



## Education Mission on Regenerative Agriculture

2 - 5 October 2023

groenpact



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## Introduction

In April 2022, the Dutch Agricultural Attaché for Ukraine received a request from Wageningen University and Research (WUR) regarding cooperation with the Ukraine Agricultural Academy of Sciences (UAAS). The academy indicated that it would like to form a partnership with WUR to support the Ukrainian agricultural sector, as part of the intended post-war reconstruction of Ukraine.

This request was put on the agenda of the April 13 2022 meeting of the Groenpact Steering Committee ('Regieteam', with executive representation of the ministry of Agriculture, Nature and Food Quality of the Netherlands (LNV), Dutch green education institutions, and private sector parties). The thinking here was that a possible commitment and contribution from the Netherlands should be approached from a 'broader' educational perspective. It was agreed that further exploratory discussions should be held between the Agricultural Attaché and LNV / Groenpact acceleration program on internationalisation and that an inventory should be made of (1) existing cooperation between green education institutes in the two countries, and (2) interest in future cooperation.

The inventory was organised by LNV in May 2022, with responses from 11 institutes. The inventory included the following questions: *With which governmental and knowledge institutions did / does your institution have contact in Ukraine (last 5 years)? What kind of contact & cooperation did / does this involve? Education, research, innovation? Examples of projects, initiatives? To what extent is your institution interested in continuing existing cooperation / developing new cooperation with educational institutions in Ukraine, in the context of reconstruction? Which thematic / substantive topics & also type of activities (education, research, innovation) is this interest in particular?*

On the Ukrainian side, an inventory of key issues and needs in relation to agricultural education was organised by UCAB. As a result of both inventories, the initiative for further contact by means of an online seminar was taken. Several Ukrainian and Dutch institutes with a (former) involvement in Ukraine presented themselves during an online networking meeting on the 30th of March, and shared preliminary ideas for exchange and collaboration. A meeting with representatives of the Dutch embassy, LNV / Groenpact acceleration program on internationalisation and UCAB on the results and follow-up was held on April 21<sup>st</sup>. It became clear that a study tour of a group of Ukrainian green education representatives and UCAB to the Netherlands would be a logical step.

The study tour took place in the first week of October 2023. In consultation with the Ukrainian partners it was decided that the program would focus on 'regenerative agriculture'. The Dutch team composed a program whereby the most interested and (thematic) relevant institutes could be visited. The program was developed by the Dutch Embassy and representatives of the Groenpact acceleration program for internationalisation, with logistic support from RVO.

This report presents an overview of the program and a short impression of each item on the agenda with key slides from the presentations. It ends with the results of the wrap-up session and ideas for follow-up.





## Program

Session #	Day	Date	Program	
	Sunday	1/10/2023	Arrival	
	Monday	2/10/2023	<ol style="list-style-type: none"> <li>1) Introduction on Groenpact</li> <li>2) Sustainability challenges in the Netherlands</li> <li>3) Dutch Green Deal "Nature Inclusive agriculture in Green Education"</li> </ol>	(By a Manager of Cluster International and Education, SK&I, Min. Agriculture, Nature and Food Quality)
			Visit <a href="#">Farm of the Future</a>	
			Introduction Aeres Group	
			Visit <a href="#">Warmonderhof</a> (Aeres TVET)	
			Tour Aeres Farms	
	Tuesday	3/10/2023	Introduction on <a href="#">UCAB</a> and perspective for cooperation	
			Professorship Nature inclusive Farming at Vocational level	
			Professorship at University of applied Sciences level	
			Presentation of the Ukraine Agriculture and Food security Platform	
			General introduction to WUR	
			Minor Sustainable Agriculture and Consumption	
			Insights from the Global Network of Lighthouse Farms	
			Re-Ge-NI	
	Wednesday	4/10/2023	HAS Green Academy and YuvertaTVET	
			Regenerative Farming Practices	
	Thursday	5/10/2023	Hogeschool van Hall Larenstein	
			Living Labs on Nature Inclusive Farming	
			<a href="#">Wrap up Session</a>	



Summary of the sessions

Monday, 2 October 2023

Session #1 : Introduction by Ministry of Agriculture, Nature and Food Safety



**A unique Dutch Public Private Partnership**




**Goal (since 2016)**

- Renewing and strengthening Dutch green education and practice oriented research, in order to:
  - ✓ create impact regarding societal and economic challenges
  - ✓ deliver sufficient and well-trained graduates for current and future labor market in the green sector (agriculture, food, nature)
  - ✓ facilitate practice-oriented innovations

**Partners**

- Over **90** organizations in 2023 (knowledge institutes, private sector, government, civil society organizations)

**Approach**

- Investments by each partner (in cash & in kind). Joint annual budget: about 15 million euros
- Working towards strong 'Expertise Clusters' (3 levels)
- Acceleration programs on:
  - ✓ labour market
  - ✓ technology and digitalization
  - ✓ knowledge transfer
  - ✓ internationalization

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**Ministry of Agriculture, Nature and Food Quality**

**Working together on sustainable agriculture and nature restoration**

Voettekst  
Datum



- > Long tradition of collaboration between knowledge institutions, businesses and government (Dutch diamond)
- > Dutch farming, horticulture and fisheries are constantly innovating, making our country a global leader in these sectors.
- > The Netherlands is the second largest agricultural **exporter** in the world.
- > However, current production methods are not without cost.....

The Netherlands faces major sustainability challenges:

- > Nature, water and soil quality are under pressure
- > Farmers and fishermen are stuck in a system that has crossed ecological boundaries for too long
- > Climate change poses major challenges. Immediate action is needed to reduce nitrogen deposition.

*All this calls for clear and sometimes difficult choices for the future. Major transitions are needed.*

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## Ministry of Agriculture, Nature and Food Quality

Working together on  
sustainable agriculture  
and nature restoration



To address these challenges, and to make the transition, the Ministry sees as priorities for the Dutch government a.o. (2023):

- > Government takes the lead
- > An integrated, area-based approach
- > Nature is the basis
- > Food system approach
- > Sufficient income
- > Sufficient means to support the transition

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## General introduction to Green Deals...

