

Next FOOD

EDUCATING THE NEXT GENERATION
OF PROFESSIONALS IN THE AGRIFOOD SYSTEM

D2.5: Annual case development report (year 1)

WP2 – Action research facilitation



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1 Introduction

In this document, we report the activities and outcomes in each Nextfood case. A template for reporting these outcomes was developed and sent out to each case (see Appendix 1). The template covered the three phases of case development—planning, implementation and reflection—as described in the manual for case development (D2.2). A filled-in template was then returned from each case and used to write this document.

Throughout this document, we first present a summary of the responses from the Nextfood cases on the topics listed in the template. Thereafter, the case reports from the individual cases follow.

2 Case development during the first year

In this chapter, we provide a summary of the content of the individual case reports. This summary is structured after the topics in the case reports and covers some of the main elements from the first year of case work.


2.1 Initial planning

The first phase of the transition process is making an initial plan. Following the manual for case development (D2.2), the initial plans are best made during a planning workshop according to the instructions in D2.2. We asked all cases to report on the five steps that should be taken during this phase, and the following is a summary of the contents of their reports.

2.1.1 Exploring the present situation

First, the cases reported on the event leading up to the present situation, namely the history of their case. In most of the case reports, the majority of the content in this sub-chapter regards the history. In the future, the NMBU team will assist the cases in exploring their present situation better, for instance by using the technique of making a rich picture (https://en.wikipedia.org/wiki/Rich_picture), which will be described in the toolbox for practitioners (D3.2).

The following cases consist of courses where students take part in activities ‘in the field’ (extra-university environments), and they have already implemented some aspects of the Nextfood approach as described in D2.2 (often a trial run): Norway, Ethiopia, Czech Republic, Italy – UNISG, India – UoC, Italy – CIHEAM, India – UoK, possibly also Greece. The cases in Romania and Austria accommodate for student teams focusing on developing food products. One team of Romanian students tried to get accepted for the online course in Austria, but didn’t succeed. This indicates



possibilities for interaction between cases on the student level, not only on the researcher level.

2.1.2 Envisioning the intended shift

The selected cases were asked to report on what context-specific aspects they will focus on when transitioning to the Nextfood approach. When envisioning the intended transition, all cases focused on slightly different aspects of change. India – UoC, Italy – CIHEAM and Norway focused on improving the ways the students develop key skills and competences. Italy – UNISG, Sweden, Czech Republic and Greece were mostly concerned with implementing the six shifts, as described in the master manual (D2.2). The remaining cases had slightly different foci, ranging from the virtual environment becoming an umbrella learning arena (Austria), involving other courses (Ethiopia), institutional and policy-related factors (Romania) and focusing on the tools and activities of the course (India – UoK).

2.1.3 Determining what it would require to make the intended shift

The cases were then asked to report on what it would require to achieve the goals they determined in the previous section. The reports from the cases show that running a planning workshop in line with the template provided in the master manual (D2.2) helped to determine what it would require from the students, teachers, institutions, and other stakeholders to make the intended shift. Hence, the educational strategy could elaborate more on why the workshop is helpful in the way it is set up and/or the process it facilitates. Nevertheless, the results from such a workshop can become very detailed (for example, in the Ethiopia case) and, hence, the strategy should entail a further ranking or analysis of these results.

Several cases mentioned the necessity of facilitating dialogue for making the intended shift, such as setting time aside for dialogue, creating the right setting for dialogue during different activities, and enable focus, listening and co-creation of knowledge.

Human capital was often mentioned as a supporting force to make the intended shift, while lack of time to acquire competences related to dialogue and reflection was often mentioned as a hindering force. Previous experience with the intended shift (and, hence, building of necessary human capital), was also mentioned as supporting force, particularly by the cases that already have such experience.

Additionally, institutional aspects were often mentioned as hindering forces, such as not allowing flexibility in curricula and not providing the necessary infrastructure and financial support for the practicalities related to making the shift. Likewise, a lack of interest by different actors involved, including institutional ones, were mentioned several times as a hindering force. Practicalities that are difficult to overcome were reported as hindering forces in several cases.

2.1.4 Planning of implementation and planning the immediate next steps

In order to pursue the goals for transitioning and address what it takes, the cases were required to make action plans. While some cases planned for practicalities in running the educational activity, including materials needed and a detailed timeline (for example Romania, Austria), other planned at a more conceptual level for making the intended shift (for example Greece, Italy – CIHEAM).

Depending on whether or not the cases have already completed a full cycle of educational activities, and on whether or not they have held a planning workshop, the case reports are either very broad or very detailed.

Our assumption is that we will only be able to judge which (if any) approach to planning is most fruitful for further development of the cases, and that this might be different across cases as well. As such, these differences in reporting probably point towards an interesting point of cross-case comparison in relation to developing the educational strategy by finding generic aspects and nuances to those for when it comes to implementing the Nextfood approach at any place at any point in time.

2.2 Implementation


2.2.1 Teachers' and students' reflection documents

Only two cases have reported on students' reflection documents (Norway, India – UoK). No cases have reported from teachers' reflection documents. Some cases have reported on one person's (presumably the one responsible for the course) overall reflection on the educational activity (Greece, Czech Republic, Italy – CIHEAM).

For those cases that had collected and analyzed students' reflection documents, the documents revealed quite some diversity in students' abilities to incorporate theory into their reflection documents (for Norway), as well as students' refinement of their thought processes and development of core competences throughout the educational activities (India – UoK).

For those cases that reported on an overall reflection on the educational activities, a generic reflection was that students' motivation is a key to success and that students' interaction with situations in the field can cause a shift in their mindset.

Based on the positive experiences in the Norwegian and India – UoK case, we believe that it is useful for all cases to incorporate the activity of writing reflection documents into the next cycle of the educational activity. Particularly for students, this might yield insights into development of the competencies that are core to the Nextfood approach, and refinement of processes of thought and, hence, shifts in mindsets that are precarious to the future generation of professionals in agrifood and forestry systems.



Moreover, the usefulness of introducing teachers' reflection documents, should be tested in the next cycle. Our assumption is that an education strategy that incorporates reflection by several (if not all) of those involved will be fruitful.

2.2.2 Students' course evaluations and feedback from key stakeholders

The frequency of evaluation by students differs greatly across cases, and all focused on evaluation of educational activities by students. Overall, student-led activities such as field-based project work and other immersion in situations in the field were evaluated positively by students.

Key stakeholders' evaluation of the process was positive if the students had been motivated. In cases where the students were not motivated, key stakeholders' evaluation was negative and willingness to cooperate in the future as well.

Ensuring students' awareness of the new approach and introduction to action learning at the very start of the educational activity appears to be key to come to positive learning experiences (and hence positive course evaluation) on not only the students' part, but also the key stakeholders part.

2.2.3 Students' self-assessment of competences

Three cases (Norway, Italy – UNISG, and India – UoK) have asked students to do a self-assessment of their competences at the beginning and end of the course (for Norway and India – UoK), or before and after every didactic trip. Overall, the average of the rankings of these self-assessments increase over time, meaning that according to the students' self-assessments, most students improve their competences during the educational activity.

Self-assessment of competences gives a rough indicator of whether or not the educational activity changes students' perception of their own competence level with regard to the five core competences in the Nextfood approach. Given that students have voiced other ideas about how their competences could be developed further or better during the educational activity, it might be useful to complement the self-assessment with a group discussion on why the self-assessments' average values increase over time and how these increases could become even bigger.

2.2.4 Mapping the students' learning goals and competence development

At this point in time, very few cases have been able to report on this activity. Those who have (Norway, Greece, Italy – UNISG and India – UoK) report slightly different issues. Therefore, it is not possible to derive consistent findings on this topic to date. We can nevertheless point out that three cases (Norway, Greece, India – UoK) pointed out that more communication throughout the learning process might help to avoid confusion amongst students and other about what the course is about as well as to speed up the learning process through co-creation of knowledge (which in large part depends on communication).

2.2.5 Reflection sessions

Only the Norway, Italy – UNISG and India – UoK cases have reported on regular reflection sessions. All cases reported that they found these sessions to be very helpful to the learning process of the students. Since these three cases have had extensive cooperation even before the project began, it might be that they understood the concept of reflection sessions better than the other cases. We expect that in the coming cycles, with the master manual (D2.2) now being completed, the other cases will also be able to implement this element in their educational activities.

2.3 Reflect and plan again

2.3.1 Recapping the case activities

The first step of reflecting on the cycle is to look at the outcomes. The suggested method is through a reflection workshop as described in the master manual for case development (D2.2). During the first cycle, most cases did not manage to do both an initial planning workshop and a reflection workshop related to the first cycle. Therefore, some of the accounts from this section are related to the initial planning workshop since it had a reflective element and a similar structure to the reflection workshop.


The cases in Greece, Czech Republic and Italy – CIHEAM reported on the recapping of the case activities from the first cycle in this section. Those three cases combined the reflection workshop with the initial planning workshop as they had already completed or were in the middle of the cycle when the workshop was held. Aligned with the other workshop outcomes, they had mixed evaluations from students where, for instance in Greece, there was some opposition to a complete abandonment of the traditional learning style, but a common recognition that the mindsets of all involved should change.

In Norway, a separate reflection workshop was held parallel to developing the method for conducting it. Even though the case was ranked as having come far in the transition towards the Nextfood approach, while recapping the case activities, the data showed that further improvements could be made, e.g., regarding measures to improve students' understanding of and motivation for action learning.

We expect to receive inputs from the other cases once they have conducted a reflection workshop according to the format developed.

2.3.2 Assessing the shifts

In many of the workshops, the participants were instructed to rank the current status of the six shifts (as described in D2.2) on a scale from 1 to 10. The results of this ranking revealed that the participants viewed themselves to be on various ends of this scale, with Norway ranking themselves very high and, for instance, Ethiopia ranking



themselves very low. The method of using this scale was meant to spur reflection and dialogue during the workshop and not necessarily as a distinct measurement tool to be viewed in isolation.

Assessing the shifts in different cases revealed that additional shifts should be introduced, especially regarding for students and institutions. Moreover, the ranking of shifts raised the question of what is the ultimate goal of the shifts. At this moment in time, the agreement seems to be that the ultimate goal is not implementing all shifts fully, but rather moving along the continuum to the extent that is fruitful for the learning process. The next cycles of developing the cases might reveal case-specific as well as generic findings on how far along the continuum one should move in order to reach an optimum state.

2.3.3 Determining the supporting and hindering forces

The goal of the present project is that, regardless of the ranking in the previous section, each case should strive for an improved transition to education based on the Nextfood approach as briefly described in D2.2. An important next step is then to determine which supporting and hindering forces are in play in the specific context. According to the case reports, an important force, which is supporting if there is a lot of it and hindering when there is little, is human capital including enthusiasm about the approach. Another is institutional support including support to implement the approach (finances, infrastructure, flexibility), time to take on the heavier workload that implementing the approach entails, and networking with stakeholders. In several cases and not surprising, students' and teachers' understanding of and motivation for action learning emerged as a force that is supporting or hindering depending on its quality.

