Introductory presentation Plante Kongres 2025, Herning, Denmark

January 8, 2025 Prof. Peter Groot Koerkamp, Wageningen University

Re.Ge.NL naar rendabele regeneratieve landbouw

ReGeNL

Accelerator for the transition to a regenerative, profitable, and socially supported agricultural sector

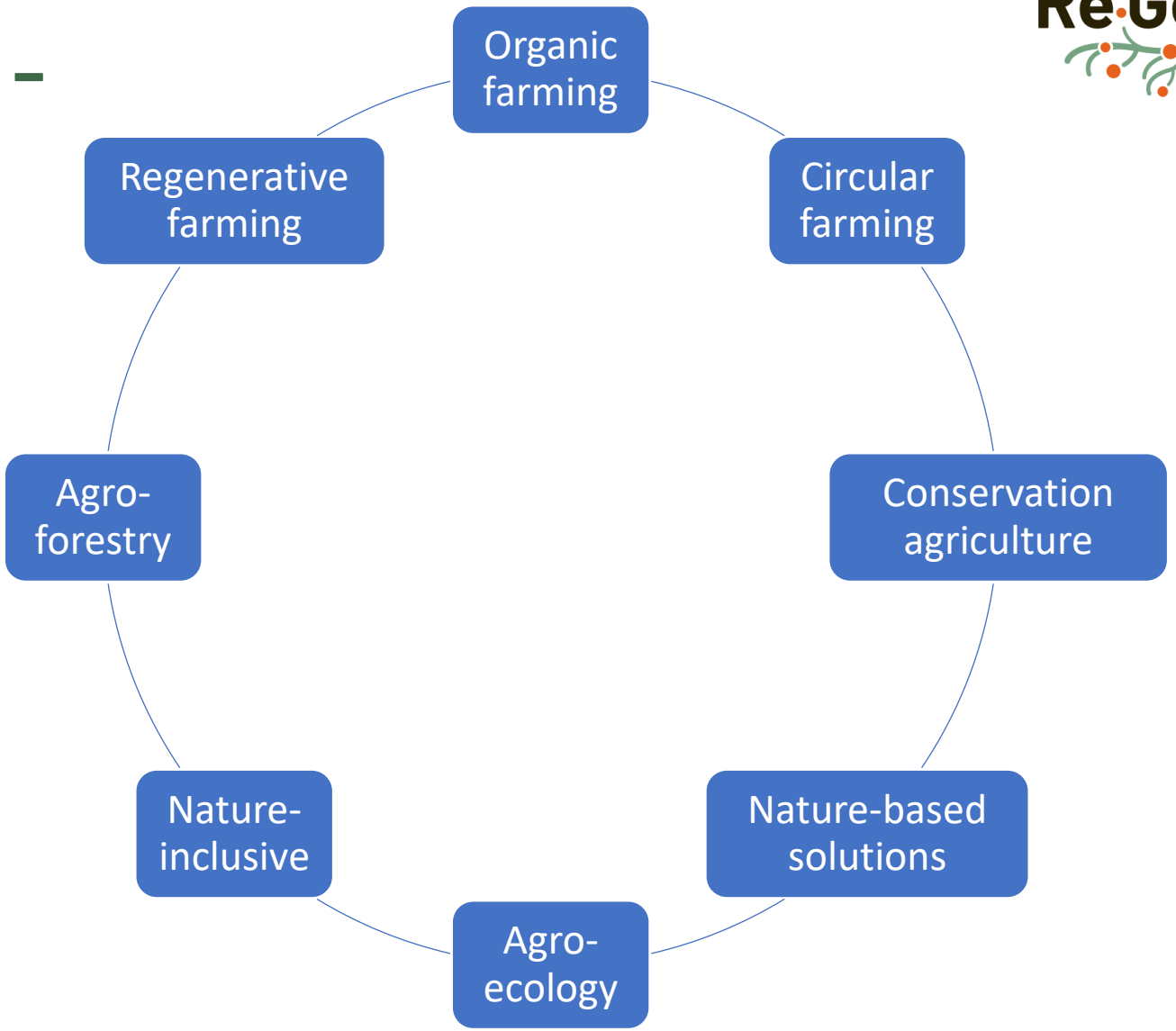
With contribution from Bert Smit, Mark Manshanden, Alfons Beldman, Marjolijn de Boer, Wouter-Jan Schouten, Loekie Schreefel, Niko Wojtynia, Marjolein Derks, Margriet Goris, Rachel Creamer, Howard Koster, Evelien de Olde and other team members of projects on regenerative agriculture

How to make the food system more sustainable?