- Covenants between government and civil society partners to facilitate the transition towards a sustainable economy
- Approach: focus on bottom-up initiatives
- Role of the government varies: e.g. remove obstacles in legislation and regulations, facilitate (access to) networks, support access to capital
- Not legally enforceable, but also not without obligations....
- In general, Green Deals operate without financial resources from government

1



## Green Deal 'Nature inclusive agriculture in green education': key characteristics

### Preparation / application process

- Exploration in 2017, round table and formal application in 2018, kick-off event in January 2019 with Minister Carola Schouten

### Ambition

- Integrate Nature Inclusive Agriculture (NIA) in all relevant courses and Life Long Learning

### Role Ministry of Agriculture, Nature and Food Quality

- Stimulate partners to mobilize 'front-runners'
- Provide subsidy of 150.000 euros to facilitate program management, development of learning materials, a digital Portal, networking etc.
- Provide additional subsidies for specific projects

### Parties

- 24 (government, education institutes (VET up to higher education), private sector, civil society)

### Organization

- Program manager & core team, a working group (representatives of the different groups of parties), 'knowledge ambassadors' in every organization. Support by Netherlands Enterprise Agency RVO



Session #2: visit to Farm of the Future

## Activities at Farm of the Future in Lelystad

We contribute to the agriculture of the future through:

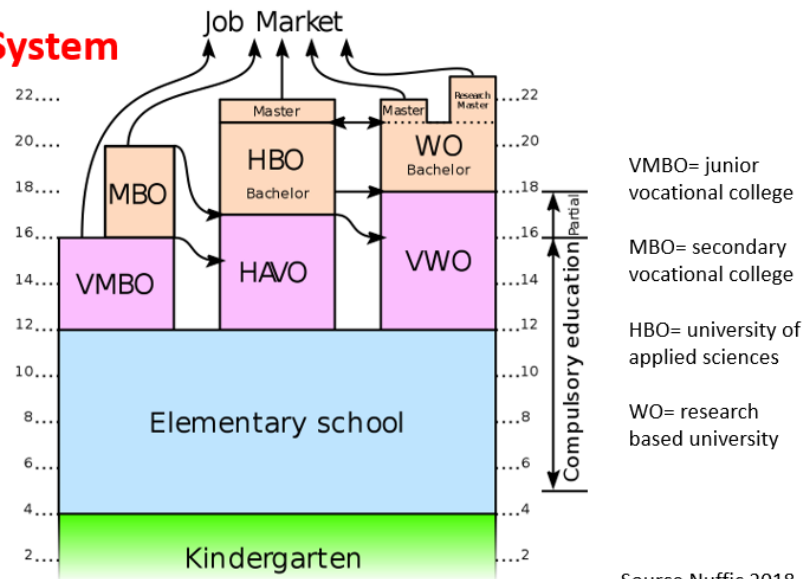
<b>Fieldlab (20 ha)</b>	System demonstration, test site
<b>Innovation programme</b>	Connect and initiate to realise innovation roadmap
<b>Stakeholder platform</b>	Create a wider movement with partners
<b>National network</b>	Farms of the Future in other regions, sectors





Session #3: Introduction to Aeres Dronten

### Dutch Education System



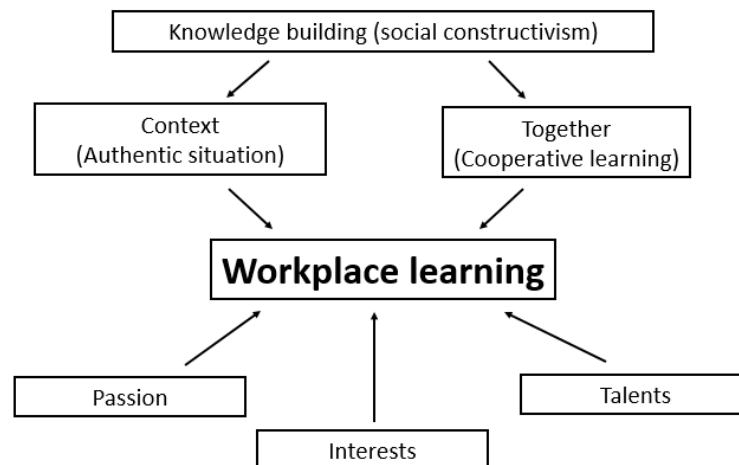
Source Nuffic 2018

January 1, 2019





## Our educational vision



### Session #4: Visit to Warmonderhof

Ruud Hendriks is professor for Circular Agriculture at Warmonderhof, one of Aeres' TVET schools. Warmonderhof specialises in organic farming with a number of different courses for students and professionals.

“As a Circular Agriculture Practor for (TVET) education and soil fertility teacher, I work on knowledge about soil-nurturing agriculture. With this [website](#) I want to contribute to creating an image of cycles based on healthy and vital soil. “Circular agriculture”, it seems like a simple concept and technically it is: “Just use residual flows as raw materials and natural sources in moderation and only in a regenerative way”. This is essentially it. But how can this be socially shaped, i.e. how will agriculture and society in the Netherlands do this in about ten years in a way that ensures farming remains



possible? That is a mega transition. As great as the agricultural change that Mansholt has initiated, I see the change we are now working on as great. We have left the era of change behind us, we now face a change of era. Towards an era with far fewer inputs from outside and much more regional agriculture in which care for soil and biodiversity, among other things, is leading.”

Source: [landbouwkringlopen – Kringloop, een woord in 2020, realiteit in 2030?](#)





Tuesday, 3 October 2023

The morning program of Tuesday 3<sup>rd</sup> at Wageningen University and Research (WUR) was dedicated to a round table dialogue. Co-hosted by Reinoud Nuijten (agric. Counsellor) and Vanya Simeonova (WUR) a number of initiatives were presented and discussed. In this chapter, the highlights of each presentation are summarised. The conclusions and recommendations that follow are described in the [Follow up section](#).

Session #5: Presentation by Alex Lissitsa, Ukrainian Agribusiness Club (UCAB)



### Current challenges for Ukrainian agribusiness I

**Security Concerns:** The ongoing war posed security risks for farmers and agricultural workers. Agricultural infrastructure such as farm buildings, equipment, and storage facilities were also vulnerable to damage or destruction.

**Displacement of Farmers:** The conflict led to the displacement of many people, including farmers. This disrupted agricultural activities, as people had to leave their homes and farms, leading to labor shortages and decreased agricultural productivity.

**Access to Land:** In some war-affected areas, there were issues related to access to agricultural land. Displaced people and others faced challenges in reclaiming or utilizing their land, leading to uncertainty and disputes.

**Infrastructure Damage:** Transportation and logistics infrastructure, such as roads and bridges, suffered damage. This hindered the movement of agricultural products to markets, both domestically and for export.



## Current challenges for Ukrainian agribusiness II

**Economic Instability:** The conflict contributed to economic instability in Ukraine, including currency devaluation and inflation. This affected the cost of agricultural inputs and financing for farmers.

