MSc Agroecology
Becoming an agroecologist through action education

GL 2024-08-11

Let’s EAT webinar
UVM Institute for Agroecology
November 19, 2024

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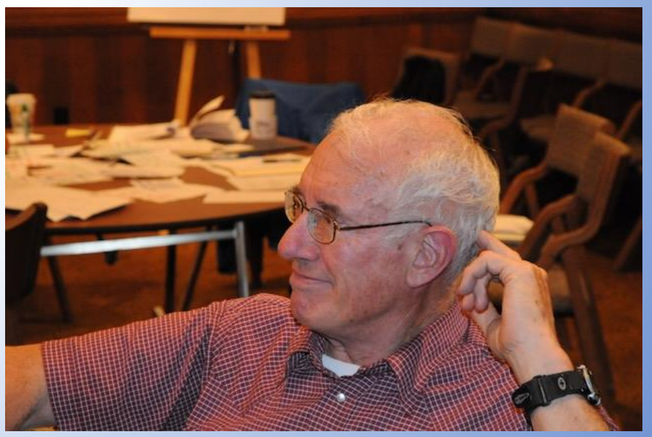
Norwegian University of Life Sciences (NMBU)

The world is calling: 25 years of action education in agroecology

Double degree collaboration with ISARA-Lyon since 2008

Not student centred

Not theory (teacher) centred



But
World centred!

Towards sustainable farming and food systems

MSc Agroecology at NMBU 2000 –

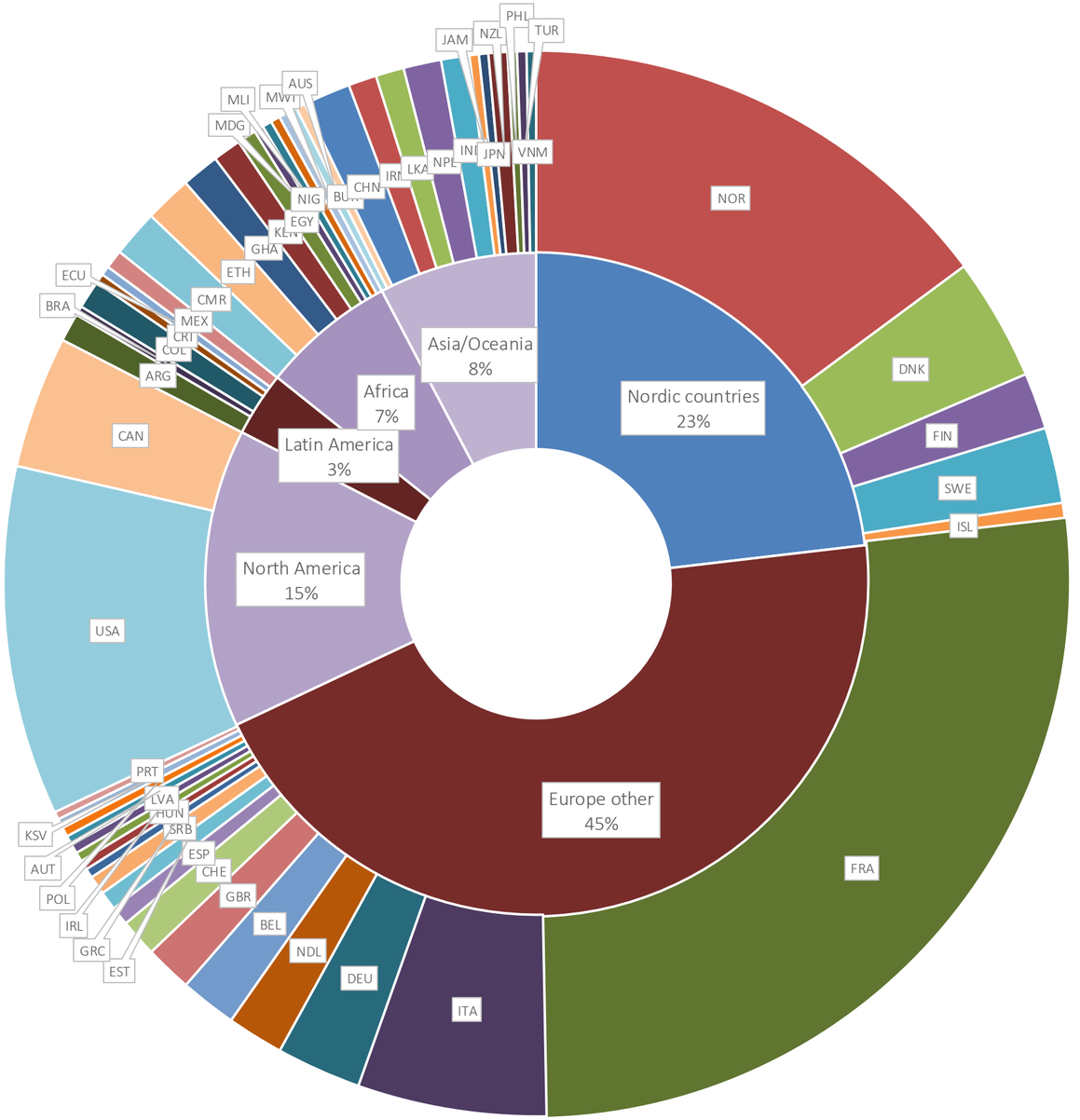
Agroecology: A holistic and action-oriented approach towards sustainable farming and food systems

Purpose:

To equip students with the necessary sustainability competences (core agroecology competences), as well the aim that the students should end up as individuals who can think for themselves and take responsibility for their actions

International program: So far students from more than 50 countries have participated

Broad study backgrounds: Agronomy, social sciences, environmental sciences, human sciences, economics



MSc agroecology at NMBU 2000 – present

Structure of the program

Semester 1

Agroecology: Action learning in farming and food systems

Whole semester – Aug. 10 – Dec 10 (30 ECTS)

Semester 2

Agroecology: Action oriented research (10 ECTS)

Internship Agroecology (10 ECTS)

