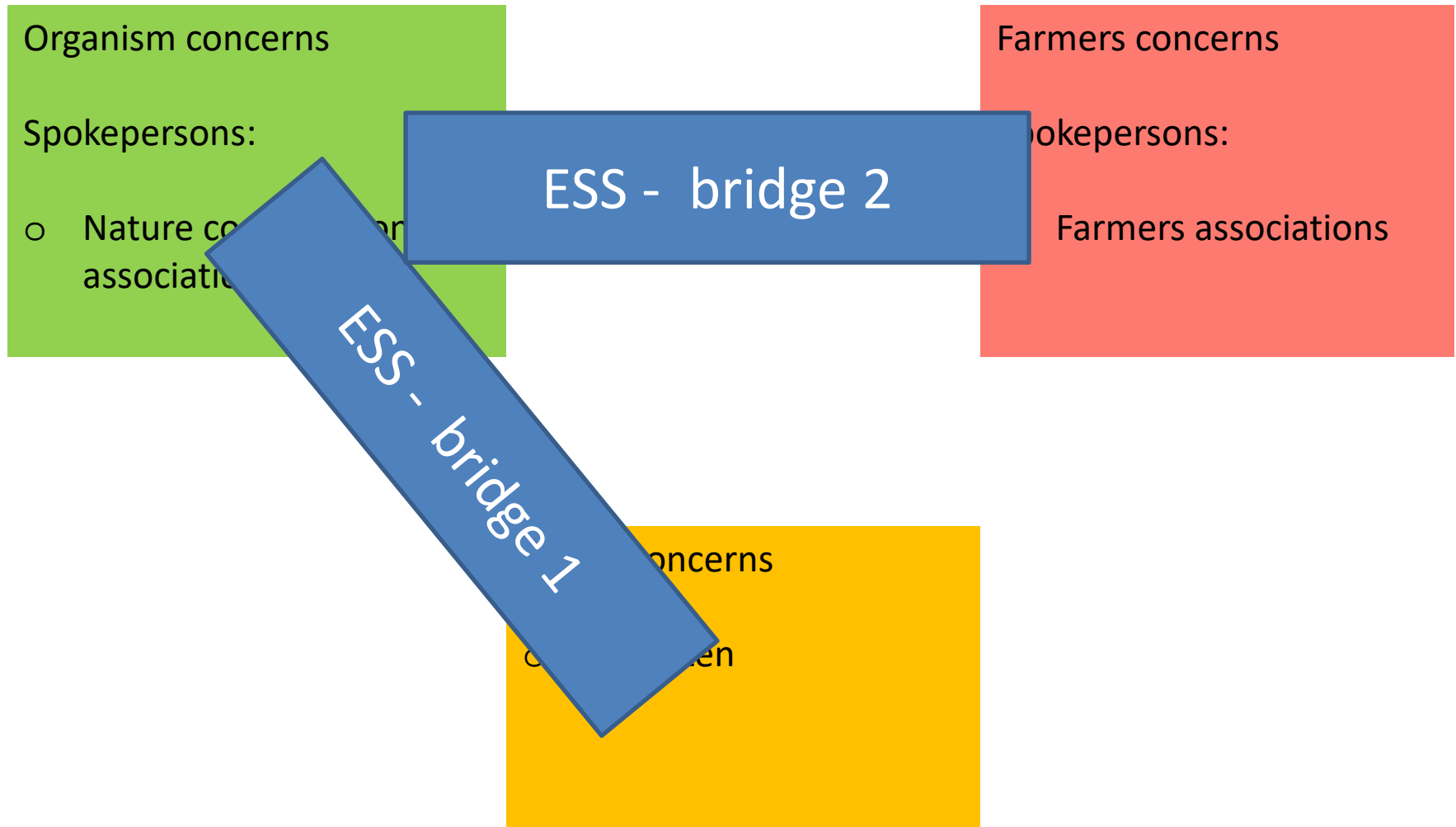
- Farmers associations

ESS - bridge 1

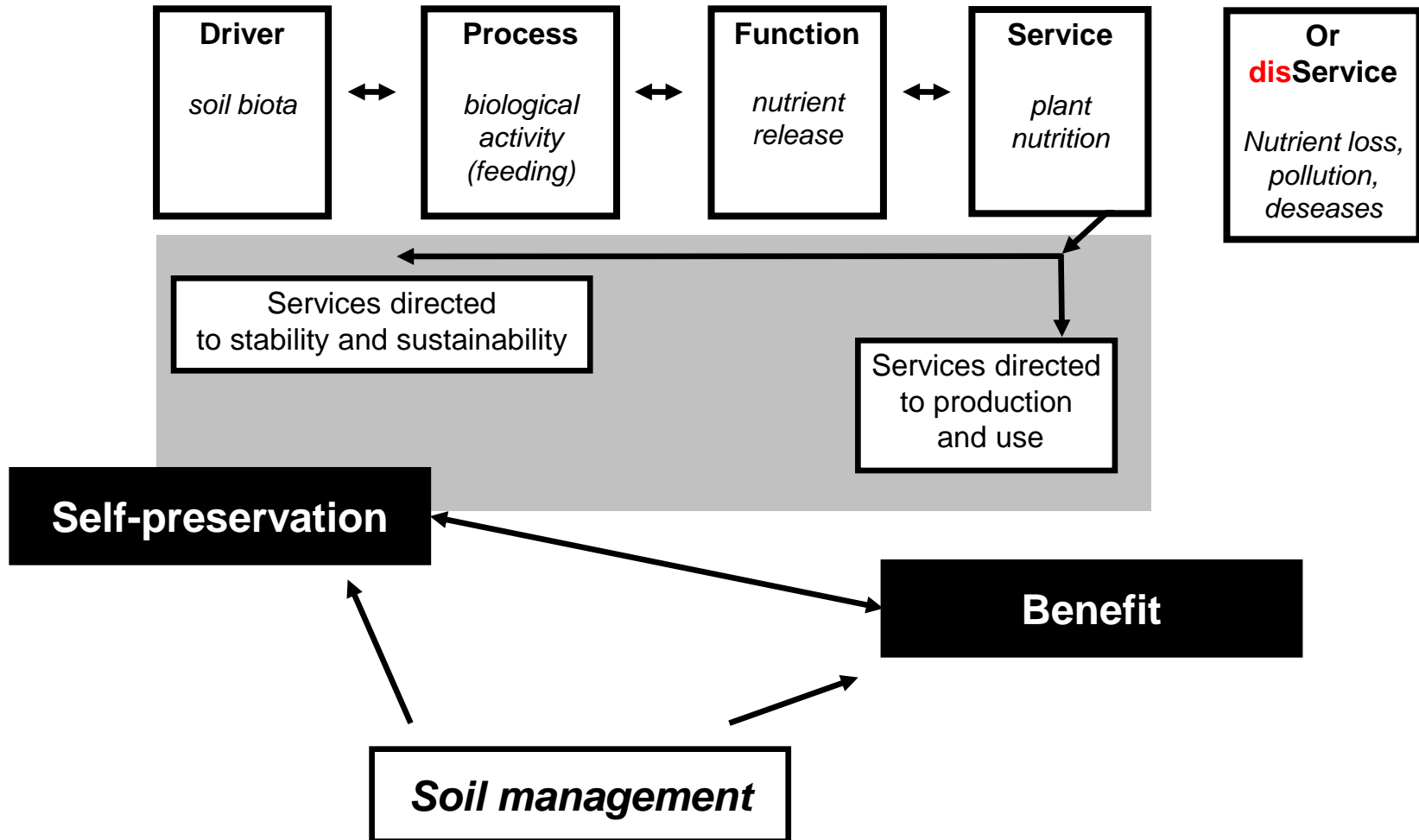
The soil biological impact



But what concerns and positions are in place