**Trade Disruptions:** International trade in Ukrainian agricultural products was disrupted due to the conflict. Export routes were affected, and trade restrictions were imposed by some countries like Poland, impacting Ukraine's export-dependent agriculture sector.

**Investment and Financing:** Ongoing war deters domestic and foreign investment in the agriculture sector. Access to financing for agricultural projects became more difficult due to increased risk perception.

**Environmental Impact:** war-related activities, such as the use of landmines and other explosives, has long-term environmental consequences, making some areas unsuitable for agriculture.





## The key questions for farmers in Ukraine are

1. How to survive now?
2. What to do in the next future?
3. Are we going to the EU?
4. Are we expected in the EU?



## Ukraine on the path to the EU

- Ukraine signed an **Association Agreement** with the EU in 2014, including the Deep and Comprehensive Free Trade Agreement (DCFTA)
- 23 June 2022 The European Council granted Ukraine the **status of a candidate for accession to the European Union**.
- The new **Ukraine Facility** (declared June 2023) will support Ukraine's efforts to sustain macro-financial stability, promote recovery as well as modernize the country whilst implementing key reforms on its EU accession track. It will support the transition towards a green, digital and inclusive economy that is progressively aligned with EU rules and standards.
- Negotiations about **membership** are expected to begin end of 2023, beginning of 2024



## Why Regenerative Agriculture Matters I

### Environmental Benefits

**Soil Health:** Regenerative practices improve soil structure, organic matter, and nutrient content, making it more resilient and productive.

**Carbon Sequestration:** Healthy soils capture and store carbon dioxide, mitigating climate change. In Ukraine has started to function the carbon market.

**Biodiversity:** Promotes diverse ecosystems, supporting pollinators and natural pest control.

## Why Regenerative Agriculture Matters II

### Economic Benefits

**Increased Yield Stability:** Regenerative techniques enhance crop resilience to weather fluctuations, reducing production risks.

**Lower Input Costs:** Fewer synthetic fertilizers and pesticides are needed, leading to cost savings. All big input suppliers expect 50% market share of bioproducts in 2030

**Market Demand:** Consumers and markets increasingly favor sustainably grown products, offering premium prices.



## Why Regenerative Agriculture Matters III

### Relevance to EU Agriculture Policies

- The European Union places a strong emphasis on sustainable agriculture:
  - **Common Agricultural Policy:** Emphasizes environmental and climate action in farming practices.
  - **Green Deal:** Aims to make European agriculture more sustainable and circular.

**Regenerative agriculture** aligns with both global environmental goals and EU agricultural policies, **making it a crucial step for Ukraine** on its path to the European Union. Adopting these practices not only ensures environmental sustainability but also enhances economic viability for Ukrainian farmers for “after-war time”.

## The Need for Knowledge I

### Current Agricultural Practices in Ukraine

Ukraine boasts vast agricultural potential with fertile land, but its practices are often traditional (tillage, disking, deep ripping etc) and resource-intensive.

Ukrainian agriculture relies heavily on chemical inputs (mostly generic), monoculture (corn, sunflowers, wheat, rapeseed or soybean depends on the region), and unsustainable land management.

Soil degradation, water pollution (especially South Ukraine after destroyed dam in Kakhovka), and a high carbon footprint are pressing issues.





## The Need for Knowledge II

**Knowledge Gap:** There's a deficiency in understanding EU green requirements for agriculture generally including regenerative practices, limiting their adoption.

**Game Changer - Land Market.** Ukraine allows starting from 2024 purchasing the farmland up to 10k for legal entities.

**Environmental Impact:** Countryside communities but also young Ukrainians will not accept farming practices which contribute to soil erosion, loss of biodiversity, and greenhouse gas emissions.

**Economic Vulnerability:** Heavy dependence on external inputs (plant protection, phosphorus and potassium fertilizers etc), makes Ukrainian agriculture sensitive to global market fluctuations.

## The Need for Knowledge III

### Importance of Transitioning

Transitioning to sustainable agriculture or regenerative agriculture is critical for Ukraine due to the following reasons:

- **EU market is crucial for Ukrainian agricultural products.** More than 60% of agriexport from Ukraine goes to the EU.
- **Environmental Stewardship:** It addresses soil degradation, conserves water resources, and reduces pollution. Ca. 2 mln ha of ag. land are in war affected areas (contaminated or mined)
- **Resilience:** Regenerative practices enhance the resilience of farms against climate change impacts. Specially in South and East Ukraine the climate change (but also war) consequences are crucial.
- **Economic Viability:** It offers a sustainable, cost-effective alternative that can boost long-term profitability.



## Partnership

### Ukraine-Dutch Collaboration for Regenerative Agriculture

Ukraine and the Dutch government and companies may come together with shared goals:

- **Knowledge Transfer:** The Dutch will share their expertise, best practices, and advanced agricultural technologies.
- **Capacity Building:** Building the capacity of Ukrainian farmers, researchers, and agricultural education.
- **Sustainable Growth:** Fostering sustainable and environmentally friendly agricultural practices in Ukraine.

#### Existing Cooperation Projects

- Educational Project Agrokebety with Ukrainian Agribusiness Club
- Incredible villages of Ukraine competition with Agroportal.ua

#### Mutual Benefits

- Ukraine gains access to cutting-edge sustainable agricultural knowledge and practices.
- Dutch companies can explore new markets and investment opportunities in agribusiness of Ukraine.

At the end of his inspirational presentation, Alex proposes the formation of a 'Dutch-Ukrainian Regenerative Agriculture Center', with the following mission:

## Center's Mission

### Mission of the Dutch-Ukrainian Regenerative Agriculture Center

The center is committed to advancing regenerative agriculture practices in Ukraine.

Our mission is to bridge the knowledge gap and empower Ukrainian government, ag. education institutions, associations and farmers with sustainable, environmentally friendly, and economically viable agricultural techniques.