In this presentation:

- Exploration of regenerative farming in NL
- Barriers for change
- The Re-Ge-NL program

Regenerative agriculture – what is it? or not?



Regenerative agriculture – what is it? or not?

Perspective

Outlook on AGRICULTURE

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Regenerative Agriculture: An agronomic perspective

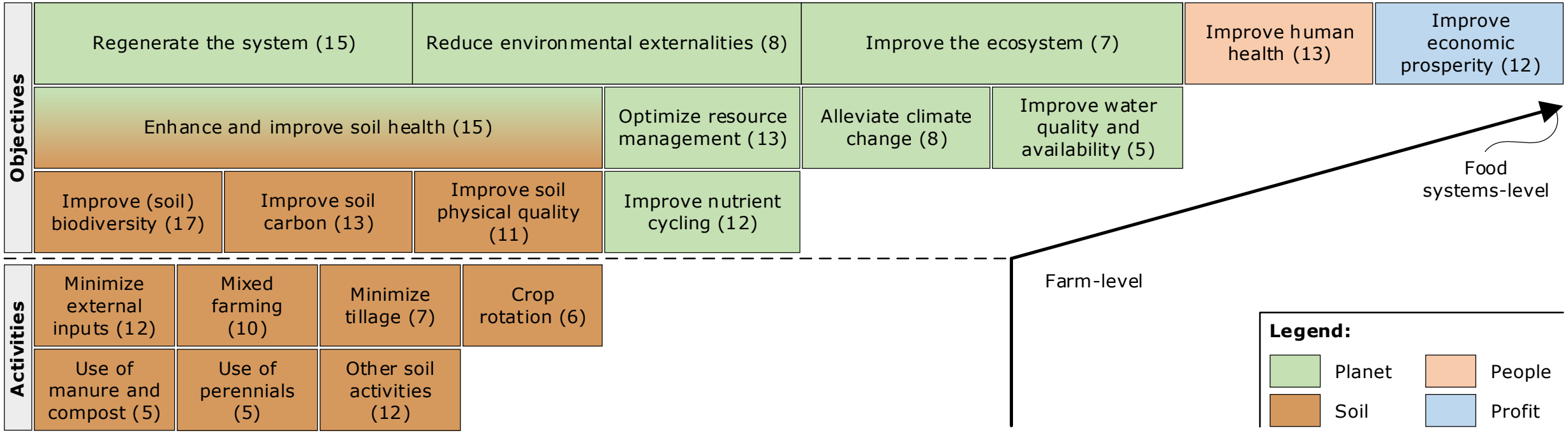
Ken E Giller[1], Renske Hijbeek[1], Jens A Andersson[1] and James Sumberg[2]

Abstract

Agriculture is in crisis. Soil health is collapsing. Biodiversity faces the sixth mass extinction. Crop yields are plateauing. Against this crisis narrative swells a clarion call for Regenerative Agriculture. But what is Regenerative Agriculture, and why is it gaining such prominence? Which problems does it solve, and how? Here we address these questions from an agronomic perspective. The term Regenerative Agriculture has actually been in use for some time, but there has been a resurgence of interest over the past 5 years. It is supported from what are often considered opposite poles of the debate on agriculture and food. Regenerative Agriculture has been promoted strongly by civil society and NGOs as well as by

Regenerative agriculture – overview of literature

(Schreefel et al., 2020)



Regenerative agriculture – Proposed definition

an approach to farming that uses **soil conservation as the entry point** to regenerate and contribute to **multiple ecosystem services**, with the objective that this will enhance not only the environmental, but also the social and economic dimensions of sustainable food production (Schreefel et al., 2020)