2.3.4 Planning of how to build on the supporting forces and how to overcome the hindering forces

In order to build on the supporting forces and overcome the hindering ones, an action plans needs to be made. A strategy in several cases seems to be to improve communication about the Nextfood approach and what implementing this approach entails, as well as building (further) on human and institutional capital and networks.

2.3.5 Planning the next steps

Lastly, we asked the cases to report on their immediate next steps. An action plan should, ideally have concrete steps with a description of *who* needs to do *what*, *when* and *how*. Very few cases managed to report plans on such a detailed level. Planning the next steps focuses on two parts: planning practicalities and planning at a more conceptual level. The latter often indicates a need for establishing training of teachers on the approach and informing institutional key persons about the possible benefits of the approach.

3 Case reports

3.1 Norway

3.1.1 Initial planning:

I. Exploring the present situation in the case

The case in Norway revolves around the introductory course in the master program in agroecology at the Norwegian University of Life Sciences. The course is called “Action Learning in Farming and Food Systems”. It has been running for nearly two decades and has been continuously updated and reworked based on experiences and feedback from the students. The course usually includes around 20 students and attracts applicants from a large variety of countries. Most of the students are international. The course focuses on developing student’s competences and skills in dealing with the complex reality of food and farming systems. It lasts from August to December and gives 30ECTS. During the 2018 iteration (first cycle of the Nextfood case), there were three main course teachers, one assistant professor and one assistant teacher responsible for running the case. Since much of the content of the Nextfood approach is based on this particular case, the planning of the first cycle consisted of mainly making minor adjustments based on feedback and experiences from the previous year and introducing a peer-mentoring program. We also established an elaborate plan for data collection according to the existing research protocol draft.

II. Envisioning the intended shift

The NMBU case is, as described in the previous section, a case that has been running for many years with the basis of the Nextfood approach as the foundation for the course. Therefore, this case may not perform major shifts from the beginning of the project. Nevertheless, there is always an ambition to improve the course, and one addition that was planned and conducted during the first cycle of activities was involving second-year students in a peer-mentoring program within the case.

The idea of having a peer-mentoring program in the course stemmed from a report from the School of Economics at NMBU who have successfully pioneered a peer-mentoring approach within their master program. The reason for having a mentor program is that it might aid the students in dealing with the complex and at times messy situations during the course. The mentors could provide moral and social support in this process as they have recently been through it themselves. Including second-year students as mentors in the course would hopefully not only benefit the students, but also the mentors, teachers and the entire learning community by strengthening the web and links within it.

III. Determining what it would require to make the intended shift

In order to insert the peer-mentoring program in the course we first had a meeting with the key responsible person for the similar program at the School of Economics. During this meeting, she shared her experiences with us regarding what it would require to successfully start a peer-mentoring program.

The key items discussed were:

- Inviting enough second-year students. Ideally, around five will accept the invitation.
- Explain and motivate the mentors. It should be something they do because they want to help their peers to succeed. Therefore, there should not be any monetary compensation, but rather they can be awarded by being invited for lunch to discuss the outcomes of the mentor program and also they should receive a certificate for their contributions at the end.
- Assign someone who is in charge of overseeing the whole mentoring-program.
- The peer-mentoring program needs to be separate from the teacher-student relationship because it has other qualities.

IV. Planning of implementation


After learning what it requires to start a peer-mentoring program, the planning ensued. The first step was to assign the assistant teacher of the team as the person overseeing the program. Thereafter, invitations to second-year students were sent out and more specific plans for implementation were made. Unfortunately, the planning of the mentor program was initiated a bit too late to introduce the initiative during the first week of the course which would have been natural. However, we needed time to properly plan the actions and inform the mentors about the program. We then used the first two weeks to plan the immediate next steps of implementing the mentor program in the course.

V. Planning the immediate next steps

Table 1 in the next describes the plans for implementing the mentor program throughout the course.

Table 1: Initial plan for the 2018 mentor program

	Planning	
Week 0-2:	Planning + recruiting mentors + meeting with mentors	
Week 2-3:	Introduce mentor pilot program for mentees	
	Action	
	Mentor-mentee	Mentor-teachers
Week 3-4:	1 st meeting	
Week 5-6	2 nd meeting	Lunch
Week 9-10	3 rd meeting	
Week 12-13	4 th meeting	Lunch
Week 15-16	5 th meeting	
	Evaluation	
Week 18→	Evaluation of the mentor program	



We planned to divide the class of students into four groups and assign one mentor to each group. These mentor-mentee groups would then meet at least five times during the semester. These meetings would be an arena where the first-year students could seek guidance from the second-year students on matters that were better suited to discuss with a peer than a teacher. Two times, the teacher group would invite the mentors for lunch in order to facilitate communication between the teachers and the mentors. Here, valuable information and impressions of the learning community could be shared. At the end of the semester, we planned to have an evaluation of the mentor program where we could reflect upon the events during the semester.

3.1.2 Implementation

I. Facilitators' and learners' reflection documents


At the beginning of the course, all students were first introduced to the concept of reflection and simultaneously asked to start keeping a reflection diary. Their reflections throughout the course were to form the basis of a reflection document where they would be assessed on their abilities to reflect on their learning process. In these reflection documents, the students were asked to describe key events from the semester that were important for their learning process and – by using relevant literature – demonstrate an ability to tie it to theory. The ability to reflect upon the experiences by using relevant theory is the essence of action learning and therefore an essential part of the course. Many students are only partially able to reflect upon their experiences by using theory. Often, the reflection documents are heavy on the descriptive elements, where the group projects are explained and theory laid out. However, several students are also able to link these two.

During this first Nextfood cycle, we were not yet ready to also include teachers' reflection documents.

II. Learners' course evaluations and feedback from key stakeholders

Throughout the course, bi-weekly evaluations were conducted where the students were asked to rank each session on a scale from 1-7, where 1 indicates a session that was not at all beneficial to their learning and 7 indicates a session that was highly beneficial. Additionally, the students were asked to supplement their quantitative feedback with comments. The feedback was given online via a questionnaire-software. Additionally, at the end of the semester, a final evaluation of the whole course was conducted in a similar way.

The average evaluation scores of the sessions varied greatly throughout the semester. Student-led activities such as case visits, group presentations and student-led reflection sessions were highly rated with average scores close to 6. A few guest lectures, a seminar on visionary thinking and a field excursion also received similar scores. On the other side of the spectrum were classroom sessions on agriculture, methods, how to read literature and ecological farming principles with scores



averaging around 3,5. The overall evaluation scores showed a similar tendency towards ranking student-led activities highly and the more theoretical parts lower. Unfortunately, we were not able to gather final evaluations from all students and are unsure about the representability of the responses. Nevertheless, the average score on the question “What is your overall evaluation of [the course]?” was 4,1, which is much lower than previous years.

III. Learners’ self-assessment of competences


The students self-assessed their degree of mastery of the core competencies, once at the beginning of the course, and once at the end of the course. The self-assessment rubric located in the research protocol was used. The results from the beginning of the course – a baseline measurement – showed that the students reportedly were at different starting points. The average scores for the students across all competences ranged from 2,6 to 6,9 on a scale from 1-9. The average of the entire group was 4,5. At the end of the semester, the students reported their development. Most of the students reported a significant increase in their self-assessed mastery of the competences. Only a few students reportedly did not improve or devolved during the semester. It may also be that they ranked themselves to high at the beginning and realized that before the end of the semester. Nevertheless, the average score of the entire group of students rose from 4,5 to 6,2 indicating that the course was successful in contributing to the development of the students’ competences.

IV. Mapping the learners’ learning goals and competence development

In order to map the students’ learning goals and competence development (not self-reported), we asked them a set of questions both at the beginning of the semester, and at the end. We followed the process as explained in the research protocol. At the beginning of the semester, the responses to the questions were gathered in the form of written hand-ins. At the end of the semester, individual interviews were done with all the students.

From reading the answers to the questions from the beginning of the semester, we learned that many of the students had ambitions to learn more about many of the topics offered in the course, but also many more. Many of the students are especially interested in learning more about the ontology of the food systems, whereas the course also emphasizes the epistemology of investigating complex systems. From learning about this lack of overlap, we could adapt the course process slightly and try to better explain the need for emphasizing the epistemology as well. Nevertheless, the lack of overlap proved to be a challenge to overcome.

Fortunately, as became apparent during the end of the semester interviews, many of the students changed their views and updated their learning goals throughout the semester. Many explained that at the beginning of the course, they did not understand well the need for a focus on how to deal with complex systems, whereas looking back,



they understood it better and expressed motivation for using this approach in their futures to learn more about the food systems. Also, throughout the interviews, many students demonstrated that they had internalized the agroecological approach used in the course and also stated that they felt the course had facilitated development of their competences and skills. Unfortunately, a few students expressed dissatisfaction with the course and the way it was taught. One interpretation of their dissatisfaction is that they were never able to overcome the misalignment of their learning goals and the learning goals defined by the course.

V. Reflection sessions

Bi-weekly reflection sessions were held throughout the duration of the course. The process followed the general guidelines as written in the research protocol. During these reflection sessions, the students were asked to reflect on the course with different questions. This allows the students time and space to better understand what they have learned and how their experiences relates to their learning process. At the beginning of the semester, many of the students did not fully grasp the concept of reflection, but as they developed their abilities to reflect, they got more and more out of each session. Towards the end of the semester, the students were asked to lead the reflection sessions themselves and were then allowed to focus the reflections on topics they felt were most relevant at that stage. For instance, they could focus on aspects of the project work that were challenging for all students or challenges with the novel learning methods. This was very much welcomed by the student group, which was also reflected in the feedback on those sessions.

3.1.3 Reflect and plan again

I. Recapping the case activities

In the NMBU case, one workshop was conducted in order to reflect upon the first cycle and a second in order to plan the next cycle. These workshops also served the purpose of testing the process and therefore only included the core NMBU team, responsible for both running the case and doing the Nextfood research work.

When recapping the case, the data described in the previous section was distributed to the participants of the workshop ahead of the initial workshop and the following question was posed at the beginning of the reflection workshop: “In the data from the first cycle, what was the most surprising, what is the most interesting to build on, and why? The ensuing discussion focused on the lack of overlap in learning goals between the teachers and the students. Also, the teachers were surprised by the students who persistently did not accept the action learning methodology applied in the course. Nevertheless, the teachers also recognized that the students did in fact both self-assess and report competence development throughout the course, which is something that can be built on for the next cycle.

Assessing the shifts

In accordance with the research protocol and templates for the reflection workshop, the six shifts were ranked, on a scale from 1-10 by the workshop participants:

Below, the shifts are listed with the average score in parentheses behind the shift.