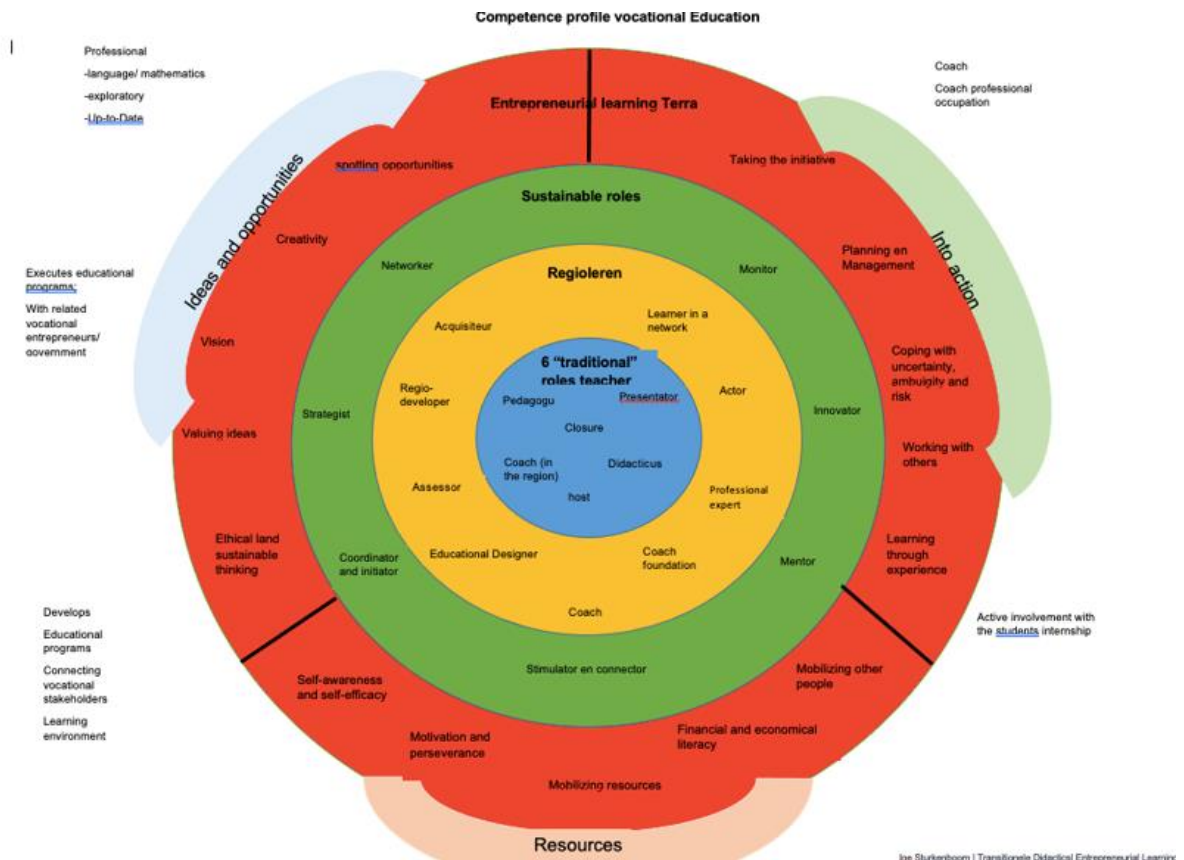
This proposal was well received and will be further elaborated during the [follow up](#) session



Session #6: Education on Nature inclusive agriculture in TVET

# Translation TVET- Education

- Green Deal
- Groeifonds
- Practical research
- Curriculum/ qualification-file
- KIEM Pilots
- Learning material ([www.blauwgroenlespakket.nl](http://www.blauwgroenlespakket.nl))
- Student- projects
- Internationalization
- Integral with colleague teachers
- Lectorate/ practorate





Session #7: Regenerative agriculture in higher professional education

Aafke Schaap works as a teacher/researcher for the professorship Nature Inclusive Farming at HAS Green Academy

### What is nature inclusive agriculture / farming?

**Use functional agrobiodiversity**  
Care for and utilization of ecosystem services on plot/farm

**Care for nature:**  
Agricultural landscape and nature management  
Care for specific species and landscape diversity

**Reduce environmental impact:**  
Efficient use of resources  
Lower emissions

**HAS green academy**

Source: van Doorn, A., Melman, D., Westerink J., Polman, N., Vogelzang, T., & Korevaar, H. (2016). Foodfor-thought : natuurinclusieve landbouw. <https://doi.org/10.18174/401503>



## Educational activities

- **Minor Farming with Nature** (third year)
  - Exchange students
  - Fieldwork NL / EU
- **Graduation project** (fourth year)
  - Nature inclusive farming and value strategies
- **Professional courses (professional)**
  - Coaching farmers
  - Theoretical courses



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## More information:

- Teach the teacher programme
  - <https://www.has.nl/en/business-courses/teach-the-teacher-programme/>
- Business courses
  - <https://www.has.nl/en/business-courses/>
- Study at HAS
  - <https://www.has.nl/en/bachelors-and-more/>
- Minor Farming with Nature
  - <https://www.has.nl/en/bachelors-and-more/exchange-farming-with-nature/>



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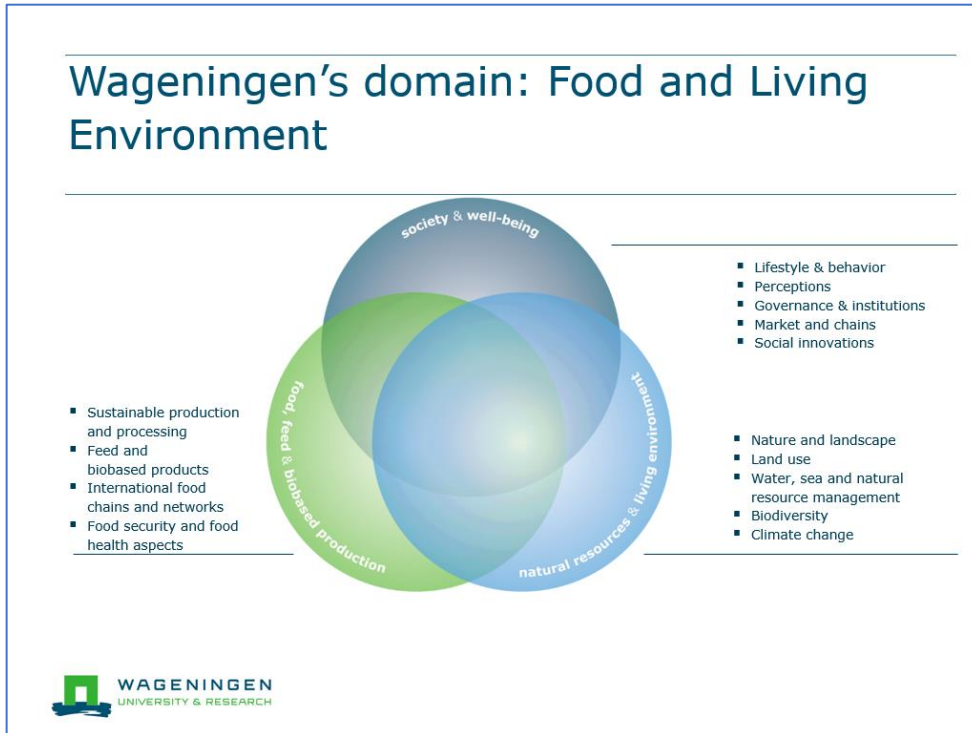