Regeneration at scale requires positive impact on 9 topics at 5 system levels

1. Soil Health
2. Primary productivity
3. Water and air quality
4. Biodiversity
5. Carbon, nutrients & material footprint
6. Economy; earning capacity
7. Social foundation
8. Food security & healthy diets
9. Animal welfare

Field:
- For example: density of soil food web

Farm
- For example: water usage < naturally available

Landscape
- For example: >10% of each square kilometer needs to be semi-natural habitat

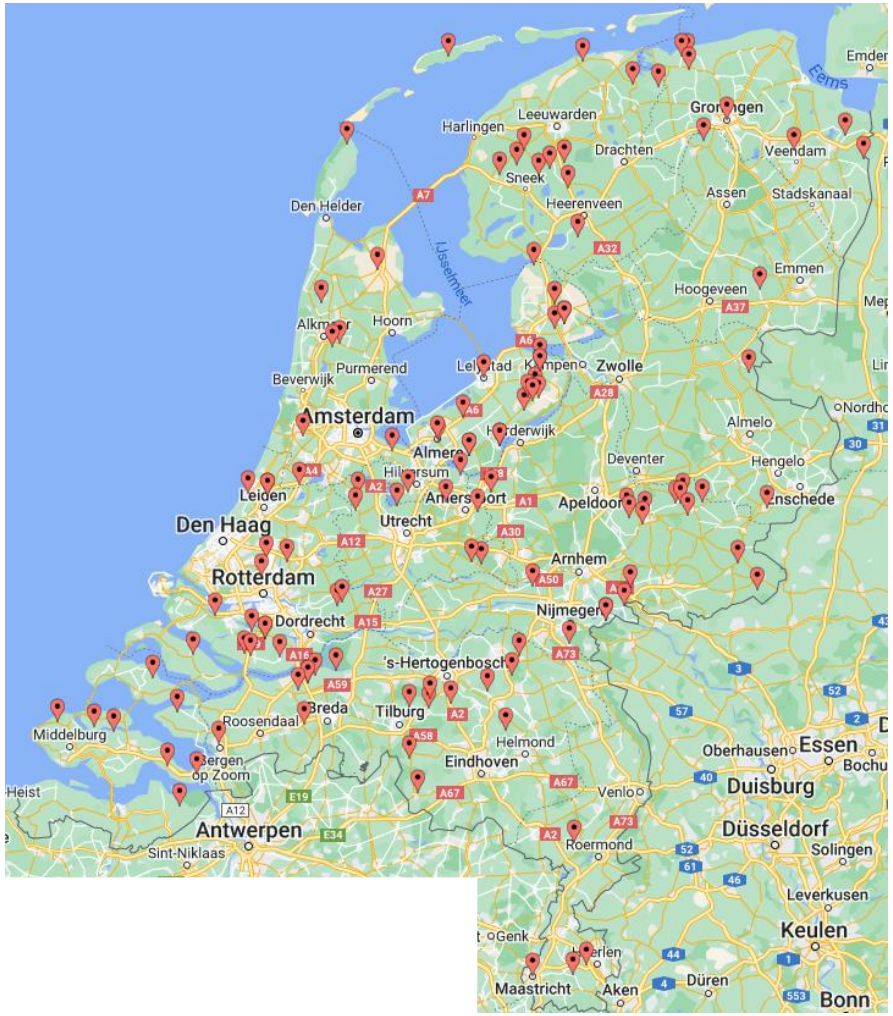
National
- For example: Deliver on the national climate agreement

International
- For example: agriculture and nature combined are a net carbon sink

Source: Groot Koerkamp et al., 2021. Proceedings AgEng conference 2021, Evora, Portugal

Community of practice
examples of regenerative farms & farmers

> 200 Dutch farmers pioneering with regenerative practices



Over 100 different regenerative practices identified

Six regenerative farm typologies identified

1. Arable farming with minimum chemical inputs + tillage
2. Circular animal husbandry in cooperation with arable farming
3. Crop and cultivar diverse arable farming + open field horticulture
4. Regenerative organic arable farming + open field horticulture
5. Extensive dairy farming on permanent herb rich grasslands (usually organic)
6. Permacultures, agroforestry and mixed/integrated farms

Dairy case: “De graasboerderij”