1. From lecture hall to a diversity of learning arenas **(7)**
2. From lecturing to linking of experience to theory, flipped classroom and peer learning **(7,33)**
3. From syllabus to supporting literature/a variety of learning sources **(9)**
4. From textbook to a diversity (variety) of teaching aids **(7,67)**
5. From written exam to a variety of assessment methods **(8)**
6. From lecturer to learning facilitator (which includes the introduction of and training in dialogue, visionary thinking, observation and reflection **(7,33)**

The teachers ranked this course as having to a large extent made these shifts. In the ensuing discussion around the ranking, the teachers stressed the fact that these numbers are not significant if it is not simultaneously done in a fruitful way. Simply going from lecture hall education to a diversity of learning arenas is not enough – it has to also be done in a fruitful manor.

Determining the supporting and hindering forces

In the final part of the reflection workshop, supporting and hindering forces for the improvement of the course activities were identified and discussed.

Supporting forces: This case has quite good support from the rest of the faculty and also has the financial means to realize the necessary changes. Another supporting force is the fact that experience-based knowledge and action learning courses are gaining popularity in Norway and are quickly becoming part of the “Zeitgeist”. Also,



there is an agroecology community at the university (mainly the students and teachers involved in the course) that includes motivated and talented students from diverse background as well as teachers with the know-how and experience necessary who are simultaneously willing to make the necessary changes.

Hindering forces: The topic of the students having different learning goals from those that are defined by the course was again brought up. Additionally, a hindering force is having students in the course who lack the relevant experience, pre-knowledge and attitudes necessary to succeed with this alternative approach to learning. Added to that, many students mainly have experience with traditional academic teaching, which also is a hindering force. Another challenge regards how to deal with the increased workload that is being put on teachers when they are expected to act more as learning facilitators rather than lecturers.

II. Planning of how to build on the supporting forces and how to overcome the hindering forces

After having reflected upon the previous cycle of activities, the NMBU team conducted a planning workshop. The goal of the workshop was to build on the outcomes of the reflection workshop in order to plan the upcoming action.

In order to build on the supporting force of having appreciative and motivated students, we aim to identify sources of student motivation as a course activity and also make more room for student-contributions in the learning activities. To build on our good connection with farmers and stakeholders, we aim to plan and invite farmers and other stakeholders months before the course so that they are well prepared for the visits. In order to build on the good experiences with action learning, we aim to improve the explanation of how the course activities are related to each other and also the thinking behind the different activities.

In order to overcome the hindering force of the increased workload of the course facilitators, we aim to develop a script for planning and running the course. To deal with the mismatch between the expectations of students and the expectations of the course facilitators, we aim to better communicate with students before they come regarding their expectations, share and improve the explanations of the links between the course activities and the expectations. We also aim to establish a protocol for how to deal with students who disrupt the learning community.

III. Planning the next steps

In order to set some of the developed action items into motion, we planned the next steps more in detail.

We concluded that in order to get a better understanding of the links between the activities in the course, and their links to theory, one of the most fruitful actions we could take was to develop the review report on educational approaches (D3.1), which will describe the theoretical background for the focus on competences, action learning and systems thinking. Additionally, writing the master manual for case development

(D2.2) and the research protocol (D2.1) would help us get a better overview before starting to write a script for running our specific course. These actions will keep us occupied until the end of June.

During the first weeks of July, we will pursue the more practical matters of course preparation such as inviting farmers and other stakeholders in good time ahead of the course, improve the course material based on our work with the Nextfood deliverables and also develop a script for planning and running the course. We also decided to set aside the entire final week before the course begins to specifically update and further plan the course process and content.

3.2 Romania

3.2.1 Initial planning

I. Exploring the present situation in the case

History of the case:

During the project implementation period there were organized a series of activities related to the dissemination of the NextFood project (presentation of the project at different events) but also activities connected directly to the Romanian case.

1. During the National student Conference **"INNOVATIVA", 7th Edition**, held between 09 - 12 May 2018 in Oradea, the Nextfood project, Romanian case idea and the project staff from University of Oradea were presented to staff and students from 6 universities from Romania and Poland.

2. The second presentation of the project was on 16.07.2018 when the project was presented to a number of 32 persons. There were Highschool teachers and students, University of Oradea teachers and students, staff from agrifood related public institution and stakeholders from the private sector.

2. The third event related to the project was a presentation made by dr. Timar Adrian in - TransTisza Agriculture Days - Conference in Debrecen, Hungary on 5th – 6th September 2018, with the occasion of 150 years of agrifood academic education. The presentation was focused on the development of an innovative product - **Using of natural additives in the meat processing** and was supported by NextFood project.

3. During the period 28.06 – 09.07. 2018, a team of seven students - that are involved in the NextFood projects and Timar Adrian attended the **ummer School "Fall in love with Polish food"** organized in the frame of CEEPUS network coordinated by the University of Oradea through its coordinator Timar Adrian. The Summer School was very important to open new horizons for the students from the University of Oradea in different learner cuisine aspects and foodstuff from other regions.

4. During the National student Conference **"Ecotrophelia" 7th Edition**, held between 31.10 - 02.11.2018 in Oradea, there were presented case studies on food innovation by students coordinated by academic staff from different Romanian universities. It

became relevant why it is necessary the Romanian case in order to provide homogenous developing teams, with common concerns, complementary abilities and diversity of thinking.

5. 10th Anniversary of Students Scientific Group of Food Technologists “FERMENT” and 7th International Meeting of Young Food Technologists held in Rzeszow, between 19 – 21 October 2018. Timar Adrian presented the necessity of food innovation in order to provide food with higher degree of consumer satisfaction for avoiding food wasting.

6. Field trip on the 28th of November with some of the students involved in the Nextfood Project at Recas Vineyards, Arad county. The students had the chance to visit the vineyards and observe the technological process used by the company. They also found more information about the brand and wine varieties produced by the vineyard. The field trip ended with a degustation of three varieties of wine in the wine cellar of the company.

7. During December 13 – 15, the International Conference of Young Scientists Innovativa 2018, 8th Edition was held in Oradea, while there were presented new approaches in foodstuff preparation like slow cooking, using natural extracts, fusion cuisine combining of agrifood raw materials by students from Romania and Poland. Among the participants there were members of the team involved in project. During this conference, Timar Adrian, the organizer of this event, presented the initiative of ISEKI 2019 Sustainable Supply Chain International Student Competition Game but because of the little number of master students present, there was no team from Romania registered.

8. A team of students - Micle Loredana, Farcut Madalin, Kanalus Laura, Goian Madalina and teacher Timar Adrian attended a training for Sensory analysis of sweet wines in Vinnicky, Slovakia between 04 - 08.02.2019 in order to have an overview about professional foodstuff sensory analysis.

9. Organization of a kick-off workshop during the period 13-14.03.2019 to explore the shifts needed in order to make the transition to experiential, active learning and for allowing time for individual and group reflection, as well as for plenary discussions.

10. Informal meetings with a large number of stakeholders from public and private sector were also conducted in order to have an overview about the potential interested stakeholders that will be involved in the case. In this way there was developed an interesting approach - it will be developed a website that will facilitate the contact between students, teachers, stakeholders on the following topics : joining on research teams, internships at the students and stakeholders requests, jobs, participating in different events related to agrifood sector - like fairs, conferences, workshops, summer or winter schools and valuable databases with relevant references. This will help a lot the Romanian case and the progress of the website is significant. One stakeholder already paid 1500 lei for this action. Timar Adrian will coordinate and put into practice this idea.

II. Envisioning the intended shift

The learning arenas that have been mentioned by the participants during the workshops are: a multi-media rooms, labs for each specific disciplines (e.g. sensory

lab, for micro-production), on-line platforms, didactic farms, reflection rooms, event rooms, labs/facilities to be used at the premises of the stakeholders in exchange for services, contracts with economic agents, personal opinion of the students, analogies, adaptation of curriculum to the current situation

Teaching aids – softwares, apps, smartboards, specific furniture/equipment, ppt presentations, quizzes, serious games (board/digital games), portfolio, projects, innovative technologies

The intended shift could be accomplished by:


- real connection with the labour market – including the adaptation of the theoretical aspects included in the courses
- fiscal advantages given to companies in order to accept students for internships
- production platforms within universities – education farms
- to give up on bureaucracy
- interconnection of companies with schools, universities
- lack of strategy in education
- making the shift to a different learning environment
- taking part in extracurricular activities
- assessment of teachers according to relevant criteria
- to take into account the students' voice
- infrastructure for practical activities
- compatibility within the members of the learning community and availability for collaboration
- the use of key students
- the application of action learning methods starting with primary/gymnasium education
- to stir the interest and curiosity in research
- more trainings of this type
- regulations regarding the relationship between trainer versus companies
- applying new methods of learning/teaching
- reflection on the information/process delivered

III. Determining what it would require to make the intended shift

What would it require from: The learners, The facilitators, The institutions, Other stakeholders

Learners – dedication, interest, motivation, perseverance, involvement, open to interconnection, to become idea multiplying agents, practical solutions to obtain innovative products, passion, ambition to finish one project, research curiosity, desire to evolve.

Facilitators – dedication, good background, valuable topics to be discussed, qualitative human resource, application of suitable methods (brainstorming), passion, the desire to change something, to exploit the assets/competences, creativity of the students, openness to new methods of learning/teaching; openness to teach by using practical methods, stimulate the experimental learning; to be actively involved.



Institutions – to provide adequate infrastructure, financial resources, introduction of at least one year of practical activity, to initiate and get involved in more common projects so that they should become active partners, to be more flexible in making decisions on the change of curriculum and syllabus.

Other stakeholders – involvement, interconnection, good human resource, compatibility with other members of the community, material support to support the improvement of the innovative ideas produced by students and facilitators; support for quality control of products (authorized institutions), availability, passion, team work, the desire to change something.

Supporting forces

- relaxed and informal atmosphere, all the factors involved to be brought together,
- dialogue within an interactive group,
- time for discussions, analysis, exploration and reflection in the case of the students
- material/scientific/technical support from stakeholders and facilitators
- desire to change something

Hindering forces

- lack of time for reflection due to the difficult and bulky syllabus/curriculum
- lack of communication between the actors involved
- poor infrastructure
- some teachers that are stucked in old practices/methods/information
- our educational system doesn't have the strings to be pulled in order to implement the action learning concept

IV. Planning of implementation

- preparing the materials for the courses (meeting of facilitators and stakeholders) - continuous preparation
- establishing the timeline of the courses(meeting of facilitators) – 10.04.2019
- organization of a field trip to a partner company – 06.06.2019
- preparation of the first course – date, place, participants; analysis of soft/professional skills (quizzes), selection of methods to establish the teams and project topics – 15.05.2019
- decide upon the quizzes on soft skills and competences; questions within the interviews (facilitators and stakeholders) – 15.05.2019

Overview of key actions

The main key actions before the course starts will be the preparation of materials for the course (theory, a list of topics of interest, bibliography), the organization of a field trip to a partner company relevant for the projects that the students are going to work on; meeting of the facilitators to discuss the materials that are going to be used during the courses (including the Student's learning document, facilitator's documents,

assessing methods, quizzes on soft skills/competences, interviews to be taken, feedback from the stakeholders, etc).

V. Planning the immediate next steps

The next step to be taken is the meeting with all the partners on the 31st of May when the teams will be formed and the projects established. The teams will be formed due to the negotiations between students and it will involve the compatibility with the team but also with the topic of the project. The Meeting will be organized by the facilitators.