Session #8: Ukraine Agriculture and Food security Platform



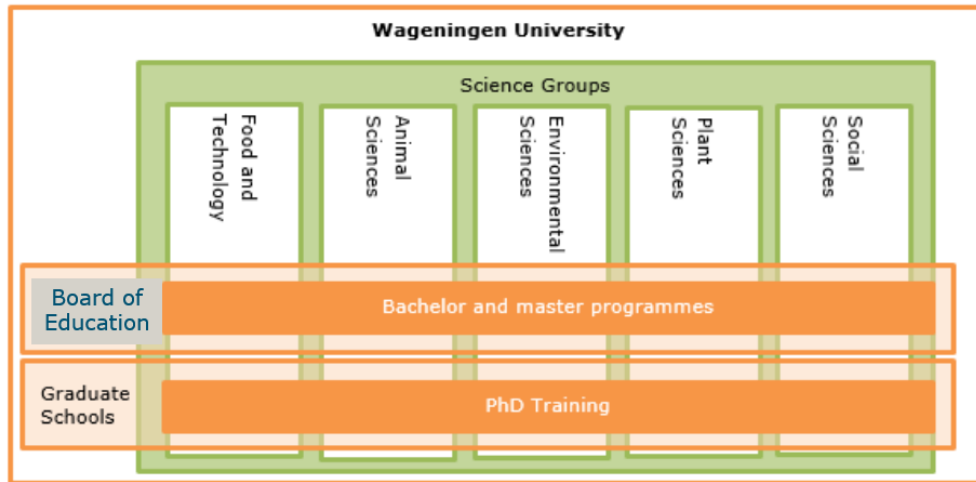
Session #9: Wageningen University and Research

Tjallie Botden gives a brief overview of the educational offer and organisation of WUR





## Wageningen education organisation matrix



## University: our objectives

- Development of coherent education system with campus-based education (full time), online education (distance learning, part time), and other online education elements ("Wageningen Inside", MOOCs)
- Focus on life-long learning
- Alliances with national and international universities





Session #10 : Minor Sustainable Agriculture and Consumption

## FTE-50806 Conservation Agriculture Learning outcomes

After successful completion of this course students are expected to be able to:

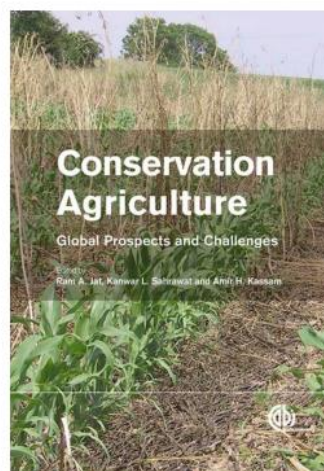
- understand the key principles of conservation agriculture;
- understand the relationship between CA principles and soil properties and ecosystem services;
- apply CA principles in management strategies guided by different goals;
- evaluate the feasibility of the CA concept under given agro-ecological, climatic and socio-economic conditions.



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## Course assessment & contents

- Written exam (50%)
- Group work Design case CA-based farm (50%)
  - Computer practicals
    - Soil water
    - Trade-offs
  - Excursion
  - Lectures







## Lectures topics





## Farming Systems Ecology: our mission

To equip all actors in the food system...  
with the keys to unlock, redesign and transition farming systems...  
by experiencing, analysing and learning from outstanding examples...  
of farms and foodscapes around the world.



### STARTS

NOVEMBER 2023  
(Then twice a year - March/September)

### EXPERIENCE

Online Content  
Lighthouse Farm Lab  
Group Discussions

### DURATION

~1-year, self-paced with  
one 5-day Lighthouse  
Farm Lab  
~10 hours / month

### OPT IN

Personalised coaching  
Additional Lighthouse Farm Labs



<https://www.lighthousefarmnetwork.com/lighthouse-farm-academy>



[info.wageningenacademy@wur.nl](mailto:info.wageningenacademy@wur.nl)



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Session#12: Re-Ge-NL



## Re-Ge-NL

Flywheel for the transition to a regenerative, remunerative and socially supported agricultural sector

“Regenerative agriculture is an approach to farming that uses soil conservation as the entry point to regenerate and contribute to multiple provisioning, regulating and supporting 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)

What

### Need for a new paradigm



Ambition

#### Today's dominant logic

Volume growth,  
maximum efficiency;  
Less negative impacts

#### Required for systemic change

Value growth,  
optimum efficiency;  
Net positive impact



Scope

Mono-populations and  
commodity supply chains

Integrated systems:  
fields, farms, local landscapes,  
value chains, consumers



Breadth of  
solutions

Dogmatic: prescribe  
'one size fits all' agricultural  
practices

Drive to target outcomes with  
diversity of agricultural practices



## Six guiding principles of our transition approach

How

1. Ownership for transition at farm and landscape level lies with Farmers and local community representatives
2. Value chain partners, financial institutions, governments, science, education and consumer representatives support the objectives and guiding principles of the program and take responsibility for developing solutions that enable transitions at farm and landscape level
3. Set of regenerative outcomes offers a framework for setting context-specific quantified targets at farm and landscape level in a bottom-up process
4. Strive for a diversity of practices that combined will deliver the regenerative outcomes at all system levels
5. 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
6. Innovation and knowledge development in networks and fieldlabs of farmers, supported by independent advisors and other 'knowledge workers'

## Five lines of action and three perspectives

	A. Farm perspective	B. Landscape perspective	C. Chain perspective
<u>1. Business models and practices</u>	A1. Co-creation with >100 pioneering farmers	B1. Co-creation of regional development plans	C1. Co-creation of contract and financing models
<u>2. Transition pathways</u>	A2. Transition support for >1.000 farmers	B2. Market & governance for ecosystem services	C2. Processing, value creation and consumer engagement
<u>3. Measuring and modelling</u>	A3. Measuring and monitoring	B3. Monitoring and modelling	C3. Integration in the (international) value chain
<u>4. Human capital</u>	A4. Reform of training and education for farmers	B4. Training and capacity building for area parties	C4. Training and peer reviews for value chain parties
<u>5. Products and services</u>	Development of supporting products and services for regenerative farming		