80 cows with young stock

83 ha grassland

Organic: no fertilizer, no pesticides

Spring calving herd, robust cows, milk yield around 6,000 kg

Summer: 9 months strip grazing (max)
Winter: hay & grass silage, no concentrates

Composting grass from nature conservation area

Dairy case: “De graasboerderij” – economics

- Low input costs
- High prices outputs
  - Farm shop
  - Sub-stream within organic certification (fully antibiotics free)
- Overall production relatively low
- Economic results comparable / better than average dairy farm
- Robust: not affected by volatility input prices

http://www.graasboerderij.nl/

Arable case: “Bi-Jovira”

diverse cropping plan on 50 ha: potato, onion, carrot, chicory, pumpkin, parsnip, cabbages, grass/clover

Organic: no chemical fertilizer, no chemical pesticides

No till, use of cover crops

Strip cropping and fixed traffic lanes

Strive for a diversity of farming practices – some examples

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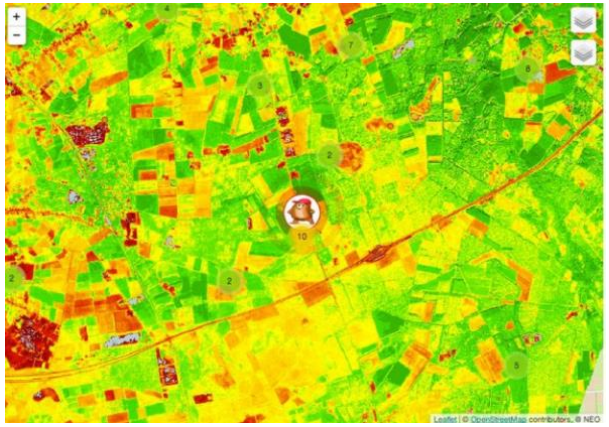
Intercropping