The actions will consists in forming the teams, establishing the project topics, assessing the soft skills of the students involved at the beginning of the course and at the end of the course, establishing a list of rules for participants (not to be late, respect for everybody, not to use the phones, penalties for those that are late for 3 times or miss the meetings); Each session will be followed by at least 10 min of reflection and assessment will be applied continuously. Certain documents will be explained and students/facilitators will be asked to filled them in (learner/facilitator documents) after each session. Students will be assisted in this process. Interviews will be taken from students at the beginning and at the end of the course.

Timeline of the course for the next 6 months

31st of May – First Course

6th of June – Second Course

13th of June – Third Course

12th of September – Fourth Course

26th of September – Fifth Course

10th of October – Sixth Course

24th of October – Seventh Course

7th of November – Eight Course

21st of November – Ninth Course

05th of December– Tenth Course

12th of December – Eleventh Course

The rest of the courses will be organized on the principle that there will be 2 meetings/month and they will take place on Thursday. Due to the fact that the students will have period of holiday in December-January and after that they are going to have an exam session, we will need to agree at that moment on the right weeks and days of the courses.

3.3 Ethiopia

3.3.1 Initial planning:

I. Exploring the present situation in the case

The government of Ethiopia designed agricultural transformation strategy in two phases to help accelerate the growth and transformation of Ethiopia's agriculture sector (<https://www.ata.gov.et>). To support this strategy the government designed a new field level extension service delivery approach by establishing Farmers Training Centers (FTC) since 2002. FTCs are stationed at each. FTCs are administered by management committee with 7-10 members composed of representatives from extension agents, youth association, cooperatives, women association, finance administrators chaired by head of Kebele administration office. The management committee is responsible for planning, implementation and evaluating the performance of the FTC activities. The FTCs are appropriate platforms to involve farmers, students, researchers and development workers to work together for a common goal. Despite the huge potential of FTCs as learning platforms and innovation hubs, such potential has not been utilized to the extent that it can be used to design new education and training curriculums in higher education programs.

Mekelle University, the college of Dryland Agriculture and Natural Resources has established a new MSc program in Agroecology and sustainable Development in collaboration with NMBU, SLU, and Uganda's Marty's University since 2009. The purpose of the MSc program in Agroecology and Sustainable Development (AESD) is to establish an action-orientated, dynamic, creative and interdisciplinary education and training programme that interacts across farmers' practices, development work, extension, education and research within the area of agroecology and sustainability. This focus is chosen because one of the bottlenecks identified was that the present formal agricultural education and training sub-sector in East Africa is not well designed to deliver meaningful knowledge, skill and attitudes towards ensuring sustainable agriculture and environmental management based on local societal needs.

When the education system under this program was evaluated by the workshop participants, it was found that the teaching learning process is lecture based, limited to class rooms and the trainers are lecturers than facilitators of learning. Therefore using the FTC platform and small scale farmers farms at Tabia level is expected to help students learn better from the experience of farmers and their own experience of the real farms. The inputs from the FTC platform and experiential learning will also help to develop successful education program in the agriculture sector.

II. Envisioning the intended shift

An outline of the desired course/program

The system of interest for the Ethiopian case was limited to students learning under the MSc program in Agroecology and Sustainable Development after the discussion during the kick off workshop. The MSc program has two semester course work and

one year independent thesis research work. Two courses in the existing curriculum were identified to be the point of entry for experiential learning for students and educators together at the real farm situation.

The course selected for this purpose was Agroecological Innovations and Practices I for the first semester. This course is designed to help students learn from real life small scale farm experience and relate their knowledge and skill to address real life situation by using farming systems approach. To maintain appropriate level of complexity the students and educators together will select more than one farm as single farm owned by individual farmers may not be complex enough to represent the whole farming system situation. Students will carry out Observation (transect walk), Focus group discussion (Dialogue with households), Presentation at FTC, Joint action planning, Implementation (selected cases) and Reflection. Detail student activities, topics covered, relation with other courses of the first semester and hours planned for the delivery indicated on the course description annex. The second semester courses are also arranged in similar way with the first semester courses with the experiential learning taking place under the course Agroecological Innovations and Practices II. The second semester course will use the food systems approach to address sustainability issues in the agriculture sector.

Specific ideas for moving from lecture hall, lecturing, syllabus, textbook etc. to peer learning, a diversity of learning arenas and teaching aids etc.

The course design and arrangement with other courses indicated above is made to take place at the FTC and farm fields is intended to improve learning arena from lecture hall to real life farm cases, from lecturing to observation and group learning through reflection, from text books to diversity of learning aids in the farm in the presence of farmers, educators and other stakeholders. The present situation of the teaching learning process in the program was evaluated by the workshop participants according to the indicated intended shifts (refer the feedback annexed with this report Q4 &5). All the courses will identify cases from this case visit and part of the course delivery will take place for all the courses in the natural setting. In this context the FTC will be a learning platform for the intended shift in the agricultural sector.

III. Determining what it would require to make the intended shift

What would it require from students?	What would it require from facilitators?	What would it require from institutions?
Shared vision	Experience in the approach	Capacity building for staff and students
Love for the profession	Pedagogical training	Researching the weakness and strength of the program
Being active participant (2)	Dedicated	Create conducive environment
Dedication	Making sure that there is shared vision	Provide adequate resources (4)
Taking responsibility	Entertain the needs of all students (2)	Be proactive
Commitment and readiness (3)	Impartiality	Prepare mechanisms for quality assurance (2)

Long term plan	Planning effective delivery mechanism	Create linkage between national and international collaborators (3)
Interdisciplinary oriented approach	Dialogue oriented	Formulate system for recognizing role facilitators
Time management (2)	Create favorable environment	Structure for follow-up
Respect course policy	Time management	Policy (2)
Ready to work with farmers	Doesn't dictate	Flexibility to entertain positive change
Maturity and independent learning	Be able to help interactive learning	Timely revision of curriculums
Self-monitoring perspective	Respect course policy	
Ownership	Manage and shape students to be focused to the problem	
Multiple role (as student, facilitator and evaluator)	Be learners	
	Open mind	
	Knowledge and skill to support group learning	

Supporting and hindering forces:

Intended shift	Supporting forces	Hindering forces
Lecture hall to diversity of learning arena	We have field exposure practice	Extra teaching load on educators/facilitators
	The field arrangement can be made by integrating it with other courses	The intended shift requires additional budget for implemented
	The intended shift is inline with the Quality assurance activities already under implementation	Previous habit of the educators and students (comfort zone)
	Lecture can be done at night while in the field	Education policy is based on syllabus
		Handling evaluation under the diverse learning arena case
Lecturing to peer learning	The pedagogy supports the shift	Teachers have limited exposure on handling peer learning
		The mindset of educators about lecturing as comfort zone
		Considering peer evaluation as part of the assessment

Syllabus to diversity of learning resources	There is a beginning in this shift but we have to make sure that the students are benefiting from the diversity of learning resources	Motivation of students
Text book to diversity of learning aid	There is a beginning	Motivation of students is affected by the job opportunities which requires only grade points not the skills they have
		Technical facilities /infrastructure/
Written exam to diversity of assessment methods	Module based teaching design	Motivation of students
		Institutional set up
		Commitment of educators/teachers
		University policy 50% continuous and 50% summative written exam
Lecturer to learning facilitator	Good experience can be gained from the ATVETs	Being lecturer is comfort zone for students and teachers
		Teachers have poor experiences of being facilitator

For further reference the recommended solutions for improvement suggested by the workshop participants for each shift are indicated in the workshop feedback report document Q5.

IV. Planning of implementation

S.N	What (Description of activities)	When (timeline)	Who (Implementer)	Where (Place for action)
1	Need assessment	April	Steering committee	Across Tigray Region
2	Tracer study	April	MU, Alumni, Employers	Ethiopia, mainly Tigray
3	Curriculum revision and development (4)	May-June	MU (IPS, CoDANR-QA, NEXTFOOD Project team, DARE), farmers, students, BoARD (FTC), ATVETs	MU

4	Preparation of human, material & financial resources and facility improvement (2)	April-September	Steering Committee	MU
5	Create linkage & coordination with stakeholders and mobilize all stakeholders (4)	April-September	MU (IPS, QA, NEXTFOOD Project team, DARE), farmers, students, BoARD (FTC), ATVETs	Across Tigray Region
6	Screening of trainees	August	College stakeholders with	Various localities
7	Assignment of multi-disciplinary facilitators & provision of refresher training	April	MU/IPS, NMBU	MU
8	Supporting and readying FTCs for action/implementation (2)	April-September	MU, TARI, ATA, BoARD	Selected FTCs
9	Student practical assignment: peer evaluation (giving weight to this)	April-July	Facilitators & learners/students	MU, FTC sites
10	Provision of field works through inter-disciplinary manner at field to enhance action learning	May-June	Facilitators, Learners/students	MU

V. Planning the immediate next steps

S.N	What (Description of activities)	When (timeline)	Who (Implementer)	Where (Place for action)
11	Training to facilitators & students	April-September	MU (IPS, QA, NEXTFOOD Project team, DARE), farmers, students, BoARD (FTC), ATVETs	
12	Mentorship for the students in the FTC	April-September	MU (IPS, QA, NEXTFOOD Project team, DARE), farmers, students, BoARD (FTC), ATVETs	
13	Preparation of handbook	April-September	MU (IPS, QA, NEXTFOOD Project team, DARE), farmers, students, BoARD (FTC), ATVETs	

14	Active supervision (within 1 year)	April-September	MU (IPS, QA, NEXTFOOD Project team, DARE), farmers, students, BoARD (FTC), ATVETs	
15	Avail facilities (suitable smart classes, lab) & resource persons (instructors)			
16	Teaching-learning process-practical with FTCs & farmers			
17	Exposure visit for instructors & students (2)		Project, CoDANR	
18	Prepare cases & FTCs for the teaching-learning process			
19	Student briefing & village stay before class starts			
20	Prepare teaching materials (modules), audio & video and avail materials for students (2)	2 nd semester of 2019	Project, CoDANR, Department	
21	Develop a system of monitoring and collecting data from students			

3.3.2 Reflect and plan again

I. Recapping the case activities

The «What», «How» and «Why» questions about the Ethiopian case was updated

The what? (Educate the next generation (MSc students) in the agrifood system)

- Eventhough the learners as planned initially were planned to be students at MU and ATVET, Extension agents, Researchers, Farmers and other partners working at the FTC, it was decided during the workshop that the main system of interest should focus on MSc students at MU under the agroecology and sustainable development program. This will help to focus on the students learning but without limiting other partners to learn from the practices.