10 credits elective

Semester 3

Thesis 60 ECTS

or

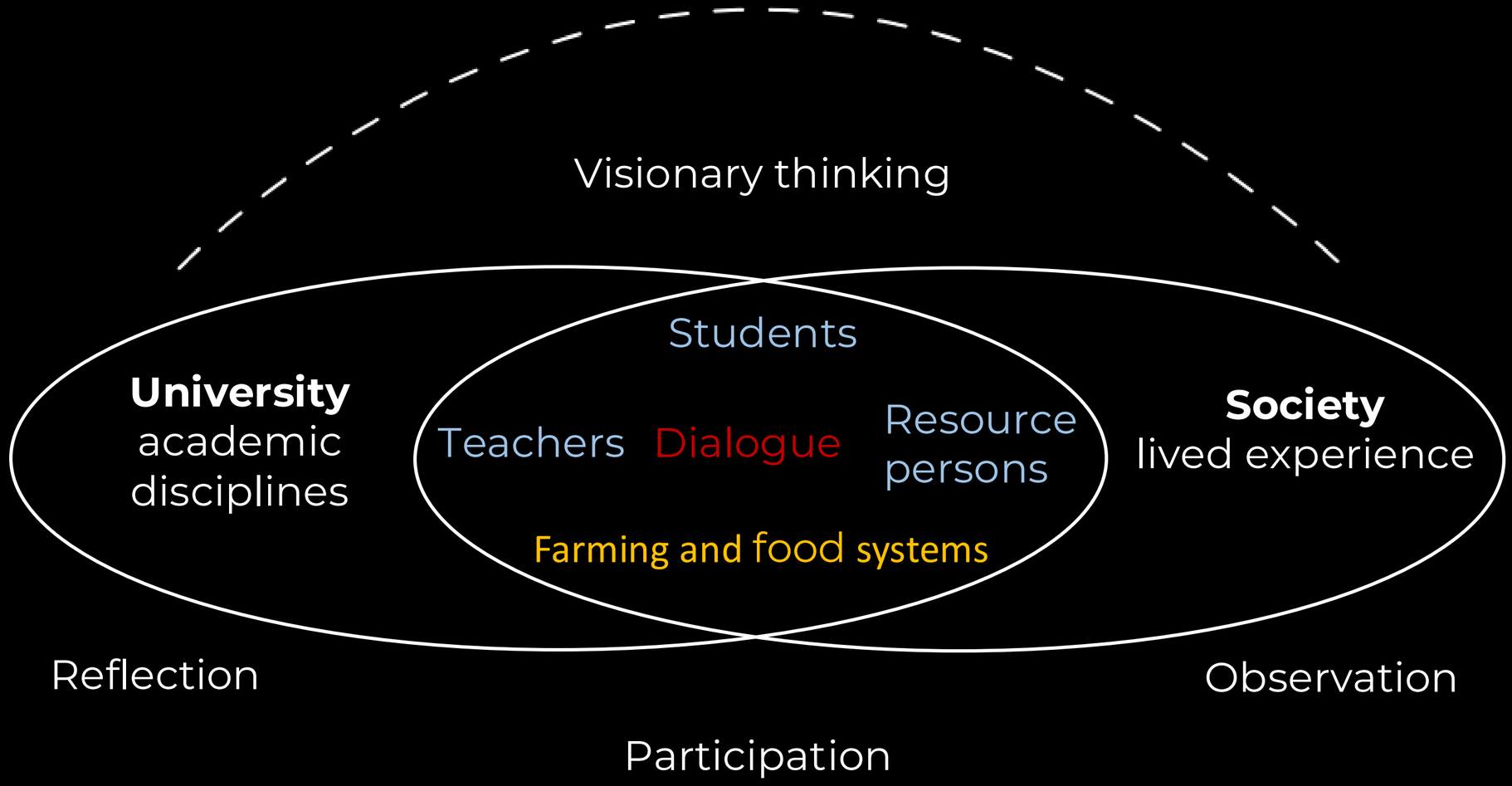
Elective courses

Double degree students at ISARA/ Lyon

Semester 4

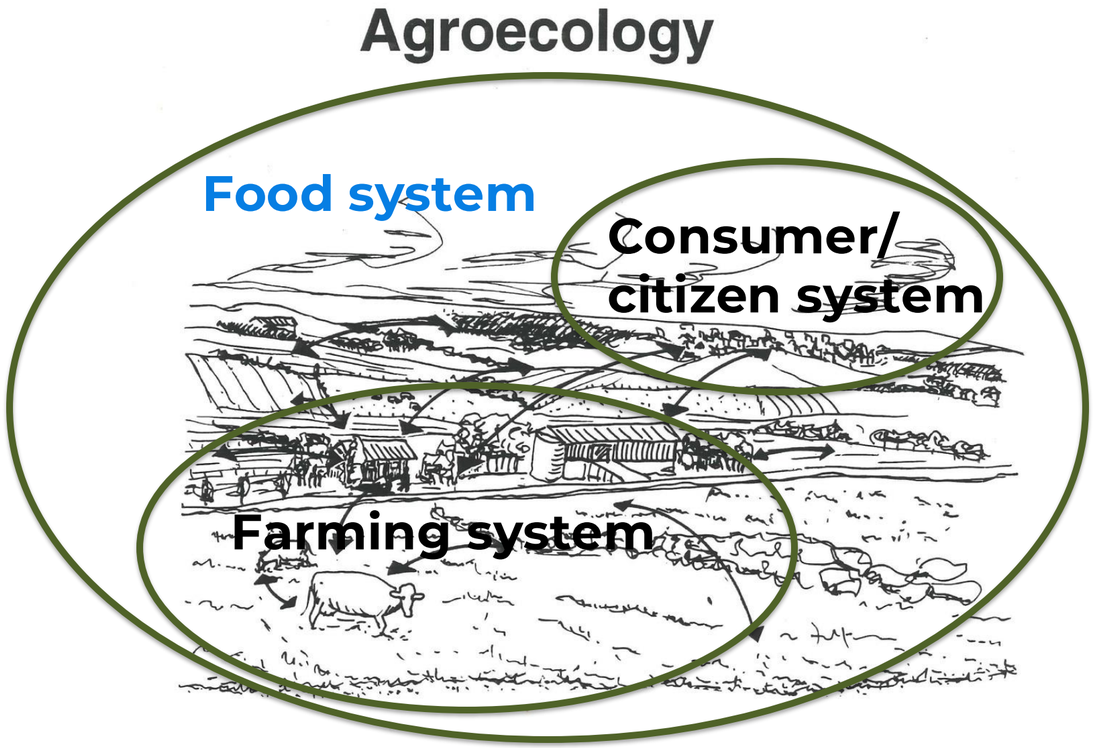
Thesis (30 and 60 ECTS)

Agroecology education: Becoming an agroecologist



The core agroecological practice:

Dealing with the challenge of the whole (from part to whole)
Finding site-specific solutions towards sustainability (from whole to part)
Reflecting on own experiences



The artistry of the agroecologist

The central idea of the whole semester agroecology course
(and the whole MSc program) at NMBU
is to direct the students' attention towards the real world of farms,
food production and food consumption.