Services and disservices as a basic conception for the biological impact

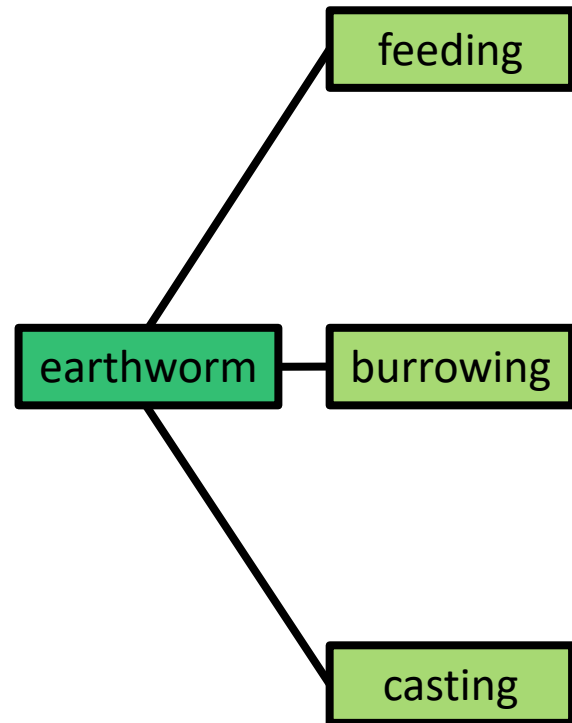


The earthworm engineering (not complete):