The How? (Action based learning)

- FTCs were agreed to be the point of entry/platform to get multiple stakeholders involvement during action learning but the target for change should focus on farmers individual farms. Sufficient level of complexity should be maintained as single farm may not represent the general agricultural practice/diversity. Students will work on selected individual farms.
- Students will make real life experiences from individual farms as projects and reflect on their practice together with facilitators and FTC stakeholders. In addition it was planned to give chance for students to do their thesis work using action research approach

The Why? (Improved sustainability)

- I. course selection and restructuring of the action based learning approach updated (attached course description note)
- II. New idea for doing action based learning identified for next year planning
- III. Our existing education program evaluated based on the intended shifts and recommendations provided
- IV. Better understanding of the ethiopian case for the participating stakeholders, MU team and NMBU team

II. Assessing the shifts

Assessing the shifts from 1-10

	1	2	3	4	5	6	7	8	9	10
Lecture hall		x	x	x			x			Diversity of learning arenas
Lecturing		x	xx	x						Group reflection peer learning
Syllabus		x	xx					x		Supporting Literature
Textbook			xx	x			x			Diversity of teaching aids
Written exam		x		x	xx					Variety of assessment methods
Lecturer		xxx	x							Learning facilitator

Additional shifts

Target /focus	From	To
MSc Students	Passive receivers	Active contributors
	Individualists	Collaborators
MSc Student thesis	Survey based disciplinary individual work	Action based group research
Other stakeholder involvement	MU being the only responsible educator	Shared responsibility with other stakeholders
MSc student attitude	Passive job seeker	Innovator in the sector
MSc course nature	Time static	Flexible program

Discussion notes from workshop participants

The participants explained that there is low student motivation to be engaged in demanding activities during the teaching learning process. In addition the education guide in the university may not be suitable to handle such demanding activities. However the group also agreed that the final goal of the University is also similar with the NEXTFOOD project goal that implies it entails through discussion with the management of the university in the coming focus group discussions.

III. Determining the supporting and hindering forces

The hindering and supporting forces are already discussed under the initial planning phase section 3.2. No ranking of the hindering and supporting forces was done due to time constraint.

IV. Planning of how to build on the supporting forces and how to overcome the hindering forces

S.No	Shifts	Why low rate<5	Recommended solutions for improvement
1	Lecture hall To Diversity of learning arena	<ul style="list-style-type: none"> • Most course are delivered in class room • Shortage of budget for excursion • Prevailing practice • Low practical oriented teaching approach and most of the activities are accomplished in class • Time allocated for lecture is more than the practical • Resource limitation 	<ul style="list-style-type: none"> • Revision of course contents to include regular visits for the courses that require • Budget allocation (transport, allowance) • Experience sharing of instructors with other institutions that have experiential arrangement (for bench marking) • Course syllabus revision to do experiential visit • Integrate courses for village stay • Decide which content of the course needs what
2	Lecturing to Group reflection, peer learning	<ul style="list-style-type: none"> • The policy dictates to be student centered but in practice it is more of teacher or lecture based • It is one way communication • Most courses are delivered by lecturers • Attitude of instructors considering students as recipients of knowledge only • Time budget for the courses • Low exchange of assignments among the learner • It is like tradition and easy to do 	<ul style="list-style-type: none"> • Apply participatory approach, enforce reflection approach, use variety of approach Eg. two way communication • The delivery system has to be improved so that it can allow students to be engaged more on practical aspects • Staff exchange on experience sharing • Diversify assessment methods • Train instructors to be facilitators
3	Syllabus to supporting literature	<ul style="list-style-type: none"> • Most of the delivery method is based on syllabus • Use syllabus as culture • In adequate course coverage 	<ul style="list-style-type: none"> • Make revision of the syllabus and teaching materials • Continuously apply flexible learning with technology • Providing supporting literature and encouraging group presentation and discussion

		<ul style="list-style-type: none"> The university policy (student compliance to it) 	<ul style="list-style-type: none"> Syllabus revision Training for staffs
4	Textbook To Diversity of teaching aid	<ul style="list-style-type: none"> It is based on lecture note/handouts in soft copy Exams are based on handouts/materials provided/ Reference materials are not in our context Student interest is decreasing Facilities are not available 	<ul style="list-style-type: none"> Providing video clip, diagrams and field observation Prepare contextual reference materials Diversity of teaching method (Seminars etc)
5	Written exam To Variety of assessment method	<ul style="list-style-type: none"> The policy says 50/50 continuous/final which is all written It is a tradition in the university Big class size 	<ul style="list-style-type: none"> Reducing weight given to written exam Focusing more on field work Written exam 30%, practical field work 35%, filed assessment report 35% Include diversity of assessment methods (oral exam, field assessment, open book exam)
6	Lecturer To Learning facilitator	<ul style="list-style-type: none"> Because of the back ground of the learners and experience of the teacher in this way 	<ul style="list-style-type: none"> Applying variety of learning approach Encourage peer to peer learning Mobilize and initiate two way communication

VI. Planning the next steps

The following points agreed to be implemented by the project team.

Key activities	Time of implementation	Responsible body
Identify the skill and knowledge gap observed under the former graduates	May-June	Project team and Department of ARE
Inventory of the skills needed by the farmers	May	Project team
Arrange village stay project work at the FTC together with all course instructors to work on real life problems	June	Project team and course instructors
Discussion with all course instructors about the approach of NEXTFOOD	June	Project team
Provide training to the instructors about being facilitator than lecturer only	July	Project team and IPS
Support current students to work on action research thesis	July-August	Project team and course instructors

Curriculum revision	August	Project team, Department of ARE and QA office
Create multi-stakeholder platform to discuss the approach and outcomes	September	Project team
Prepare handbook for the 2019 fall academic program	July-August	Project team and Department of ARE

3.4 Austria

3.4.1 Initial planning:

I. Exploring the present situation in the case

History of the case

Our case is a series of international competitions for teams of food science students. In each competition, students aim to identify, design and develop solutions and ideas relevant for the food industry focusing on the improvement and innovation of sustainable food production and processing and quality and safety of foods.

The first competition was a part of the European Food-STA project and took place in spring 2017 with no specific topic. The second competition was organized by ISEKI-Food in spring 2018 and the topic was to “develop strategies and actions aimed to the enhancement of shelf-life of foods dealing with formulation changes, innovative processing and packaging, distribution and logistics.” A third competition in spring 2018 was a part of the SEA-ABT project and asked students to “find the best solutions for product or ingredient development on creating “Healthy beverages from waste utilization of food” on one specific product – and/or ingredient.”

All competitions were organized in the same way. Student teams applied on-line, they attended a series of webinar lectures organized by the Scientific Board of the competition and they submitted a final project comprised of both a written report and an oral presentation.

II. Envisioning the intended shift

Our vision is to increase the active involvement of students. We aim to include students in the planning of the course (e.g., webinar topics) and to increase their active participation (e.g., they give presentations in addition to listening) throughout the length of the course. In addition to improving their technical and practical scientific knowledge, we envision a course which also improves soft skills such as team work in a competitive international environment, complex problem solving, creativity, cooperation, presenting oral and written scientific communications, working in a virtual environment.

An outline of the desired course/program

A one-month open call for teams to register advertised via NextFOOD, ISEKI-Food and other networks. During the Competition, all team members will be required to participate in 6 webinars as follows:

1- Introduction to the Competition (lead moderator: Katherine Flynn and Line Lindner).
Week of 25 Feb

Review of requirements for the competition course. HW for Webinar 1: prepare a short presentation. HW for webinar 2: send 3 suggestions for a webinar topic, deadline of 1 week.

2- Webinar 1 (lead moderator: someone from UNIBO). Week of 18 March

ORGANISER NOTE: Topic 1 webinar is Student Presentations. Each team gives a 5- to 10-minute presentation on the practical experience the members have in the aquaculture chain e.g. an internship they did, a visit to a company, volunteer activity. If no one on the team has any practical experience, should we make it obligatory? That is someone on the team or all members, visit a site, in the weeks between the Introduction to the Course and Webinar 1. Organisers will prepare an outline for the Student Presentations.

3- Webinar 2 to be defined (lead moderator: someone from UNIBO). Week of 8 April

ORGANISER NOTE: Topic 3 webinar is 'In The Field'. One or more companies present a case study in which they explain a process- or product-related problem and how they solved it. This should perhaps be filmed beforehand.

4- Mid-term review. (moderated by Katherine Flynn, Line Lindner and someone from UNIBO). Week of 22 April

ORGANISER NOTE: Each team meets individually for 30 minutes (to keep their solution a secret and thus keep the spirit of a competition) with 2 or 3 organisers in order to review progress and pose questions. Teams come to the 30-minute webinar with a draft presentation. IMPORTANT: This means several webinars for the organisers, one with each team. A lot of work. Can we do this? Should we decide on a maximum number of teams?

ORGANISER NOTE: This week will also be a Focus Group from NextFOOD WP1 at IFA. Perhaps there is a way to link these events?

5- Webinar 3 to be defined (lead moderator: someone from UNIBO). Week of 6 May

ORGANISER NOTE: Topic 2 webinar based on student suggestions. HW after Introduction Webinar is for each student to submit 3 ideas for a webinar topic.

6- Webinar 4 to be defined (lead moderator: Katherine Flynn). Week of 20 May

ORGANISER NOTE: Topic 4 webinar is answers to student questions, submitted anonymously as HW. Questions relate to soft skills e.g., giving a strong presentation, writing a convincing report, as at this time the substance of the project should be complete.

June 1. Projects are due

Week of 10 June. IFA Virtual Workshop in Sustainable Aquaculture

Specific ideas for moving from lecture hall, lecturing, syllabus, textbook etc. to peer learning, a diversity of learning arenas and teaching aids etc.

- Integration of practical experience of students (internship, volunteer activities in lab/farms/processing plants, etc.) at different levels of the aquaculture chain (production, quality of products, etc.) along the competition game: if it is not possible for all students to have a practical experience in the different fields, each student could make experience in a specific field and then share/exchange observations with the other students of the team

- Webinars should be designed in order to respond to specific requests from students. Suggestions:

- to present in the field webinars, addressing both the process and the products, on case studies selected by the companies to explain/show the problem solving approach to the students;

- a wide generic topic could be identified, then the specific topic dealt with in the webinar will be decided on the basis of comments and requests coming from students participating in the competition;

- to ask students to select three topics for the webinars, or, as an alternative, to suggest students to fill in a list of questions which need to be answered during the webinars;

- to verify with UNIBO the possibility to have specific trainings or staff supporting the webinar organisation.

- Interview industries on what they like to share with students to support them in filling the project

- The involvement of “persons of interest” from industry in the competition game should be always taken into consideration not only for the construction of webinars but also as a support of student teams (for example each team could have an online forum with participation of the academic mentor and an industry representative)

- The final award should stimulate a real interest in student participating in the competition: not only money (if any) but mainly opportunities to communicate the contents of winning project to industry and/or international events in the field of aquaculture

III. Determining what it would require to make the intended shift

We did not cover this directly at the planning meeting due to time constraints. Based on other discussions at the planning meeting we make the following generalisations:

What would it require from:

The learners, Learners need to be actively involved in all meetings and not distracted by phones or computers. Learners should work together, listening to their peers and producing joint work. Learners need courage to take a chance and respond to a relatively open-ended assignment.