The students are encouraged to turn away from books (literature, theory)
and turn their attention towards the world as the *primary* source for learning and development –
of **becoming agroecologists.**

The core question for educators in such a kind of education
is in what ways and to what extent
such a turn impacts on the "post-education" life of the students,
both personally and professionally, as well as how we teach.

This is important, because the main purpose of education is not about
what the students learn, but what they will do with what they have become (Benner 2015),
(the existential dimension of education). **There is much more to education than learning!**

1.1. Cross-cutting key competencies for achieving all SDGs

Competencies cannot be taught, but have to be developed by the learners themselves.
They are acquired during action, on the basis of experience and reflection
(UNESCO, 2015; Weinert, 2001).

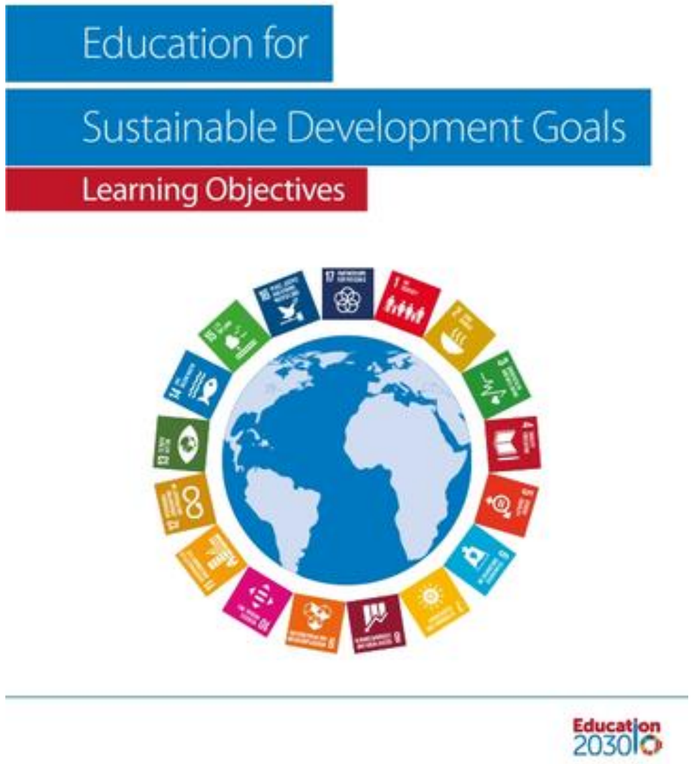
Box 2.4.4. Key methods for learning for the SDGs

Collaborative real-world projects, such as service-learning projects and campaigns for different SDGs

Vision-building exercises such as future workshops, scenario analyses, utopian/dystopian story-telling, science-fiction thinking, and forecasting and backcasting

Analyses of complex systems through community-based research projects, case studies, stakeholder analysis, actors' analysis, modelling, systems games, etc.

Critical and reflective thinking through fish-bowl discussions, reflective journals, etc.



Inter- and transdisciplinarity

Becoming open institutions

Diverse ways of knowing

Stronger presence in society

SHORT SUMMARY

The 2030 Agenda must be embraced by higher education institutions

With 2030 less than a decade away, it is paramount to think critically and act urgently if we are to achieve the Sustainable Development Goals.

Higher education institutions are uniquely positioned to contribute to the social, economic and environmental transformations that are required to tackle the world's most pressing issues.

This report thoroughly discusses the role of higher education institutions in contributing to the 2030 Agenda, through a focus on three interrelated themes:

1. the need to move towards inter- and transdisciplinary modes of producing and circulating knowledge;
2. the imperative of becoming open institutions, fostering epistemic dialogue and integrating diverse ways of knowing; and
3. the demand for a stronger presence in society through proactive engagement and partnering with other societal actors.