earthworm

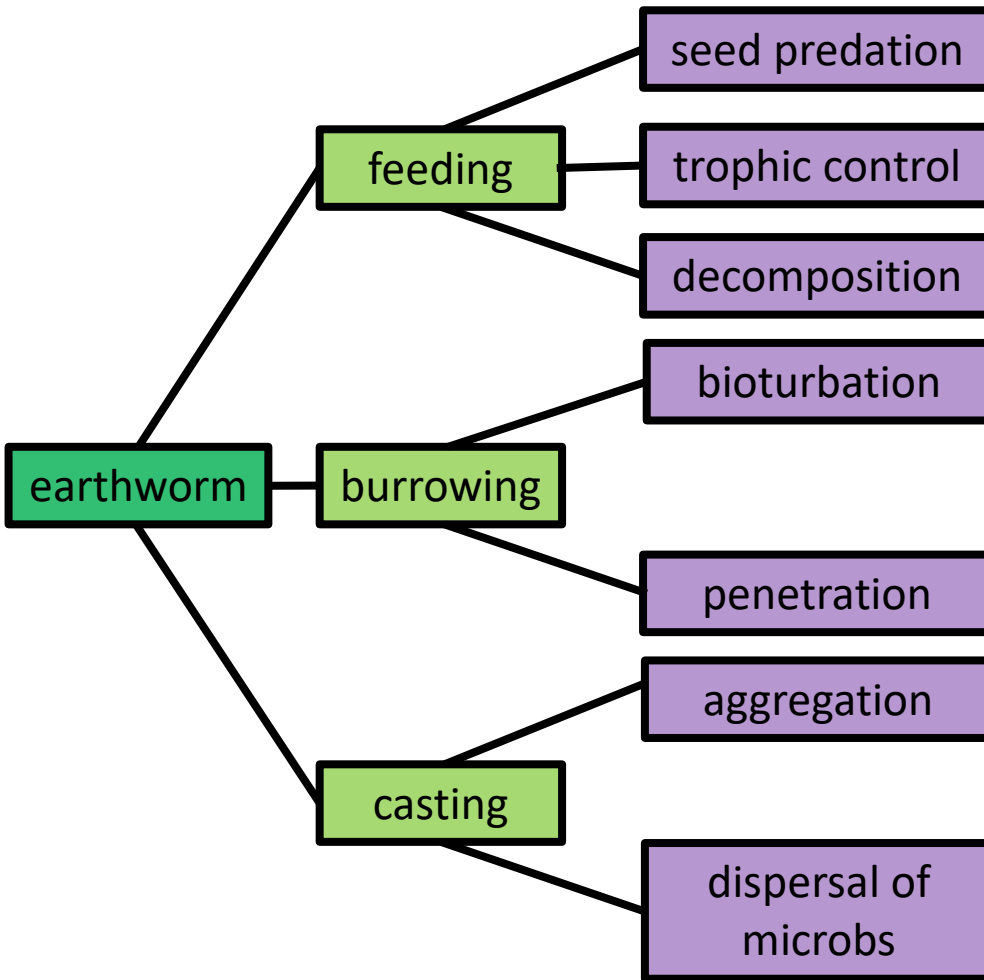
driver

The earthworms engineering glory (not complete):