Wednesday, 4 October 2023

Session#13: Introduction to HAS Green Academy and Yuverta TVET

## RESEARCH GROUPS

<b>Healthy Farming</b>	<b>Business model for Regeneratieve Agriculture</b>	<b>Precision Livestock Farming</b>
<b>Future Food Systems</b>	<b>Plant-soil Health</b>	<b>Food &amp; Health</b>
<b>Design Methods in Food</b>	<b>Food Production in a Circular Economy</b>	<b>Protein Transition in Food</b>
<b>Green Health</b>	<b>Climate-robust Landscapes</b>	<b>Innovative Bio-monitoring</b>

**HAS green academy**

## HAS INTERNATIONAL PROJECTS

*HAS International Projects (HIP) is the project organization of HAS University of Applied Sciences, that acquires and implements international projects. HIP projects focus on strategic cooperation between green education and private sector, in the field of agro-food and living environment in new markets in Africa, Asia and Latin America.*





**Graduating students investigate avocado value chain in Kenya**  
31-03-2023

HAS green academy is working until May 2024 on the FOR2LAB project, food loss/waste and food quality in the Kenyan avocado value chain. In a series of graduation assignments, students, lecturers and education and industry partners will take a close look at avocado cultivation in central and western Kenya.



**Giving substrate training to growers in Benin**  
31-03-2023

HAS green academy is structurally involved in international projects centred around knowledge transfer, supply chain thinking and educational innovation. Together with our partners we regularly explore new countries and cultures. We're currently working with Holland Greentech and UCCM Calavi on a Nuffic-project in French speaking Benin, West Africa.



**Improving practical education in Indonesia**  
31-03-2023

HAS green academy is structurally involved in international projects centred around knowledge transfer, supply chain thinking and educational innovation. We are currently participating in a two-year Nuffic project aimed at supporting and improving practical education in Indonesia. To do this, we are working together with both Indonesian and Dutch partners including Zora college, HollandDoor Coöperatie, and Van Hall Larenstein University of Applied Sciences.

<https://www.youtube.com/watch?v=nIXjrPxxT68>

**HAS green academy**

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## Education in The Netherlands-Yuverta

- 1. Close cooperation between school and companies
- 2. Companies provide practical internships & experts provide guest lessons.

### Advantages:

- 1. Specialised knowledge in classrooms and practical education settings.
- 2. Developments in sector easily incorporated in education
- 3. Education adapts to needs of sector – mutual advantage

Yuverta

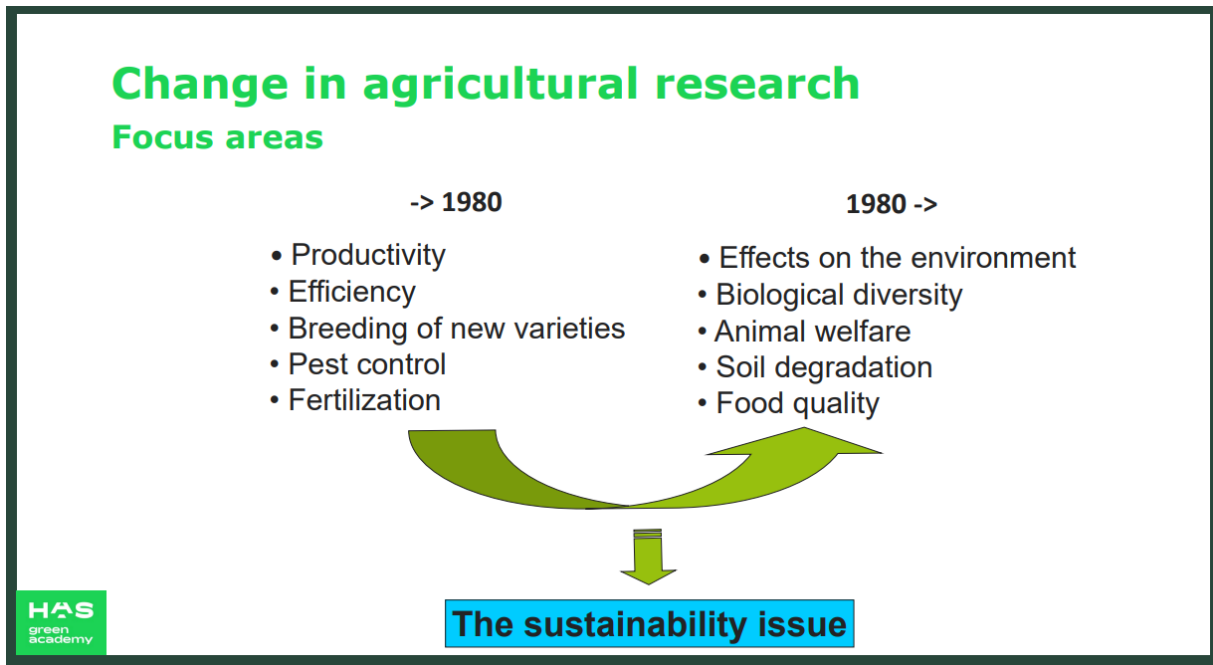
## Education within Yuverta Life Long Learning

- 1. Flexibility in VET
- 2. From group to individual education
- 3. Blended learning\* (\*next sheet)
- 4. European Quality Framework (EQF)
- 5. Outcome based
- 6. Modulair and portfolio based





Session#14: Regenerative Farming Practices





## Soil Quality Management: Key strategies for agricultural land

- Enhance organic matter
- Avoid excessive tillage
- Manage pests and nutrients efficiently
- Prevent soil compaction
- Keep the ground covered
- Diversify cropping systems



## “Take home message”

### **Innovation meets tradition**

Have eye for soil quality in the **short and long** term

Focus on food production **and** other soil ecosystem services

The soil is as **a living ecosystem** rather than a lifeless substrate

**Manage** this ecosystem instead of controlling it

Let the soil do the **work** as much as possible instead of cultivating the soil

**Return** to the soil what is taken









Thursday, 5 October 2023


Session#15 : introduction to Hogeschool van Hall Larenstein




### Driving green transition




Futureproof agriculture  
and sustainable food chain



A futureproof  
living environment



Sustainable water  
management




Climate adaptation  
and mitigation

**Focal points**


- Our strategic choices positively impact green transition
- We develop transition makers
- We stand strong because we are one VHL
- We are nationally and internationally connected

### Research Lines




**Animals**

- Smart Animal Welfare Management
- Sustainable Equestrianism




**Climate & Environment**

- Sustainable Soil Management
- Coastal and Marine Systems
- Design Future Green Cities
- Integrated Landscapes
- Communication, participation and social ecological learning



**Water & Nature**


- Grasslands birds
- Sustainable Water
- Bee Health
- Water and the environment act
- Nature based river Management
- Sustainable forestry management