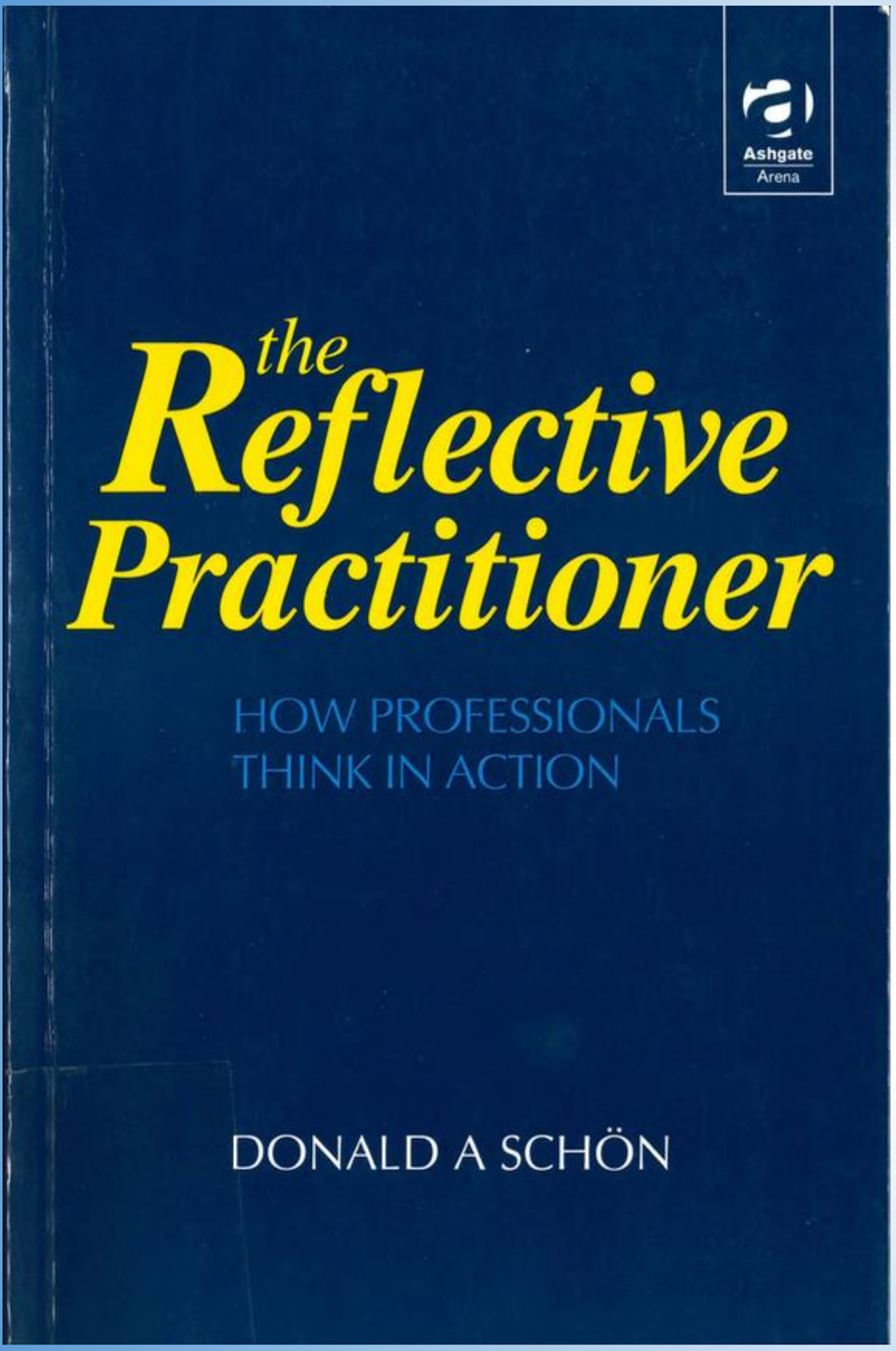
The report directs attention to the systemic barriers that have inhibited transformations in these three areas so far, and provides advice and examples on how to achieve this.

The report calls on higher education leaders and actors to push for transformations within their institutions, using the report's recommendations to critically reflect and act on their role for achieving the 2030 Agenda.

unesco

"Since wars begin in the minds of men and women it is in the minds of men and women that the defences of peace must be constructed"

UNESCO 2022: Knowledge-driven actions: Transforming higher education for global sustainability



From Technical Rationality to Reflection-in-Action

(the book is cited ca 91 000 times (Google Scholar)

Technical Rationality:
“instrumental problem solving made rigorous by the application of scientific theory and technique” (p. 21)

- The real situations in farming and food systems that the agroecologist encounter: Not stable situations that fit or obey the assumptions of scientific knowledge.

- They are characterized by uncertainty, instability, uniqueness and value conflicts.

- This is why the work of the agroecologist cannot be about the application of ‘pre-cooked’ (scientific) knowledge, but require reflective engagement with the specifics of the situation, that is, reflection-in-action (Schön 1984, adapted from Biesta 2019).

- “Finding one’s way, not through blind trial-and-error, but through careful consideration of steps to take, possible and actual consequences, resulting in a readjustment of initial action, are all part of what reflection-in-action is about – as a reflective conversation *with* the situation, not an intervention *upon it” (Biesta 2019, with ref. to Schön).*

The reflective conversation with the situation:

The agroecologist will bring a lot (theoretical knowledge and experiences) to this conversation, to relate particularities to something more general, to be able to address issues in a more productive manner,

but will always be open to the discovery of new phenomena in the field,

that might change the approach towards sustainability.

(Adapted from Schön, 1984)

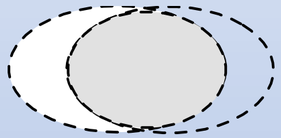
The whole semester course: Becoming an agroecologist through the meeting with the world and oneself

THE WORLD
(outside – «the object»)

YOU (THE STUDENT)
(inside – the «I»)

How can we get there?
A plan of action

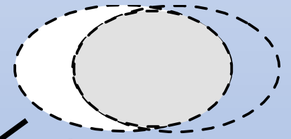
Reflective journal(daily)



FARMS

What did I experience?
How have I been?
How have I been as an agroecologist?
What are the questions I ask myself?
What will I do to find the answers?

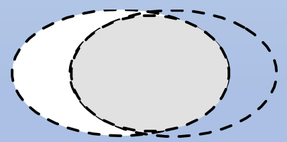
In groups



FOOD SYSTEMS

What is there?
The present

What does the world ask from me?
How will I respond?



What is the desired future?
A vision

Two stakeholder documents (social)
Oct 4, Nov 29

Two reflection documents (individual)
Part I (formative): Oct 4
Part II (summative): Dec 10

The curriculum: To give you (student) ways to meet the world and yourself

Becoming an agroecologist through action education

THE WORLD
(outside)

THE STUDENT
(inside – the «I»)

What
desired future?
A vision

FARMING
SYSTEMS

FOOD
SYSTEMS

How can we get there?
ction

What are the implications for my future as an agroecologist?