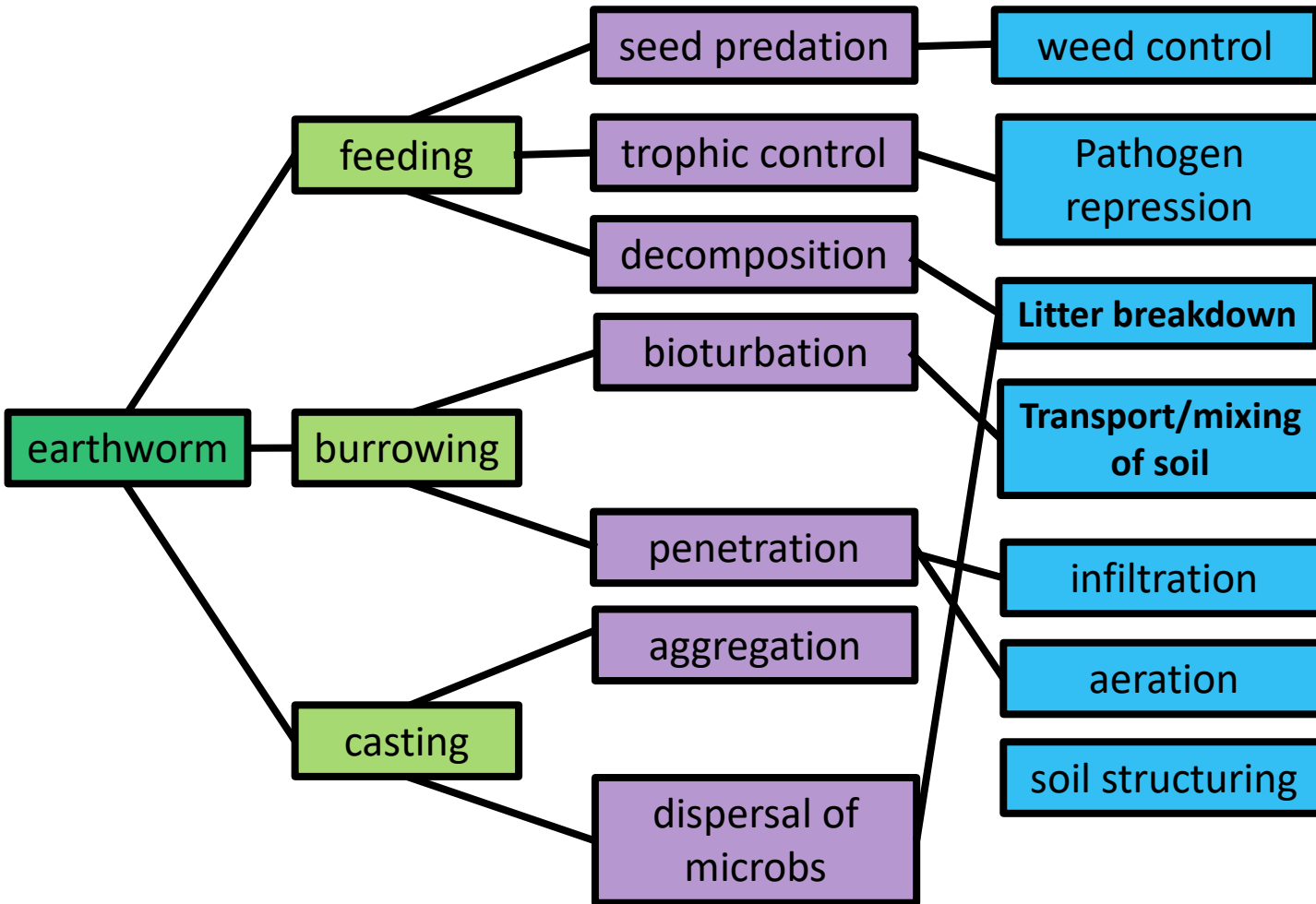
driver — *process*

The earthworms engineering glory (not complete):