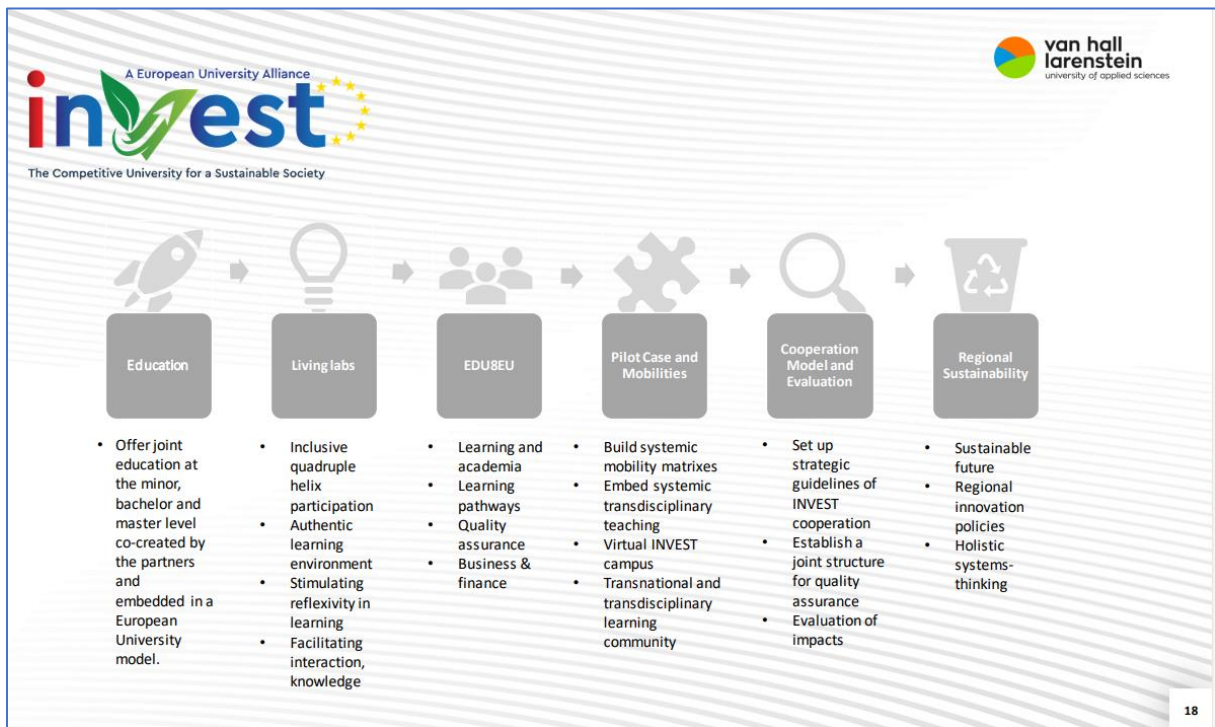


**Food & Agri**

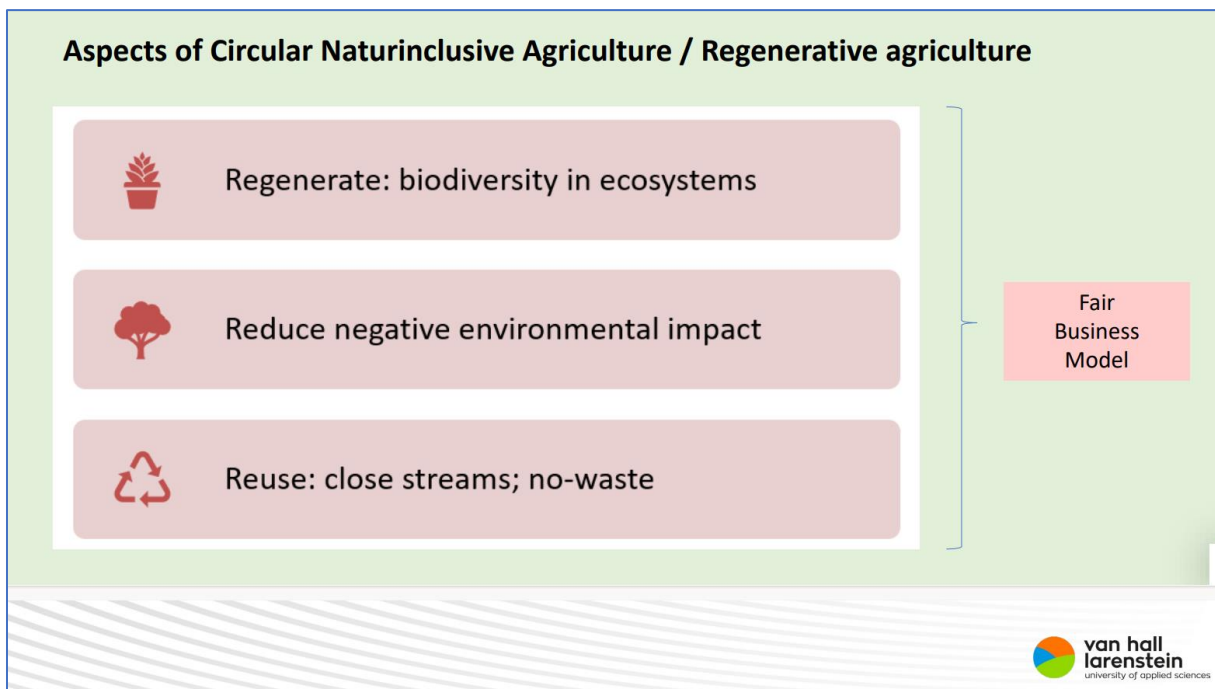
- Sustainable Dairy Farming
- Smart Dairy Value Chain
- Healthy Food & Nutrition
- Dairy Process Technology
- Circular Agriculture
- Agroforestry

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Session#16: Living Labs on Nature inclusive circular agriculture





## The role of animals in a Circular agrofood system

In 2050, the global population will have risen to 9.5 billion people. In a circular food system we can use the current available agricultural land to provide the growing world population with food, without causing any extra burden to the earth. An essential part of this system is in establishing smart connections between plant-based and animal products, in order to create an integral agrofood system.

[www.wur.eu/circularfood](http://www.wur.eu/circularfood)

### LAND

Manure from the animals contributes to a fertile healthy soil and **improves crop yields.**

### CROPS

Only 30% of the crops are suitable for human consumption. We can use the other parts and **residual flows** from agriculture and the food industry to produce **animal feed.**



### CATTLE

Cattle and sheep can consume grass and herbs in pastures that are unsuitable for growing food, such as the peat **grasslands** in the Netherlands.