The facilitators, Facilitators need to listen to the learners early in the organization of the course and avoid over-planning each step of the competition. Facilitators should be open to the criticisms of the learners and be willing to incorporate changes based on this. Facilitators should organize a place and time for learners to give input on the course and how to improve it.

The institutions, Institutions should be open to giving traditional credits to students participating in a non-traditional course.

Other stakeholders, Other stakeholders should be willing to modify their traditional styles of presentation (talking head) and incorporate ideas from the facilitators.

Supporting forces, Colleagues who are participating in the NextFOOD project and who attended a workshop in Visionary Thinking. Engagement with facilitators of other cases in NextFOOD.

Hindering forces, Colleagues who have been running the course before using traditional methods. Especially difficult when these colleagues are at a high professional level.

IV. Planning of implementation

What needs to be done when and by whom? Overview of key actions, Timeline

TIMELINE OF TASKS AND PEOPLE

DESIGN OF THE COURSE:

Submit names for Scientific Board, AD and MF submit 3 or 4 names to LL and KF: November 2 2018

7 or 8 people total: 1 student, 2 or 3 industry, 2 or 3 faculty, 2 project administrators
Group ideas from Bologna, AD and MF send to KF and LL: **October 26 2018**

Summary of Bologna meeting and IFA competition, LL and KF send to AD and ML: **November 2 2018**

Webinar leaders decided, AD and MF send to LL and KF: **November 2 2018**

Can IFA sponsor a cash prize for winning team, LL to GS and Christer: **October 26 2018**

Send sponsorship invitations to others: **November 30 2018**

Can UNIBO offer a free course to the winning team, AD: **November 20 2018**

Identify a conference where winning team can present, AD, MF, D, LL: **October 26 2018**

ADVERTISING & IMPLEMENTING THE COURSE

Current call text is sent by LL: **October 23 2018**

KF, AD, MF comment: **October 30 2018**

Call text is finalized: **November 20 2018**

Leaflet announcing Competition **November 25 2018**

Call opens: **January 2019**

Evaluate our protocol for NEXTFOOD deliverable: **Early February 2019**

Call opens:	January 2019
Students start competition/Introductory webinar	mid Feb 2019
1st Webinar	late Feb 2019
2nd Webinar	late March 2019
3rd Webinar	late April\early May
4th Webinar	late May
Competition ends	mid June 2019

V. Planning the immediate next steps

This is included in our timeline of step 4.

3.4.2 Implementation

I. Facilitators' and learners' reflection documents

The first cycle of our case will be finalized on 14 June 2019. We don't have these documents yet.

Here is the format of our reflection documents:

For learners:

- What did you expect to learn from participating in this on-line competition? (we will ask this in the beginning in cycle 2 of our case)
- In what ways did your practical knowledge of sustainable aquaculture change?
- How did you find the open-ended, problem solving approach to the competition?
- In what ways did your skills in teamwork and cooperation change?
- If you were to participate in another on-line competition in Sustainable Food Systems, what is one specific thing you would like to see included?

For facilitators:

- Which skills did you improve by participating in the organization of this course?
- Did we successfully integrate the NextFOOD action learning model into the course?
- Did we give adequate instructions/information to the students to help them participate in an action learning course? How could we improve our instructions?
- In what way did the student projects indicate that students were active participants in the action learning course?
- If we were to organise another on-line competition in Sustainable Food Systems, what is one specific thing we should include? And how should we include this?

II. Learners' course evaluations and feedback from key stakeholders

After each webinar, learners completed a survey with the following questions:


On a scale of 1 to 5

- Rate the audio and visual quality of the webinar
- How useful was the idea of the (topic) for the webinar
- How engaged were you during the webinar

In a couple of sentences

- What was the best part of this webinar?
- If you could change one thing about this webinar, what would it be?

After the competition is over, learners will receive a survey with the following questions:



On a scale of 1 to 5, rate the quality and usefulness of the following. You may add comments under each

- the definition and description of the topic of the competition
- the introductory webinar
- the topic webinars
- the project review
- the final virtual conference

In a couple of sentences, describe

- The impact of your experience in the competition for your current career as student
- The impact of your experience in the competition for your future professional career as a food scientist
- What you would tell a fellow student about your experience in this competition

Feedback from key stakeholders

Members of the Scientific Board and professionals who gave webinars during the competition will receive a short questionnaire as follows:

In a couple of sentences, describe

- How this competition was different from other learning/teaching experiences you have had
- The best part of your participation in this competition
- If you could change one thing to increase 'active learning' by students participating in the competition what would it be?

III. Learners' self-assessment of competences

We did not do a self-assessment at the start of the competition. We will do one in cycle 2.


At the end of the competition, we plan to ask the following:

On a scale of 1 to 5 rate your competence in the following areas:

- Practical/technical knowledge in sustainable food supply chains
- Practical/technical knowledge in addressing sustainability for food industry
- Identifying and solving problems/challenges in sustainable food production
- Teamwork, cooperation, producing a project as a group
- Working in a virtual environment with colleagues in distant locations

IV. Mapping the learners' learning goals and competence development

We have a Project Review session (next week) where each team meets with some or all of the facilitators. Here we will see a draft of the team project and answer team member questions. We will also do a brief interview with the teams as follows:

- 
- Why did you choose to participate in this competition? What did you hope to learn from it?
 - What skills/competences have you trained or improved by your participation in this competition so far?
 - What do you expect to be the major outcome from your participation in this competition?

V. Reflection sessions

We did not incorporate reflection sessions with the learners during our course. We will have one at the Project Review next week and another in late June/early July when our case is over.

3.4.3 Reflect and plan again

The Reflection Workshop will take place in late June/early July. Our case finishes on 14 June 2019.

3.5 Greece

3.5.1 Initial planning:

I. Exploring the present situation in the case

Agricultural education in Greece suffers from a series of drawbacks, which can be classified in the following categories:

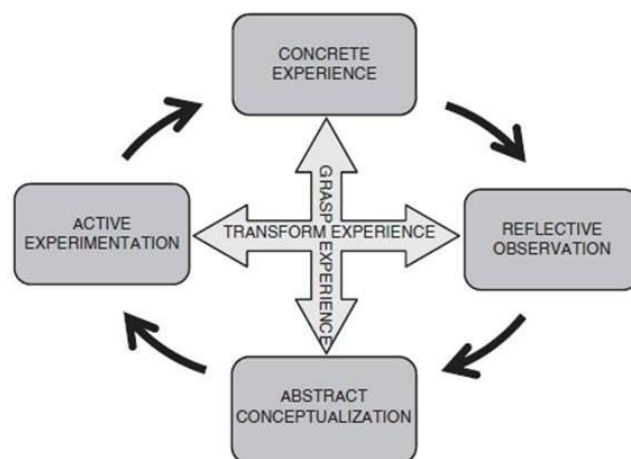
1. There is an overemphasis on technical knowledge, whereas the role of soft skills is underestimated.
2. Curricula are designed upon a “how-to” philosophy. Students learn specific ways to overcome problems associated with, for example, insect attacks, plant nutrition, selection of appropriate fertilizers, farm animal management, reproductive management, or animal breeding. Nevertheless, the degree to which they develop integration skills, synthesis competencies, and system thinking is questionable. Under such conditions, students have limited opportunities to learn how to learn, especially from interacting with practice.
3. Connections between agricultural universities and the agrifood sector are still loose.
4. Although agricultural universities in the country embrace the issue of sustainability, by developing courses or programs on sustainable agriculture, the pedagogical practices used are not tailored to the complex nature of sustainability.
5. Teacher-centered approaches, where the focus is on the “transfer of knowledge” are the common practice. Learner-centered approaches, which emphasize collaborative production of knowledge, are scarce.

Agricultural universities are viewed by some academics as places of concentrated learning. Hence, universities have underestimated their role as agents of change in the agrifood sector of the country.

II. Envisioning the intended shift

The program that is expected to be developed is focused on experiential and action learning, as it is described by Kolb and Kolb’s (2009) seminal work (see Figure below). Action learning as a pedagogical technique is a continuous process of learning and reflection with the support of a group of colleagues, working on real issues. Based on this approach, the desired program will include “critical reflection” within learning sets,

linking the world of learning with the world of action, modifying students' learning environments. Different learning interventions are required in order for the students to develop their skills and strategies. In this program, action learning will take place in real farm settings (farms, stables, agricultural product processing units, and the entire agrifood system, in general) where students and other actors and stakeholders will be involved, functioning as cooperative structured peer-learning groups or learning sets. Learning sets are small groups (consisting of typically 3±6 members), usually working semi-autonomously organize, plan, undertake and implement negotiated learning activities. In these groups, apart from students, farmers and advisors will participate, while also market actors can have active participation. Regarding students' assessment, this will include peer teaching (students teaching other students) and integrative essays (involving the synthesis of the experiential and theoretical) which require students to reflect on, consolidate, relate and communicate ideas that require, by definition, deeper learning processes for academically successful outcomes.



The four-stage cycle of experiential learning

The main ideas concerning the shift from conventional learning methods to action learning designs presented by workshop participants are listed below:

- Motivation to act. Teachers must create the appropriate conditions for effective learning
- Reduction of students' number could be the solution for involving them in outdoor activities
- Experiments, simulation techniques and learning in real farm settings must be added in teaching methods

- Teachers should incorporate active and participatory methods since agriculture is a very vivid field and learning in real farm conditions is the best practice for the achievement of learning goals
- There must a gradual reduction of the lectures, giving in parallel emphasis on techniques that student will be the focal point of educational activities

Syllabus must be updated with contemporary knowledge and research results, adapted to the needs of each institute


III. Determining what it would require to make the intended shift

What would it require from:

The learners: Students' should increase their active participation and their curiosity, guiding to a fruitful reflection. They must also choose study program more consciously and check if it has vocational prospects. Their willingness to learn instead of just acquiring a degree is a really important factor that is expected to contribute to the shift. They should step out of the comfort zone by taking risks, asking questions, taking initiatives, etc.

The facilitators should open up for the reverse flow of knowledge, taking into consideration that the hierarchy of their class (teacher as the authority, student as a learner) could be changed. Within this diversified learning environment learning activities could be based also on input from students, increasing thus the co-creation of knowledge. In this context, teachers can have more time to communicate and contact with students and with each other and can also change learning activities, becoming facilitators and evaluating the whole process. Teachers should also change the way of thinking and teaching, while there is a need to come up with innovative methods and techniques in order to improve their teaching skills.

The institutions should be intended to change their mentality and organize "flexible" studies. However, in order this change to be realized, particular means must be provided (facilities, time, equipment, money, training for facilitators, technical support), which are necessary for facilitators to succeed. Another crucial parameter that must be taken into consideration is the adoption of a stricter strategy concerning the number of students they accept (reduction of students' number in order to improve the services offered). Moreover, less bureaucracy is needed in order to make easier the processes inside the institution (for example, the organization of educational excursions). A very



important issue is finally the lack of connection between the real economy and academia, not allowing thus the students to have a more complete and precise picture of the situation outside their institution.