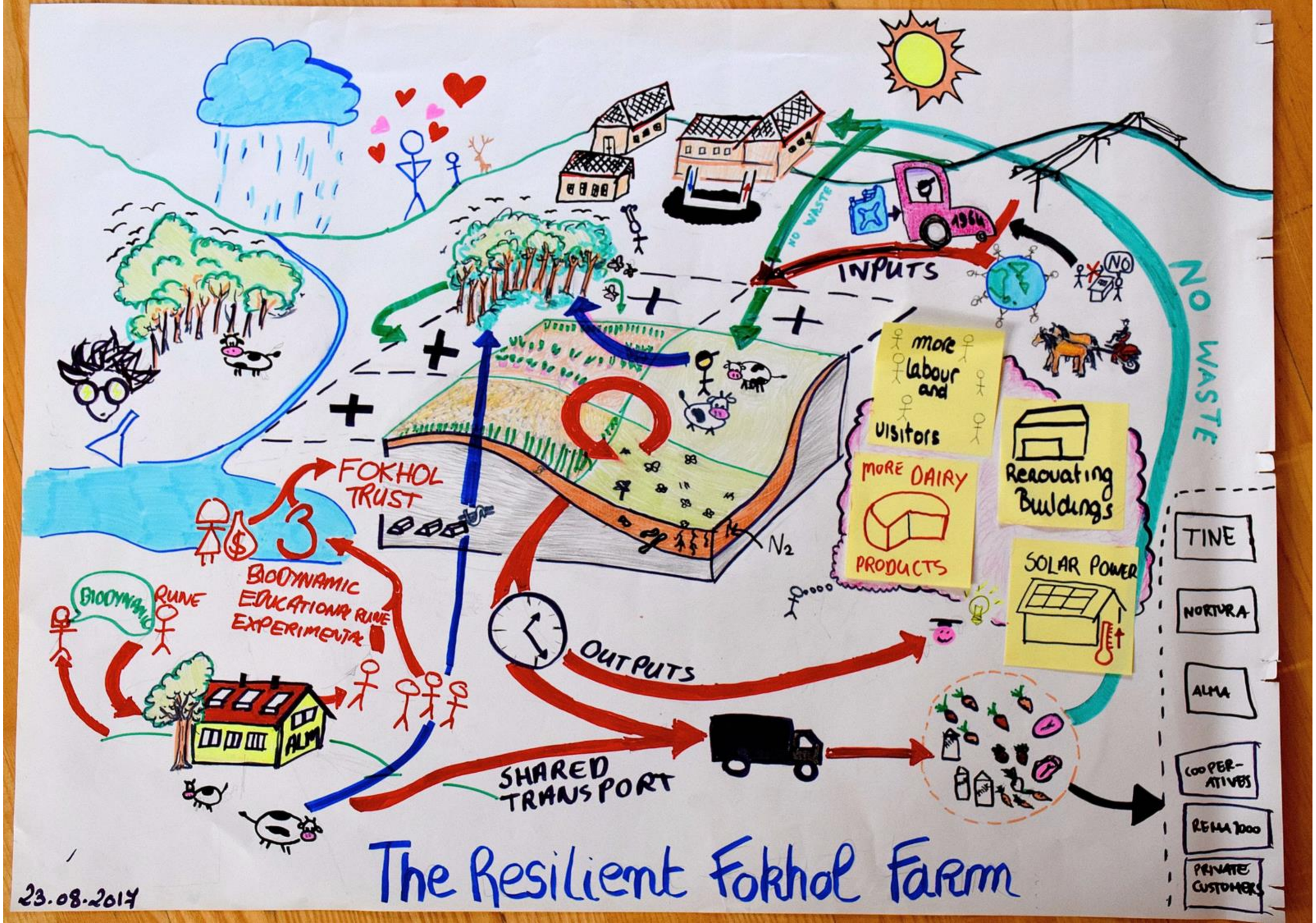
How am I thinking and learning?

What is my task?

The curriculum: To give the students ways to meet the world and themselves

Starting with the Phenomena

Rich picture



Rich picture

Visioning

Visioning

UMB
Norwegian University of Life Sciences

Buskerud County

A vision of the county towards new perspectives on development

A Client Document prepared for Øystein Haugerud,
County Agricultural Office

MSc Agroecology and Food Systems (PAE 303)
Norwegian University of Life Sciences (UMB)

Prepared by:

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BSc Agricultural Scien
Nicholas Willis, *U*
BSc Biological Systems Enginee

November 28th, 2005

NORWEGIAN UNIVERSITY OF LIFE SCIENCES

MSC. IN AGROECOLOGY

DEVELOPING A VISION FOR EVA'S FARM

2013

Aschjem Gårds Farming System: A Vision for Sustainability

Karin RUEDE
Christopher BRADBURN
Jenna SMITH
Matthieu THABARD
Eva KARACHRISTIANIDIS
Laura CAZAUX

Empowering Local Food System
Through Innovation and Cooperation

Report on Public Food Procurement of Tolga Kommune

December, 2022

Norwegian University of Life Sciences

Ana Madeleine Fuvel, Giovanni Zucca, Katrin Schmidt, Kushal Poudel, Thea Marie Kvam

Prepared for the course 'PAE302-Action Learning in Farming and Food System from the M.Sc. Agroecology at the Norwegian University of Life Sciences (NMBU)

INCREASING ORGANIC FOOD IN HIGH SCHOOL CANTEENS

November 2019

Agathe Anthonioz, Joanna Costello, Elsa Michel,
Synneve Øien Frøyen & Benjamin Stewart