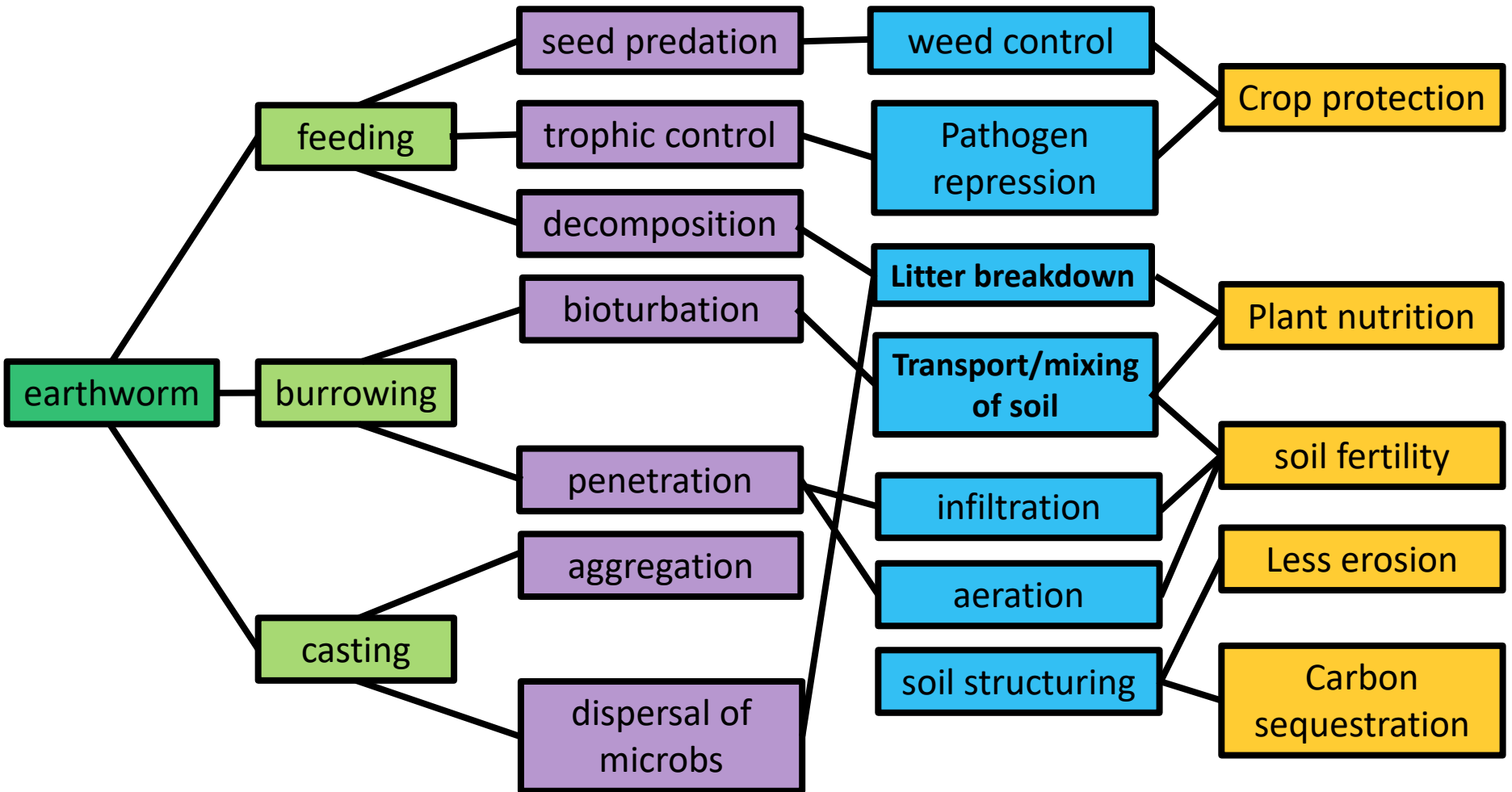
driver — *process* — *process/function*

The earthworms engineering glory (not complete):



driver — *process* — *process/function* — *function/service*

The earthworms engineering glory (not complete):



driver — *process* — *process/function* — *function/service* — *Service/benefit*

How do such win-win situations look like?