Other stakeholders could host students so as to familiarize themselves with the different “worlds of work” and to offer them opportunities for learning in real work settings. Moreover, market actors could closely collaborate with academics in order to inform them about the real needs of the current labor market. Finally, various stakeholders can sponsor research activities undertaken by ATEITh.

Supporting forces: students’ strong tendency towards hands-on learning activities, available infrastructure for learning in real farm settings, farmers’ willingness to collaborate with ATEITh for research purposes, students’ willingness to take initiatives, students’ positive attitude towards action learning.

Hindering forces: Bureaucracy, dependence on the national educational system, old-fashioned mindsets that prioritize theory over practice, lack of flexibility, and loose connections between academia and labor market.


IV. Planning of implementation

Students must assume responsibility for their learning (participation, timekeeping, attention), spend more time on individual research and homework, and become more motivated.

Facilitators should give more attention to students’ needs, become more active in institutional change/act as a connection between institutions and student’s needs, invest more time in activity preparation, increase creativity. They should make synergies with farmers and build bridges with them in order to help students adopt skills of observation, reflection, and visioning.

Institutions must become more flexible in assessment methods, allow more freedom for teachers to design their courses, invest more time to outdoor activities, and create collaborations. They should also provide more technical support (field instruments, learning facilities) to teachers, the number of whom must be increased so as to cover students’ needs.

Steering Committee of institutions should take care in order for the groups of students to be smaller and be able to practice in the field effectively. New technologies,



appropriate for the implementation of field experiments must be entered, while collaboration between students and teachers and also between teachers and graduates must be encouraged.

Overview of key actions:

- Paying special attention to students' needs
- Enhance students' skills of observation, reflection and visioning
- Incorporation of more effective and action-required (for both students and teachers) assessment methods, including students' self-reports, project development, students monitor their progress and plans, and submit a reflective report at the end of the course
- Synergies with individual farmers, farmers' associations, agrifood enterprises, national and international research institutes, and with all the providers and members of food supply chains
- Frequent communication between teachers and students and continuous guidance of their progress

V. Planning the immediate next steps

To achieve the desired shift, the following steps should be taken:

More opportunities for active learning should be provided to students. To open up such opportunities, exploitation of the available infrastructures is needed. Nevertheless, it is important to use the facilities offered in a way that emphasizes hands-on learning, instead of “moving” the lecture from the classroom to the field. To achieve that, a shift in the mindset of academics is needed.

Theory and practice should be merged. Theory should support practice, and practice should confirm theory. Reflection upon practice should be based on theoretical knowledge.

To enhance reflection, academics should endorse the idea of facilitation. Moving beyond traditional roles is necessary. Moreover, a reduction in the number of students per class can increase the time available for reflection, and the quality of the reflection process.

A more clear focus in group processes of group knowledge construction is needed. Consequently, a shift in the curriculum focus from “one-to-many” diffusion of knowledge to “all together” knowledge discovery processes is essential.

Communication of the NEXTFOOD project's philosophy and results to both academics and students is needed to achieve the desired shift. Moreover, a better connection between ATEITh and actors operating in the agrifood web can open up new opportunities for practice-based learning. AFS can act as a connecting node in such a framework, by facilitating the development of ties with organizations and individual farmers. Hence, as the learning sets will continue to operate within the framework of the NEXTFOOD, a network connecting ATEITh with agrifood supply chain actors will be built.

So, the next steps include:

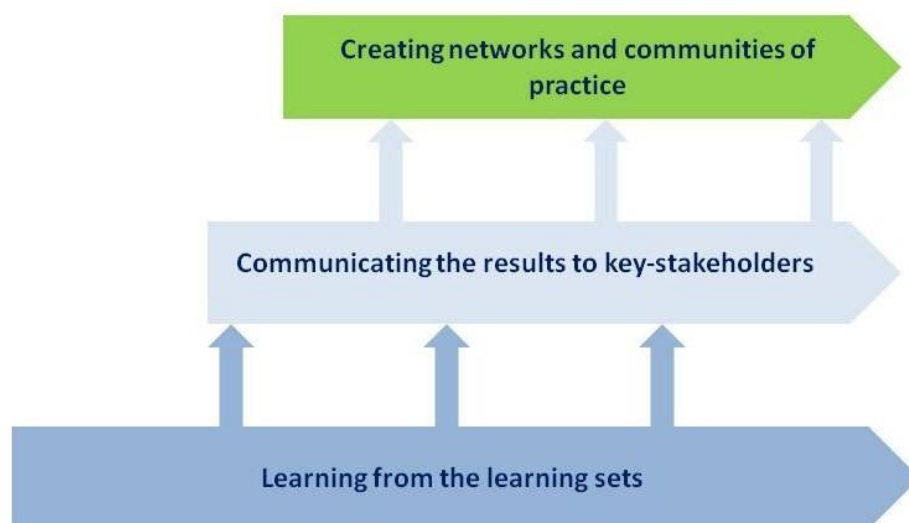
Continuing evaluation of the action learning methodology through data collected during the learning sets.

Corrective actions, when needed.

Receiving feedback from the scientific community.


Diffusion actions, in order to effectively communicate the importance of action learning methodology.

Development of networks and communities of practice, through which the idea of action learning methodology can be disseminated.



3.5.2 Implementation


I. Facilitators' and learners' reflection documents



Facilitators found the experience of knowledge co-creation interesting and effective. Despite the low familiarity of learning sets' participants with the process of collaborative knowledge creation, the procedure led to sufficient levels of reflection and knowledge co-production. At the beginning of the learning sessions some of the participants indicated a tendency to conform in the group, without expressing their opinions. Nevertheless, a positive group climate facilitated these persons to overcome this problem. No isolation phenomena were noted. Interestingly, the collaboration between students and farmers (or student and employee in the case of a food processing company) was highly interactive. Farmers noted that they had the opportunity to better understand agronomists' point of view, and to engage in a different way of thinking. The most important outcome of the process for them was the development of a new synthetic way of approaching problems. The combination of different backgrounds and types of knowledge helped them to better conceptualize some aspects of the issues they face as farm entrepreneurs. In addition, the agronomists and the academics who participated in the learning set easily accepted their new roles as co-learners, despite the fact that in their everyday lives occupy different roles (the role of consultant for the agronomists and that of the teacher for academics). In sum, the experience of the learning sets revealed that participants have the opportunity to reconsider some of their beliefs and attitudes, to redefine their foci, and to learn how to reflect within a group framework. Students were very satisfied with their experience, since they exposed themselves to a new way of thinking. A series of issues were discussed during the first learning sets, whereas a new problem-solving culture started to rise. The dialogue among participants led to the emergence of many new questions, thus facilitating a more holistic understanding of farming- or food-production related issues, not only for students and scientists, but also for farmers. The main concern of participants was to understand the complex cause-effect relations among the components of the agroecosystem, so as to help each other understand the intricacy of agrifood systems. In sum, the learning sets provided all participants the opportunity to re-estimate their values and to understand the crucial role of interpersonal skills in the process of knowledge co-production. Hence, a mindset shift was observed.

II. Learners' course evaluations and feedback from key stakeholders

The evaluation of the process was very positive. Students found fascinating the experience of being members of the learning sets. Domna, one of the students who participated in the learning sets characterized her involvement as a “one of its kind




experience” which offered her “invaluable insights about the way a farm actually works.” Thodoris, another student, noted that “we never got the opportunity to interact with a real producer before.” The adjective “real” – used here to put emphasis – reflects Thodoris’s excitement about the opportunity he had to communicate and collaborate with a person who makes a living through farming. Indeed, students have not the opportunity to closely collaborate with their future clients during the course of their studies. So, they don’t really know the farmers’ needs, goals, and ways of thinking. Trying to find solutions not for but with farmers helped students to better contextualize farming. Moreover, they noted that their communication skills increased. Observational data, however, revealed a lack of self-confidence at the beginning of the learning sets, which gradually reduced. More steps are needed to finally eliminate this lack of self-confidence, and as the group continues to work and students feel that develop new competencies by experiencing professional practice, it is expected that their self-confidence will grow.

Perhaps the most important outcome of the process was that students started to test and evaluate the knowledge they possess in real farming conditions. This way, they developed a better understanding of the ways a farm operates, and more importantly, of the role of the farmer in the agricultural production process.

In addition, agronomists and academics were actively involved in the procedures of knowledge co-production, having thus the opportunity to see their roles beyond the sphere of advising and controlling the learning process. This way, they were exposed to a novel for their learning environment, which creates better opportunities for exchanging and constructing knowledge than traditional, teacher- or advisor-centered approaches. Finally, farmers by voicing their concerns, and by trying to conceptualize problems of their enterprises within the group framework, had the opportunity to express their implicit knowledge, and to be informed about new scientific developments, whereas, they better understand their roles as entrepreneurs and decision-makers.

III. Learners’ self-assessment of competences

Students who participated in the learning sets noted that the process of action learning helped them to increase their communication skills and to familiarize themselves with the process of problem identification. Although students have a sufficient level of technical knowledge, they lack opportunities to interact with farmers, whereas they have little or no experience from working in real farm settings. Their participation in the project was for them an opportunity to enter the “farmer’s world” and to better



understand both the conditions of farm and the environment within which farming is practiced. A student noted that her observation skills increased after participating in the learning set. In fact, the farm is an unknown field for some of the students, so their active involvement in some farm tasks gave them the opportunity to gain new experiences. Moreover, the group reflection process helped students to sharpen their critical thinking skills and to understand the importance of reflection after observing the outcomes of any decision.


Finally, a crucial competency refers to students' ability to extract meaning from their experience and to translate experience into learning. The action learning framework seems able to help students increase these two – crucial for their professional success – abilities.

IV. Mapping the learners' learning goals and competence development

After their participation in the first learning sets, students began to reconsider the importance of developing interpersonal skills and other soft competencies. Although the knowledge they possess on issues pertaining to farming and/or food processing is valid, the transfer of this knowledge to its main beneficiaries (farmers and food processing companies) depends on individual abilities in communication and – sometimes – persuasion. Hence, after participating in the learning sets, students updated their foci. The development of problem identification competencies is also considered as important, since problems arising in real conditions are complex. Within this framework, students need to develop a new competency, referring to the detection of cause-effect relations. However, to be able to find causes behind effects, it is essential to effectively communicate with farmers and to sharpen their observation skills. Farm enterprises are complex environments, in which humans interact with the agroecosystem and the technology. To understand the ways these interactions evolve, the development of holistic thinking is necessary.

Nevertheless, the learning sets offered opportunities to all the involved stakeholders to question their communication abilities. Finding a common language, using the proper communication style, being open to alternative opinions, and understanding the routes of attitudes and perceptions are important competencies that should be developed not only by students but also by academics, agronomists, and farmers.