Norwegian University of Life Sciences

Agroecology - PAE302 – Action Learning in Farming and Food systems

Norwegian University of Life Sciences

AKERSHUS fylkeskommune

Reflecting on Experiences – Individually


and Together

Course schedule – first eight weeks

PAE302 2024		Week 1 August 12 – 16 **INTRODUCTION**	Week 2 August 19 – 23 **OUT IN THE FIELD**	Week 3 Aug 26 – 30 **Prepare first farm visit**	Week 4 Sept 2 – Sept 6 **Prepare first farm visit**	Week 5 September 09 – 13 **FIRST FARM VISIT**	Week 6 September 16 – 20 **Prepare second farm visit**	Week 7 Sept 23 – Sept 27 **SECOND FARM VISIT**	Week 8 Sept 30 – October 4 **Prepare documents**
Monday	09:15 - 10:00	Intro to course and programme. (GL, CT)	Travel to Stange by bus. Introduction to the task in Stange continued. Interviews, planning of project work on farms.	International Agroecology Session – Historical roots, diversity of interpretations, recent expansion (CF, CT)	09:00 Deadline Eating observation	**FIRST FARM VISIT** WHAT IS THE PRESENT SITUATION? A rich picture	Individual/Group work	**SECOND FARM VISIT** WHAT IS THE DESIRED FUTURE? HOW CAN WE GET THERE? Vision and plan of action	Final presentation of the farm project work Q&A regarding finalization of the farm document (CT) (PL202)
	10:15 - 11:00				09:15–13:00 Ecol. principles, sustainability analysis. Farm and landscape level analysis (TB, CF)				Mid-term evaluation of course (CT) (PL202)
	11:15 - 12:00						Group dynamics II (MN, CT)		Individual/Group work
	12:15 - 13:00	12:30-13:00 Lunch at Vitenparken							
	13:15 - 14:00	13:00-14:00 BIOVIT Faculty welcome							
	14:15 - 15:00	Vegetable garden visit (TB, MN, CT)		Online Q&A with ISARA (for double degree students)	Literature seminar I - Farming systems (CF, TB, CT)		Individual/group work		
	15:15 - 16:00								
Tuesday	09:15 - 10:00	Practical info about the programme (double/single degree) (MN, CS)	Work in groups on farms	Individual/Group work					
	10:15 - 11:00				Dialogue (GL)		Literature seminar III - Learning agroecology (GL, MN, CT)		Individual/Group work
	11:15 - 12:00	Observation and exploration walk (MN, GL)					The reflection document (GL,MN)		
	12:15 - 13:00								
	13:15 - 14:00								
	14:15 - 15:00	Introduction to reflection (GL, MN)			Discuss eating observation (MN) (PL203)		Individual/Group work		
	15:15 - 16:00								
Wednesday	09:15 - 10:00	Excursion to a nearby organic farm, including reflections on the visit + agriculture in Norway (TB, CF)	Observation walk and interviews Sum up, develop presentations	Agriculture in Norway (TB)	Literature seminar II - Agroecology (CF, TB, CT)				
	10:15 - 11:00								
	11:15 - 12:00								
	12:15 - 13:00				Reflection session II (GL, CT)		Individual/Group work		Individual/Group work
	13:15 - 14:00			Vegetable garden practice (CT)					
	14:15 - 15:00	"Graskurs"			Vegetable garden practice				
	15:15 - 16:00								
Thursday	09:15 - 10:00			Qualitative methods (MN)	Systems thinking and action learning/research (TB, CT) 08:15 – 11:00	Groups present experiences from farm visit	Reflection session III (GL, CT)	Reflection session IV (GL, CT)	
	10:15 - 11:00	Diversity Icebreaker (BE, GL)	Presentation of farms. Sum up, return to campus			Rich pictures, themes and influence diagrams (TB, GL)	Individual/Group work	Individual meeting with core teachers	Individual/Group work
	11:15 - 12:00								
	12:15 - 13:00			Group dynamics I - cooperation checkl. (MN)					
	13:15 - 14:00	Team work, conflict resolution (BE, GL)		Introduction to the project work (MN, SM)	NMBU Jubilee	Vegetable garden practice (CT)	Vegetable garden practice	Vegetable garden practice (CT)	Vegetable garden practice
	14:15 - 15:00			Individual/Group work					
	15:15 - 16:00	Introdction to the Stange week (GL, TB, CT)							
Friday	09:15 - 10:00	Seminar on pre-course readings (MN, CT)	Individual/Group work	Individual/Group work	Students present plans for first farm visit for feedback (CT)	Conceptual modeling of human activity systems (TB)	Groups present plans for the second farm case visit (CT) (PL202)	Individual/Group work	Individual/Group work
	10:15 - 11:00								
	11:15 - 12:00	Prepare for Matriculation					Groupwise meetings with core teachers (CT)		
	12:15 - 13:00		Scientific papers, literature seminars, peer review (CF, TB)		Individual/Group work				
	13:15 - 14:00	Matriculation of the new Bachelor and Master degree students.				Individual/Group work	Individual/Group work		
	14:15 - 15:00		Individual meetings with core teachers (CT)						
	15:15 - 16:00								
									23:59 Deadline for farm document

	Methods, tools, concepts	Teachers			
	Reflection	**Core teachers (CT) at BIOVIT, Agroecology Group**	**Student advisors at NMBU**	**Other researchers**	**Extra-university experts**
	Global issues	Geir Lieblein (GL)	Cathrine Strømø (CS)	Mette Vaarst (MV), Aarhus Univ., DK	Stina Mehus (SMe), Nordre Øierud Farm
	Literature seminars	Tor Arvid Breland (TB)	Nina Rosita Hansen (NH)	Helle Meltzer (HM), Norwegian Institute of Public Health	Bjørn Ekelund (BE), Human Factors AS
	Food system topics	Anna Marie Nicolaysen (MN)			All farmers and other stakeholders you will meet during the project work
	Project work	Charles Francis, University of Nebraska, USA (CF)		Morten Clemetsen (MC), Landsam, NMBU	
	Farm topics / vegetable garden				
	Opening, closing and deadlines				
	Individual meetings with teachers				