crop rotation

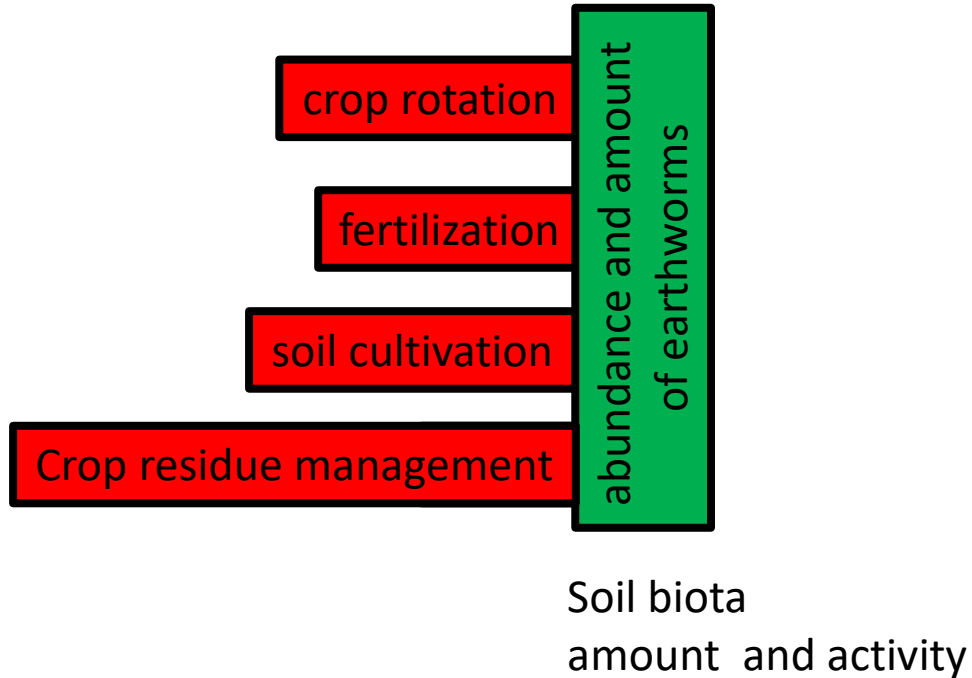
fertilization

soil cultivation

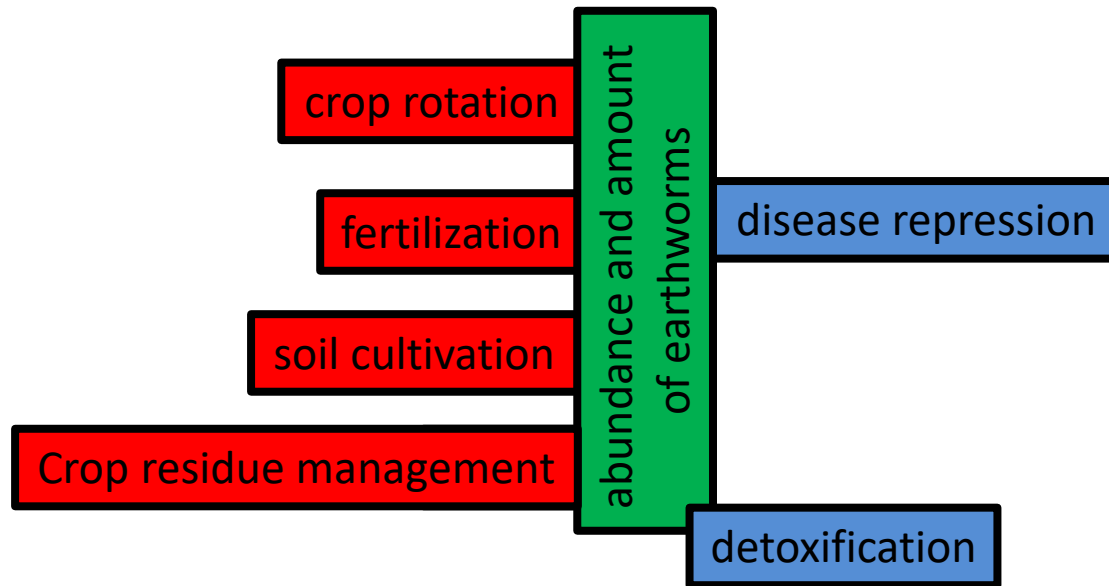
Crop residue management

Farmers decisions
Farming system

Earthworms: How do such win-win situations look like?



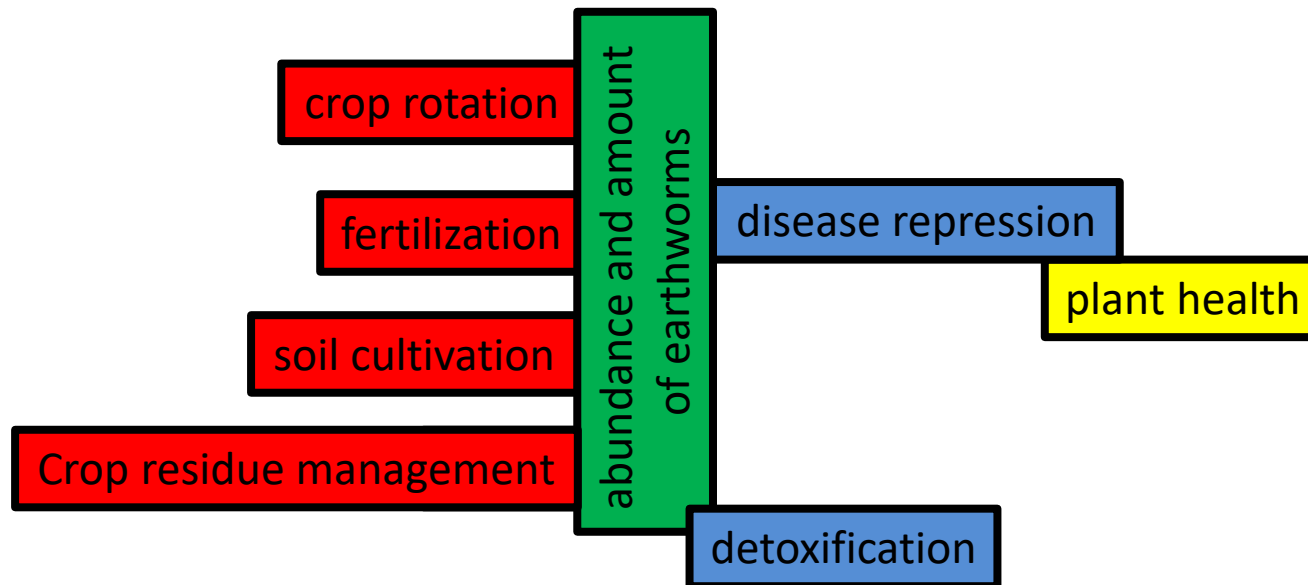
Earthworms: How do such win-win situations look like?