Circular, mixed farm

Agroforestry

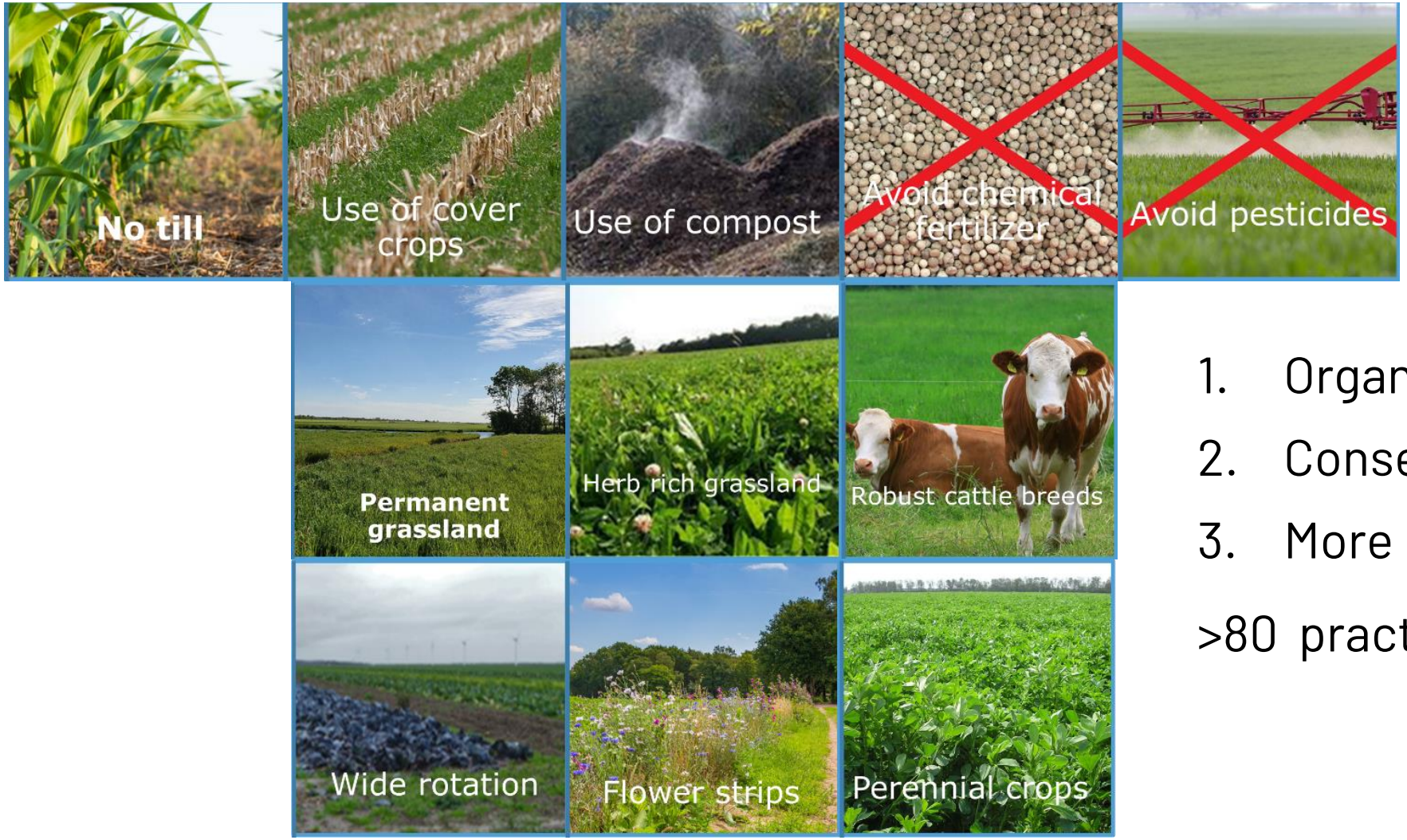
Managed/strip grazing

Precision farming



Silvo pastures

Community of practice: regenerative practices mostly applied



1. Organic ag.
2. Conservation ag.
3. More biodiversity

>80 practices identified

Community of practice:
socio-economic practices / valorisation models

- Short food chain
- Certified organic
- Own processing facility
- Energy production (solar, wind)
- Community supported agriculture (various models)

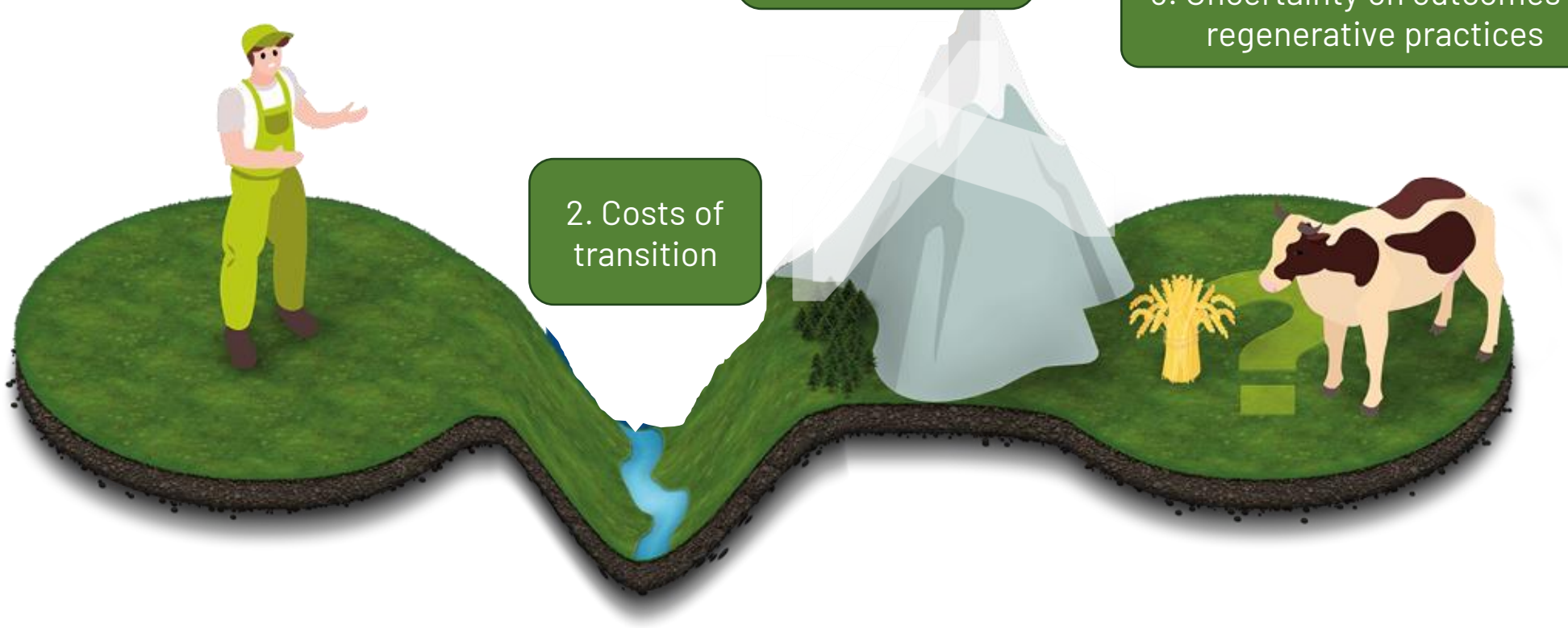
Niche to mainstream: Four barriers to overcome