Course schedule – last eight weeks

28 10 24

PAE302 2024

		Week 10 October 14 – 18	Week 11 October 21 – 25	Week 12 October 28 – November 1	Week 13 November 4 – 8	Week 14 November 11 – 15	Week 15 November 18 – 22	Week 16 Nov 25 – Nov 29	Week 17 December 2 – 6
		INTRO TO FOOD SYSTEMS	**FIRST FOOD CASE VISIT**	**The desired future**	**Prepare stakeholder workshop**	**SECOND FOOD CASE VISIT**	**Stakeholder document, reflection document, oral presentation**		
Monday	09:15 - 10:00	The food system project work (MN) (PL202)	Food systems - The sustainable landscape dimension (MC) (PL202)	Impressions from the visit (PL202)	Individual/Group work	First student-led reflection (CT) (PL202)	Impressions from the field (PL202)	Third student-led reflection (CT) (PL202)	Final reflection workshop (CT) (PL202)
	10:15 - 11:00	Sustainable production and consumption (HM) (PL202)		Reflection session V (GL, CT) (PL202)			Second student-led reflection (CT) (PL202)	Reflective essay Q&A (PL202)	
	11:15 - 12:00								Individual meeting with core teachers
	12:15 - 13:00		Individual/Group work			Individual/group work		Individual/Group work	
	13:15 - 14:00	Intro to food systems cont.(MN) (PL202)		Rich pict. and themes intro (MN, GL) (PL202)			Q&A regarding finalisation of food system project (PL202)		
	14:15 - 15:00			Individual/group work			Individual/Group work		
	15:15 - 16:00								
Tuesday	09:15 - 10:00	The food system project work (MN) (S122)	Students present plans for the food system project work (CT) (S122)	Visionary thinking - Introduction (GL, MN) (S122) (S123 from 14:00)	Literature seminar IV – Food systems (MN, CT) (S122)	Individual/Group work	Individual/group work	Doing research – Master thesis workshop (TB, GL, MN) (S122)	Individual work
	10:15 - 11:00	Facilitated group work (MN) (S122)	Groupwise meetings with core teachers (CT) (S122)		Prep. for stakeh. WS (MN, GL) (S122)			Oral presentation questions (CT) (S122)	
	11:15 - 12:00								
	12:15 - 13:00	Individual/Group work	Individual/group work		Individual meeting with core teachers. Feedback reflection document			Individual/Group work	
	13:15 - 14:00								
	14:15 - 15:00			Individual/Group work					
	15:15 - 16:00								
		23:59 Deadline reflection document, Phase 1							
Wednesday	09:15 - 10:00	Feedback on farm docs, Q&A. (PL203)	**FIRST FOOD SYSTEM CASE VISIT**	Visionary thinking - Desired situation for the future (GL, MN) (PL203)	Reflection session VI (GL, CT) (PL203)	**SECOND FOOD SYSTEM CASE VISIT**	Individual/Group work	Individual/Group work	**Oral presentation (PF110))**
	10:15 - 11:00								
	11:15 - 12:00				Individual/Group work				
	12:15 - 13:00	Individual/Group work							
	13:15 - 14:00								
	14:15 - 15:00								
	15:15 - 16:00								
Thursday	09:15 - 10:00			Visionary thinking - From vision to action – Incl. Force Field Analysis (GL, MN) (S122)	Individual/Group work		Final presentations of food system project work. Online, open session (CT) (S122)	Individual/Group work	**Oral presentation (PF110)**
	10:15 - 11:00	Sustainability in food systems (TB, CT) (PL203)							
	11:15 - 12:00				Farmers Field Schools (MV, TB) (PL203)		Individual/group work		*Final sum-up of the whole course and celebration! (PF110)*
	12:15 - 13:00			Individual/Group work					
	13:15 - 14:00	Vegetable garden practice (CT)			Individual/Group work				
	14:15 - 15:00								
	15:15 - 16:00								
Friday	09:15 - 10:00	Individual/Group work		Individual/Group work	Students present plans for second food system case visit for feedback (CT)		Global seminar (MN, CT) (PL202)	Individual/Group work	Individual work
	10:15 - 11:00								
	11:15 - 12:00				Individual/Group work				
	12:15 - 13:00								
	13:15 - 14:00								
	14:15 - 15:00								
	15:15 - 16:00								
								23:59 Deadline food system document	December 10, 09:00 Deadline final rreflective essay

	Methods, tools, concepts	Teachers			
	Reflection	**Core teachers (CT) at BIOVIT, Agroecology Group**	**Student advisors at NMBU**	**Other researchers**	**Extra-university experts**
	Global issues	Geir Lieblein (GL)	Cathrine Strømø (CS)	Mette Vaarst (MV), Aarhus Univ., DK	Stina Mehus (SMe), Nordre Øierud Farm
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	Project work	Charles Francis, University of Nebraska, USA (CF)			All farmers and other stakeholders you will meet during the project work
	Farm topics / vegetable garden			Morten Clemetsen (MC) Landsam, NMBU	
	Opening, closing and deadlines				
	Individual meetings with teachers				

The survey of alumni

The main purpose of education is not (merely) about what the students learn, but **what they will do with what they have become** (Benner 2015), (the existential dimension of education).
There is much more to education than learning!

The transition from student life to «post-student life»

Research questions

1. What has been the impact of an agroecology action education course on the professional and private (personal) life of the students?
2. How do agroecology students assess and evaluate their learning and development with reference to learning goals and core agroecology competences?
3. How do the AE alumni assess strengths and weaknesses of the course as a whole, the different elements of the course, and the overall influence of the course in comparison to other course experiences during their studies?