Service/function

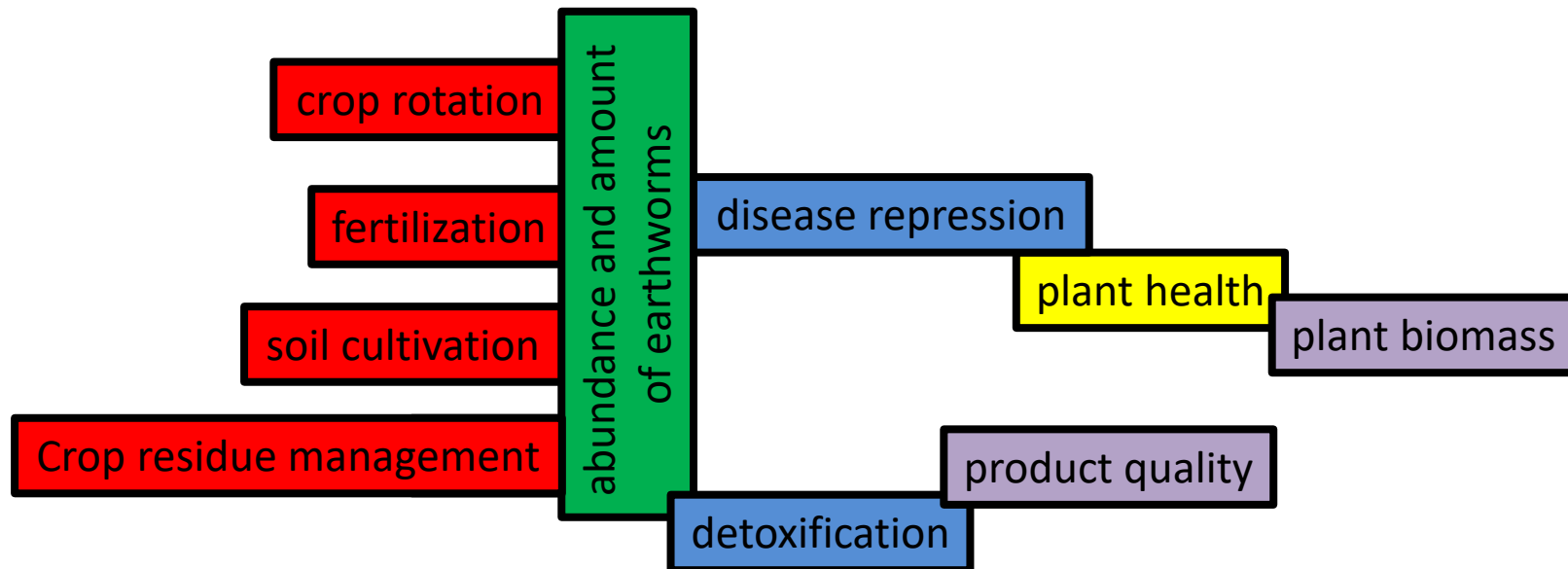
Cf: Wolfarth et al. 2011;
Wolfarth et al. 2016
Plaas et al. 2019

Earthworms: How do such win-win situations look like?



Service

Earthworms: How do such win-win situations look like?



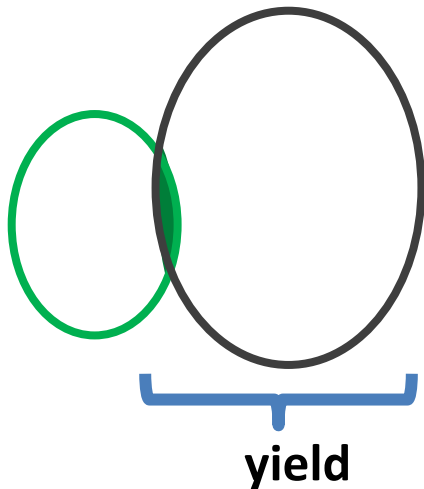
benefits provided by
earthworms

The „soil biota heal the plants“ cluster

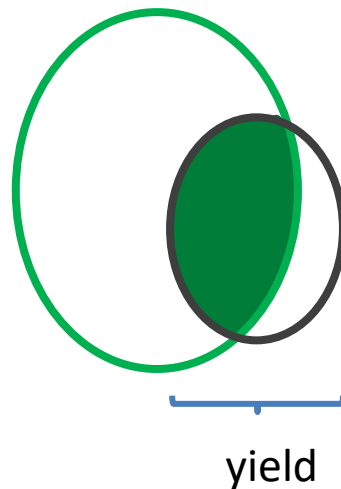
- Life science evidence is not the main driver of farmers decisions
- Ecosystem or „organism concerns“ are only one of many factors and are in need of spokespersons
Many spokespersons are more important than expert knowledge
- Organism concerns need to become concerns of human communities