4. Lack of knowledge on regenerative practices

1. Uncertainty on mainstream revenue model

3. Uncertainty on outcomes of regenerative practices

2. Costs of transition

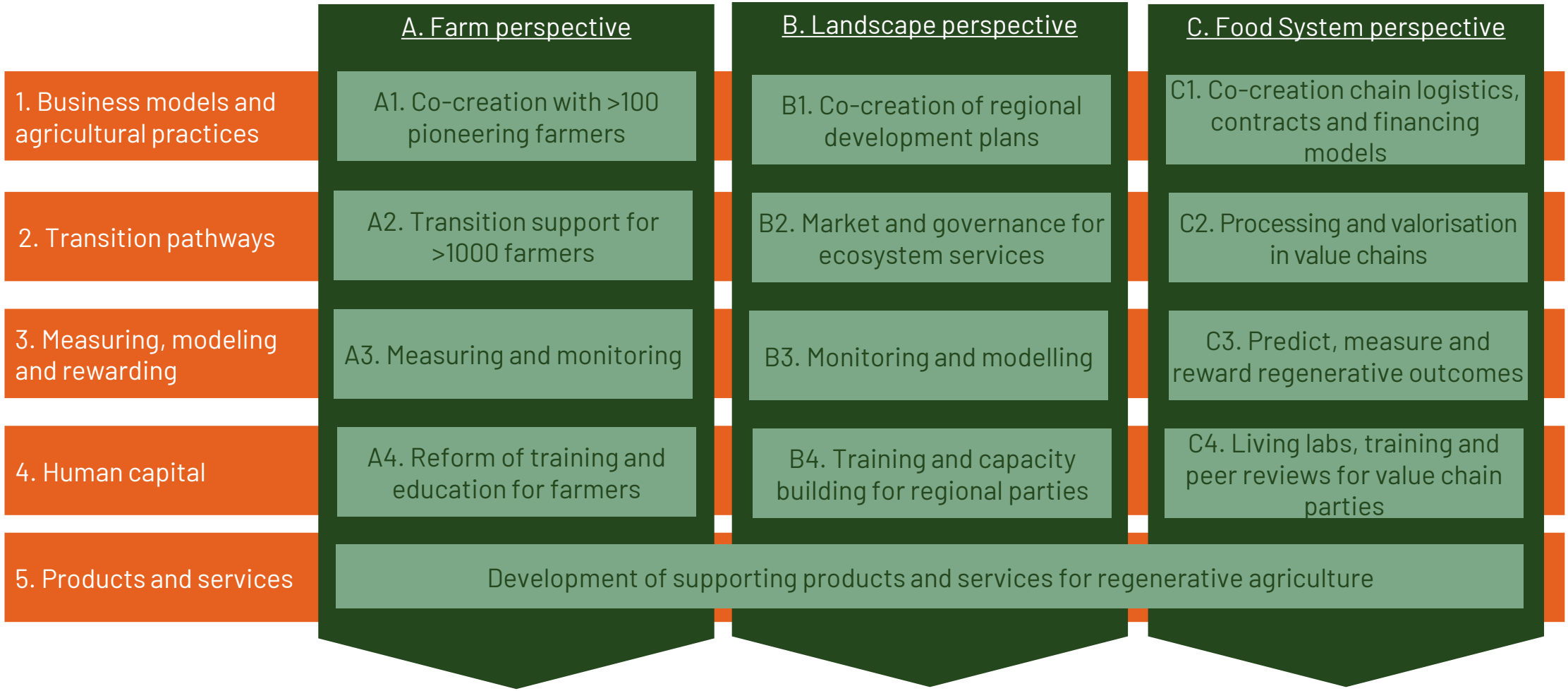


Important elements of the ReGeNL program

- Focus on transition of farmers, farming and the food system
- So, not a research program – science as enabler and support
- Financed by the Dutch Growth fund (129 M€) + partners (ca. 129M€)
- 7 years and also support for farmers and cooperatives / industry

=> Better farming practices – cover of additional costs and € risks

Five lines of action - three perspectives



ReGeNL Deliverables by 2031

Farm perspective

1. In co-creation with **100** pioneering farmers
   ~20 replicable, regenerative and **profitable farmer business models** have been developed
2. **1,000** conventional Dutch farms transitioned towards regenerative agriculture
3. **10,000** (future) farmers and farm advisors are trained in regenerative practices

Landscape perspective

4. 5 **landscape designs for regenerative outcomes** developed and in progress of execution
5. Market and governance mechanisms for valorization of **ecosystem services** set up in 5 focus landscapes

Food system perspective

6. Financial sector and technology suppliers apply new financing mechanisms and at least 30% of all new **financing** directed towards regenerative farms
7. Participating value chain partners in ReGeNL developed valorization models for regenerative production; at least 30% of their relevant **sourcing** volume comes from regenerative agriculture
8. Cost effective **MRV methods and predictive models** for regenerative outcomes are available
9. Products and services for regenerative agriculture generate **growing export value** for NL

ReGeNL: Strong farmer-based consortium and growing

Farmers' cooperatives and networks:

Chain parties and networks of chain parties:

Financial sector:

Suppliers of Knowledge and technology:

Other:

Coordination: Next Food Collective

Submitted by: Ministerie van Landbouw, Natuur en Voedselkwaliteit

Knowledge institutes:

Six guiding principles for the ReGeNL consortium

1. The objective of ReGeNL is to make **regenerative outcomes** with **future fit farmer business models** the new normal.
   - **Not prescribing how** these outcomes should be achieved
   - but based on common thread: **optimizing photosynthesis** throughout the year and **feeding the living soil**, which requires minimizing and ultimately stopping the use of chemical inputs.
2. Strive for a **diversity** of practices, crops, and income models that together can form a regenerative system.
   - Cooperation between **equal partners**; embrace the diversity of approaches within the consortium.
3. Approach that provides **opportunities** for the **majority of Dutch farmers** (with a diversity of intrinsic motivations and starting positions) to develop a future proof business model.
4. **Ownership** for the transition at both farm and landscape levels lies **with farmers** and area representatives.
5. Participating **system players** (value chain partners, financiers, knowledge and technology providers, governments) **support** the objectives and principles of the program and are responsible for developing solutions that enable local transitions at both farm and landscape levels.
6. Innovation and knowledge development occur in practical networks and field labs of farmers, **supported by** independent advisors and other **knowledge workers**.

Current status and plan 2025

- Number of initial meetings in 2024
- Formal approval and budgets in October 2024
- Governance structure set-up and team appointed

- Training of farm coaches & advisors started
- Involving farmers (70 + 40) and selection of regions (5)
- Starting up the monitoring program & data management structure

The Team

- Wouter-Jan Schouten
- Aafke van den Boom
- Paul van Ham
- Ingrid van Huizen
- Howard Koster / Rachel Creamer
- Margriet Goris
- Raymond Jongschaap / Niels Anten
- Anne Bruinsma
- Yvon Reitsma
- Ysbrand Snoei
- Eline van der Mast

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Reshaping food for a better tomorrow

Thank you

More info:

- Mail: peter.grootkoerkamp@wur.nl
- Websites: www.regenl.nl and www.regenerativefarming.nl

For discussion

- Risk of green-washing
- Comply to national and EU financial support regulations
- All knowledge will be open access
- …