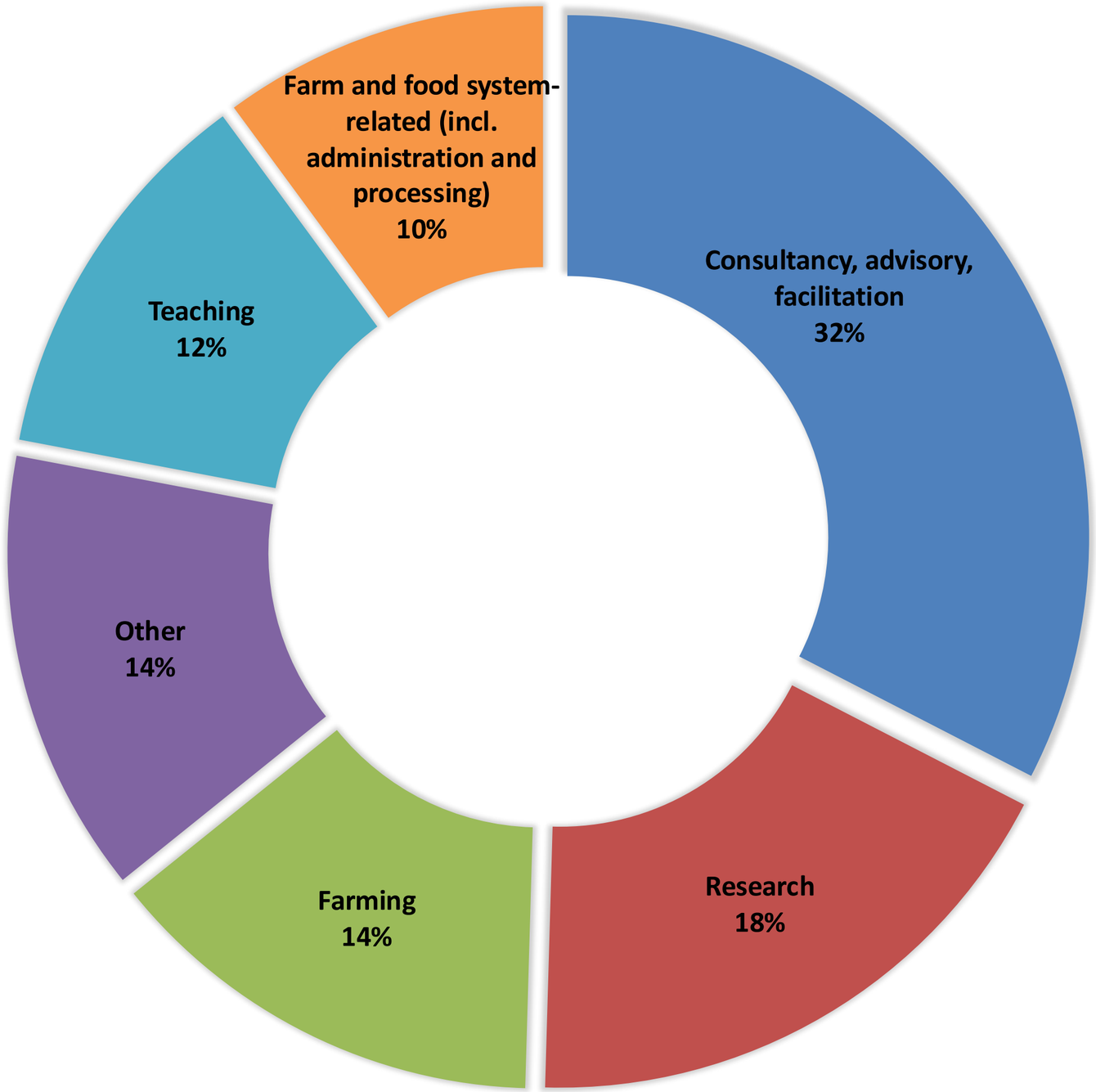
Methods

Data collection:
An online survey (May 2022)
Closed and open questions

Data analysis:
Descriptive statistics
Inductive content analysis

Year	Number of responses	Number of invited students	Number of students in total	Response rate (% of invited students)
2000	2	6	13	33
2001	2	7	10	29
2002	6	9	10	67
2003	2	9	9	22
2004	2	8	16	25
2005	6	13	21	46
2006	5	15	20	33
2007	2	12	16	17
2008	8	15	22	53
2009	7	19	21	37
2010	9	20	22	45
2011	6	22	23	27
2012	11	17	17	65
2013	10	20	21	50
2014	5	21	22	24
2015	4	20	22	20
2016	13	16	17	81
2017	12	20	21	60
2018	3	23	24	13
2019	5	20	20	25
2020	1	0		
SUM	121	312	367	39

Agroecologist alumni fields of work



Overall view on the experience

	Disagree fully	Disagree partly	Agree partly	Agree fully	Prefer not to answer
Participating in the course was generally a positive experience	0 %	7 %	12 %	80 %	0 %
			92%		
I question whether it was worth taking the course	66 %	17 %	12 %	4 %	2 %
	83%				
The strengths outweighed the weaknesses of the course	2 %	6 %	27 %	64 %	2 %
			91%		
All the elements of the course experience were helpful to my learning	3 %	16 %	41 %	39 %	2 %
			80%		
Some elements of the course experience hindered my learning	46 %	22 %	26 %	3 %	3 %
	68%		29%		

«Being sent out to meet real situations and projects is one of the most appreciated parts of the course. Even though it is a challenging course, I appreciated this in the end, because I learned a lot by being challenged in new ways, both academically and practically, but also I learned a lot about myself in different settings."

Influence of the course

Compared to other courses I took during my studies, this course was...	Much less influential	Slightly less influential	About equally as influential	Slightly more influential	Much more influential	Prefer not to answer
	2 %	6 %	11 %	21 %	59 %	3 %

80%

«It has been the most important course during my studies»

«The course was very inspiring and did create very significant impact on my worldview, ambitions, passion, and agency. This was very high quality and I am grateful for it.»

«Not to sound dramatic, but quite life changing. It did change my worldview on how we should re-think, change our food system and more broadly our society at large.»

Some implication for further course improvements

Area for improvement	Theme
From single discipline to transdisciplinarity	• *Some students seemed to give up on the course which was very disappointing. I think they wanted more quantitative, positivist-style learning?*
Student expectations with regards to course content	• *I was often frustrated by the weak technical level of the discussions. I wished some more grounded talks or let's say, a dialogue more balanced in-between creativity and knowledges.*
Feedback from teachers	• *-… wishing that we had more feedback from the professors during the course - while I understand the focus was on 'autonomous learning', I believe that we - as students in a university - would have benefitted from more guidance from the professors throughout the course.*
Assignments	• *I did not appreciate the final assignment, where if you didn't 'learn' or 'take anything away from the course', it was your personal failure, rather than the responsibility of the structure of the course or the facilitation.*
Innovative teaching	• The course is almost ahead of its time, and it can be difficult to integrate what we learned in our professional lives.

SUPERVISION

ASSESSMENT

??

Questions for break-out rooms

SUPERVISION

From single discipline to transdisciplinarity:

What can we do better to support students´ transition from a disciplinary to a transdisciplinary way of thinking and acting?

Alt: What can we do better to support students´ transition from a theory centred to phenomenon centred way of learning and developing as agroecologists?

Student expectations with regards to course content:

What can we do better deal with student expectations with regards to course content?

Feedback from teachers

What can we do to better communicate what students can expect feedback on and what they have to sort out (take responsibility) for themselves? (The balance between teacher driven and student driven activities – areas of responsibility)

ASSESSMENT

Assignments

What can we do to develop good ways of assessing students,
to make our assessment more compatible with our educational ethos?

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Innovative teaching

How far ahead of our time should we be in a “pedagogy for the present”?