Development paths - conceptual framework

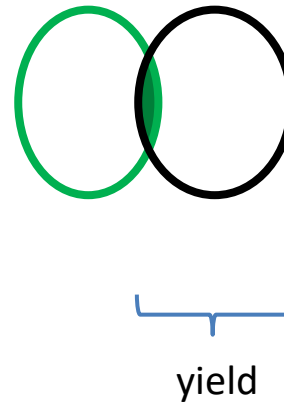
Productivity First



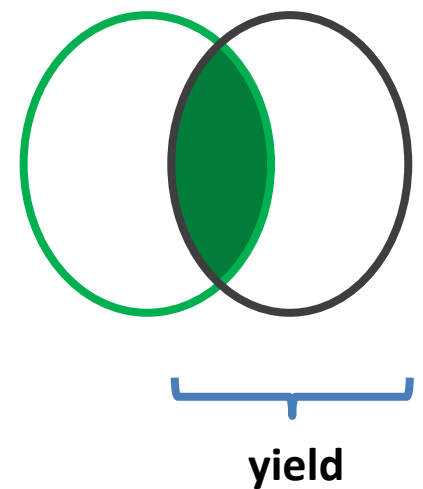
Mother Earth



Depleted Soil Life



Middle of the Road



Life science evidence is not the main driver of farmers decisions

Ecosystem or „organism concerns“ are only one of many factors

Source: modified after Bengtsson (2015)

- Productivity first: Yield level high, yield stability low
Farmer uses lots of external inputs,
soil biodiversity not taken into account in decision taking,
negative environmental impacts, risk of system collapse
- Mother Earth: Yield level like current situation, yield stability high
Soil biodiversity is an inherent part of decision taking,
high resilience of the system + delivery of multiple ESS
- Depleted Soil Life: Yield level low, yield stability relatively low
Farmer can't benefit from natural processes
natural resources become scarce, low input system
- Middle of the Road: high yield level with relatively stable yields
Farmer strongly relies on (new) external inputs
Tries to take advantage from natural processes,
Continuous reorganisation of the farming system to avoid harm to
environment and soil deterioration

The basic and simple conception of biota values in production systems is the following:

A for B = B for A

or for agricultural systems and soil biota:

**soil biodiversity works for agriculture
when
agriculture cares about soil biodiversity**

The European SoilMan – project focuses on this relation

What do we need?:

Understanding:

- Getting to know what measures support or detract soil biota and their performance.
- Getting to know the extent of impact: Who is doing what and how much?

Valuation:

- Translating the impacts of soil biota into values for production, environmental and human health and well-being.
What is worth an earthworm for the people (the societies)?

Management: ideas and recommendations for soil biota supporting

- soil management measures (farm level)
- governance tools (EU, policy level)

Understanding:

- Getting to know what measures support or detract soil biota and their performance.

- Getting to know the extent of impact: Who is doing what and how much?

Valuation:

- Translating the impacts of soil biota into values for production, environmental and human health and well-being.
What is worth an earthworm for the people (the societies)?

Management: ideas and recommendations for soil biota supporting

- soil management measures (farm level)
- governance tools (EU, policy level)

Understanding:

- Getting to know what measures support or detract soil biota and their performance.
- Getting to know the extent of impact: Who is doing what and how much?

Valuation:

- Translating the impacts of soil biota into values for production, environmental and human health and well-being.
- What is worth an earthworm for the people (the societies)?

Management: ideas and recommendations for soil biota supporting

- soil management measures (farm level)
- governance tools (EU, policy level)

Understanding:

- Getting to know what measures support or detract soil biota and their performance.
- Getting to know the extent of impact: Who is doing what and how much?

Valuation:

- Translating the impacts of soil biota into values for production, environmental and human health and well-being.
- What is worth an earthworm for the people (the societies)?

Management: ideas and recommendations for soil biota supporting

- soil management measures (farm level)
- governance tools (EU, policy level)

Acknowledgements

The SoilMan project (grant number 01LC1620) was funded through the 2015-2016 BiodivERsA COFUND call for research proposals with the following funders:





Programme groups: SSS



SSS4.12

Soil biota driven functions and ecosystem services in land use systems – quantification and valuation

Soil biota provides services that are beneficial to the productivity and sustainability of land use systems. This session aims to discuss how land use systems affect soil biodiversity in Europe and how soil biodiversity (i.e. the performance of functional groups) feeds back to soil functions and ecosystem services. Knowledge is mounting that a sustainable intensification of land use needs to include the conservation of processes and functions run by soil biota that are essential for self-preservation considering services provided by soil biota including soil biodiversity. The joined European agricultural policy including soil and biodiversity conservation is asking for surveys throughout Europe. The strong progress in developing methods for biodiversity determination in soil and the quantification of biota specific impacts should be mirrored by the contributions. Moreover, transversal interactions with socio-economical sciences should lead to the development of tools to assess soil management as a socio-ecological issue.

This session will focus on the role of soil biology in delivering soil functions in systems formed by a human, e.g. agricultural, forests or restored sites and the synergies and trade-offs that occur within the bundle of soil functions, crossing several spatial and temporal scales. Additionally we welcome contributions aiming at promotion of soil managing practices that aim to optimize the multi-functionality of soils.

Share: <https://meetingorganizer.copernicus.org/EGU2020/session/35048>

Convener: Martin Potthoff | Co-conveners: Agnieszka Józefowska , Florian Wichern

[Abstract submission](#)