### MANURE

Manure is also a valuable source of organic material that **replenishes the soil** and completes the circular agrofood system.



## Learning In Practice, For Practice, With Practice

- learners are students, lecturers/researchers and other professionals
- by research and workshops

E.g.,: How can young entrepreneurs apply ecological principles to their dairy farm?

- Farm Walk Biodiversity day at de Marke, students VHL+Zone.College
- **How to integrate Nature Inclusive Farming principles by HBFO farmer**





**Overview Eco activities:** <https://www.rvo.nl/onderwerpen/eco-regeling/eco-activiteiten>



1. Grass/clover	12. Winter catch crops / 'green manure crop'
2. Herb-rich grassland	13. Underseeding catch crop
3. Long-term grassland	14. Biological control
4. Permanent Crop	15. Outdoor grazing > 6 h / day
5. Wet cultivation	16. Extended outdoor grazing > 16 h / day
6. Resting - intermediate crop	17. Buffer strip with herbs - arable farming
7. Nitrogen-fixing crop/protein crop	18. Grassland/buffer strip with herbs
8. Strip cultivation	19. Green fallow
9. Fiber crops	20. Hedge and bush
10. Harvesting root crops (<1 Sept)	21. Other woody element
11. Harvesting root crops (<1 Nov)	22. Organic farm (SKAL)

**Goals Dutch Governmental Program Rural Areas (NPLG)**



A. Nature	B. Water	C. Climate
A1. 30% Nature restoration in 2030 of Natura 2000 areas protected under the EU-Flora and Fauna directive	B1. Groundwater N concentration below standard (50 mg nitrate per liter in upper groundwater)	C1. greenhouse gas emission reduction target for peat meadows (6 provinces)
A2. Reduce nitrogen depositions; 74% of sensitive areas in 2030 are under max allowed deposition level	B2. Groundwater P-concentration below standard	
A3. Reduce nitrogen emissions; 42% in Gelderland	B3. Concentration crop protection agents in ground- and surface water under the standard	C2. greenhouse gas emission reduction targets for arable farming and animal husbandry farms
A4. Plant new forests – natural forest and stimulate agroforestry		
A5. Restore hydrological conditions Natura2000 areas	B4. Ground water bodies meet quantitative standards	C3. national carbon sequestration targets in trees/forests/nature
A6. Agro-ecological areas (Green-Blue) in agricultural areas; 10% in 2050	B5. Reduce risk on damage through extreme weather conditions	



### Wrap up session

After the last presentation by Hogeschool van Hall Larenstein, the mission was concluded with a wrap up session. During this session, participants gave their feedback on the program and advised on short- en midterm follow up activities.

Topics that were perceived as inspirational were amongst others: the level of networking and communication of Dutch universities, governmental agencies and farmers/business, the Groenpact philosophy and strategy, students' answers about the importance of implementing regenerative agriculture for the nature, teachers and the visit to the Farm of the Future. Topics that were missed during the program were amongst others: more real agrarian practice of green regenerative technologies, distance learning opportunities, information on bio stimulants, more meetings with farmers associations and students, sight-seeing.

The main ideas regarding *short-term needs* with respect to regenerative agriculture were amongst others: on-line lectures by Dutch teachers and scientists, examples of curricula of educational programmes, books/syllabi for teachers and students, exchange programmes for students. The main ideas with respect to *possible next steps* were amongst others: make arrangements on guest-lectureships, on-line exchange of lecturers and students, cooperation on Erasmus-project on biological farming, organisation of joint scientific conferences and research, organise cooperation on extension work, curriculum review/development (integration of regenerative agriculture), sharing best practices in agriculture, common training programmes for lecturers, common social action projects for citizens, establishment of double degree programmes.

The partners furthermore concluded that the mission was very constructive and gave good insights in available expertise, from different perspectives on Regenerative Agriculture. The hospitality and openness of the Dutch institutes was very much appreciated. After the online meetings in March and April 2023, this visit has really strengthened and deepened the relationships. There were good opportunities to exchange viewpoints and ideas, establish contacts, and explore ideas for future collaboration, work on establishment of a special centre (Duran!).

### Follow up

The partners agreed that further cooperation in the field of education in relation to Regenerative Agriculture is for mutual benefit. Both countries need to prepare and educate for a transition towards a more sustainable, nature inclusive and regenerative agriculture. By joining forces, these transitions can be accelerated.

The results of the wrap-up session regarding short-term needs and possible next steps, and the initiatives and suggestions that came out during the Round Table meeting organised on Tuesday 2nd at WUR in Wageningen, led to a number of ideas for follow up activities (see results wrap-up session).

Future cooperation could take place under the Dutch-Ukrainian Regenerative Agriculture Centre (to be established), as presented by Mr Alex Lissitsa, President of UCAB. The centre could serve as an umbrella for multiple activities and initiatives, as defined during the wrap-up session and Round Table.

The main objectives of this centre could be:

- Knowledge transfer: share expertise, best practices, advanced technologies.



- Capacity building of Ukrainian farmers, researchers, agricultural education.
- Teacher training, study tours
- Sustainable Growth: fostering sustainable and environmentally friendly agricultural practices in Ukraine.

To reach these objectives, use can be made of existing cooperation projects, eg. Agrokebety with UCAB, “Incredible villages of Ukraine” competition, and the Agroportal.ua. The stakeholders in this collaboration agree to explore facilities to support this centre and its activities in the near future.

In December 2023 - January 2024 LNV / Groenpact acceleration programme on internationalisation, UCAB and RVO will discuss the desired, more collective follow-up of the mission and next steps. Meanwhile, all institutions are kindly invited to take any desired action themselves with respect to cooperation!

If you have any suggestions or recommendations in this regard, please do not hesitate to contact us and stay involved.





Annex I:  
Participants

*1a) Delegation*

Poltava SAU  
NUBIP of Ukraine, Kyiv  
Tavria SAU  
Kherson SAEU  
Chernigiv Politehnica University  
Sumy NAU  
Mykolayiv NAU  
Podilskiy NAU  
Sumy NAU  
UCAB, Agrokebety

Agricultural Counsellor / Landbouwraad for Ukraine, Ministry of  
LNV Senior Policy Advisor SK&I / Manager Groenpact Acceleration  
Programme on internationalisation, Ministry of LNV Programme  
manager Zone College / Secretary Groenpact Acceleration  
programme on internationalisation  
Mission Support Manager RVO  
Mission Support Officer RVO