V. Reflection sessions



The reflection sections that followed the learning sets indicate that reflection upon practice is not an easy task, since members of the Greek AKIS are not really familiar with group reflection processes. Hence, the transition from individual to group thinking was not easy for some participants. In the initial steps of the procedure were noted some phenomena of groupthink, but the appropriate interventions reduced and finally solved the problem. During the reflection sections, it was noted that learning set participants hold different views of the problems faced by farmers. The source of this multiplicity of viewpoints is the different backgrounds of the participants. To move from the academic knowledge to practice-based knowledge (and vice-versa) is often accompanied by a shift in deeply rooted beliefs. Nevertheless, the open environment of the learning sets facilitated the expression of different opinions and the development of dialogue among participants. The main conclusion of this procedure was that a more concise focus on the process of knowledge co-production is needed. By adding different points of view, participants agreed that it is easier to see the big picture. The action learning approach was found to be an effective way to introject perceptions and to understand other actors' positions. Moreover, the transition from (traditionally preferred by Greek scientists) top-down approaches – which emphasize the roles of “expert” and “knowledge recipient” – to a collaborative and democratic knowledge-building environment proved to be an effective way to unlearn and relearn, especially for students.

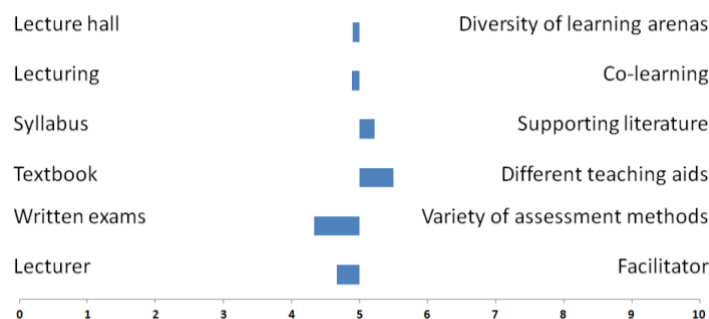
I. Recapping the case activities

The workshop held in ATEITh revealed that the involved stakeholders have different attitudes towards and perceptions of learning processes used. For instance, although most of the workshop participants (and especially those participated in the learning sets) emphasized the value of using multiple literature sources during academic courses, an academic noted that “Teaching math for basic engineering principles does not benefit from multiple literature sources or different assessment methods.” Or, despite the fact that the majority of participants stressed the need to move beyond textbooks towards more experiential and learner-centered approaches, some claimed that textbooks are the “basis of any educational program,” thus revealing that well-established perceptions of the teaching process delay the transition to action learning approaches. However, a common denominator was the observation that it’s time for some changes to be made. The need to rethink the anchoring to traditional teacher-centered methods was evident. Data from learning sets also confirm this need. So, a paradigm shift from knowledge transfer to knowledge co-production is needed. Moreover, there was noted an agreement on the need to change the mindsets of all the involved actors. First, students should develop a more learning-oriented way of thinking, instead of pursuing academic degrees. Despite the fact that having a university degree is necessary for finding a job, success in the labor market depends on a professional’s ability to build new knowledge and to reflect on her/his actions. On the other hand, academics should endorse the importance of offering opportunities for engagement with real farm problems. Although lecturing is a safe technique, facilitation can enhance learning outcomes, providing also ground for reflection and deliberative reasoning.

II. Assessing the shifts

During the workshop, six crucial shifts were identified and evaluated. The first one (from lecture hall to a diversity of learning arenas) refers to the creation of learning environments that create multiple learning opportunities. The second (from lecturing to co-learning) concerns a shift of focus from the process of “delivering knowledge” to knowledge co-production. The third (from the syllabus to supporting literature) has to do with the need to use supporting sources to facilitate students’ learning. The fourth


(from the textbook to a diversity of teaching aids) refers to the transition from the use of single teaching material to the integration of multiple potential learning sources. The fifth (from written exams to a variety of assessment methods) is related to a shift from traditional techniques used to grade students to the implementation of different forms of assessment so as to effectively evaluate learning outcomes. Finally, the sixth shift (from lecturer to learning facilitator) deals with the need academics to be transformed to facilitators of the learning process. As the following diagram illustrates, most of the axes shifts have not yet been reflected in the current curriculum. However, the use of supporting literature and the use of a variety of teaching materials are already used to some extent.



III. Determining the supporting and hindering forces

A wide array of factors seems to impede the desired shifts. These factors can be classified into the following categories:

1. Structure of the Greek system of higher education: The Greek system of higher education prioritizes the theoretical knowledge, paying less attention to the development of practice-oriented competencies. This characteristic has led to the dominance of teacher-centered approaches, which are considered as more “suitable” for higher education.
2. Perceptions and mindsets of both academics and students: The dominance of theory-oriented methods and practices contributed to the development of a specific mindset that allows limited “free space” for acting. Some academics and students feel perhaps more “safe” in such an environment, whereas a lack of motivation to act is also evident.
3. Role attribution: In the current system of higher education specific roles guide the behavior and the expectations of students and teachers. Academics



occupy the role of “expert” whereas students are “knowledge recipients.” This distribution of roles puts barriers to the incorporation of active learning methods, since these methods transgress conventional perceptions of what is right and what is wrong in higher education.

4. “The holy book” phenomenon: Textbooks hold a predominant position in the Greek educational system. The use of multiple sources is not preferred by some academics. Textbooks are sometimes outdated.


On the other hand, the supporting forces are the following:

1. Students’ attitude towards learner-centered methods is very positive. They understand the opportunities offered by such techniques, whereas they stand critically towards conventional practices of knowledge delivery.
2. Internships undertaken by students help them to gain new skills and experience. Consequently, they are familiar to some extent with experiential learning.
3. Academics understand the need to supply students with interpersonal competencies and soft skills, so as to help them succeed as future professionals.
4. Some academics encourage the involvement of students in problem-based learning activities.
5. ATEITH has already developed some bridges with actors in the agrifood sector. These actors can offer opportunities for action-based learning to students.

The recent reorganization of the higher education map in Greece can facilitate the shift from conventional methods to techniques that encourage the active participation of both students and academics in the process of knowledge co-production.

IV. Planning of how to build on the supporting forces and how to overcome the hindering forces

Taking into consideration the rigid state regulation on the structure of higher education in Greece, to achieve the desired shifts, ATEITH should, on the one hand, change its mindset and, on the other hand, endorse the idea that its role is to act as a change agent for the agrifood sector. The recent reorganization of higher education in Greece can be used as a starting point to initiate some changes. The links connecting university and agrifood supply chain actors can and must be enhanced. A better




connection with the “real economy” can open up new learning arenas, thus creating spaces for students’ engagement with action learning. In addition, better networking can help ATEITh to resituate it not as a change agent in the agrifood sector. Different perspectives and expectations of the roles of academics should be taken into account during curriculum development. Moreover, students’ involvement in user-inspired and problem-based research activities should be prioritized. As data from the workshop revealed, students are very positive towards such a shift, whereas academics also express a positive attitude.

V. Planning the next steps

There is a need to build more robust relationships between students, professionals and academics. As a first step, the development of dyadic relationships (between students and professionals and between academics and professionals) is necessary. Nevertheless, a “many-to-many” approach is essential to build an effective knowledge network. Hence, all the involved actors should collaborate so as to identify problems, propose solutions, define possible alternatives, test the proposed solutions, and evaluate outcomes. Moreover, academics must communicate the outcomes of action learning sessions to non-participating students in order to expose them to an alternative way of thinking. Communication of the project results to other audiences can offer valuable feedback, whereas can diffuse the idea of action learning in other fields. To guide and manage the desirable change, Soft Systems Methodology can be applied in the stage of problem definition, to enable debate among different actors. In addition, teaching and learning ontology and epistemology should foster the process of inquiry and reflexive learning. Reconciling the epistemological and ontological dimensions of learning is a challenging next step.

Overview of key actions

- Several diffusion activities will be launched to communicate the results of the project.
- Corrective actions will be taken, if necessary. Feedback from key-stakeholders will be used to enhance the outcomes of the project.
- For the next semester, 12 intern students will be divided into two groups. Students of the first group will undertake an internship following the normal (for ATEITh) procedure.
- In the second group, students – instead of working as interns – will participate in



different learning sets. The learning outcomes, the competencies developed, and the skills acquired by students will be compared after a six-month period.

3.6 Sweden

3.6.1 Initial planning:

I. Exploring the present situation in the case

There is an increasing interest of balancing economic and environmental aspect during round wood harvest in areas with high natural values. There is also an unproven agreement along researchers, forestry personnel and machine operators that a skilled operator often can improve or even create habitats for flora and fauna during certain conditions. With good insight in some key factors and both the planning and the logging operation can be done efficient to liberal extra cost.

After the first crew meeting conducted at a ongoing logging operations all attendants agreed upon that the Nextfood model could be very fruitful to allow academia, management and operators to learn from each other.

II. Envisioning the intended shift

The course will aim to increase the understanding for ruling conditions for some involved actors in wood supply chain as well as for high environmental values, e.g. what can, and what cannot, be done to create or improve certain habitats.

With a diverse mix of professions within the participants courses and meetings will be held in many different places such as indoor office for pre-planning of the operation using digital registers and data. Physical planning in the forest and “on the run” planning from harvester cab.

Most likely researcher will use printouts when meeting takes place in the field. The other way around the operators will most likely keep oral presentations.

As a step to give the course a focus on the participants area of expertise each one has been asked to answer what they most of all would like to teach to others and what they most of all would like to be taught. Their answers creates the platform for the upcoming case.

III. Determining what it would require to make the intended shift

What it would require from:

The learners, - all need to find a balance where the most important parts in their educations can be transferred and compressed into highlighted summary's

The facilitators- all need to ensure that all participants are in title speak up and given the same time frames during meetings and courses



The institutions

Other stakeholders – all need to promote and inform in different media.

Supporting forces: Time. Time is right to run a case in this topic since the media and society shows interest to this type of actions. The ongoing exchange toward bio economy will be a solid ground for even more environmental forestry.

Hindering forces: Time. The forestry industry is for several reasons very busy right now. Time for meetings, education and vocational training might be a bottleneck

IV. Planning of implementation

V. Planning the immediate next steps

Run NF-workshop in September - 19. Case leader responsible

Continued contact with all participants during spring and summer. Case leader responsible

Ensure that there are appropriate logging objects, including high environmental values, available for the operational/considered planning/harvest in October – 19. Case leader responsible

3.7 Czech Republic

3.7.1 Initial planning:

I. Exploring the present situation in the case

In the frame of the bachelor study courses Agroecology and Sustainable farming systems in rural landscape and master course Agroecology, three suitable study subjects were selected. All selected subjects were closely related to the topic of sustainable agriculture and food production and were realized with use of partial methods similar to the action learning concept from the NEXTFOOD project.

Selected study subjects:

Conversion on organic farming

Quality, processing and distribution of organic products

Development of sustainable farming systems I+II

II. Envisioning the intended shift

An outline of the desired course/program

For study subject Conversion on organic agriculture, which was focused mainly on transformation of the conventional farm to the organic one (this was realized like student project, but mainly theoretical paper work was realized by students), the strengthening of the practical part, cooperation with experts from practice (control organization for organic farming) and extended excursions and field works were planned.

For study subject Quality, processing and distribution of organic products, which was realized in form of lectures, exercises and written student projects, extension of practical parts and transformation of student works was planned (practical processing of selected cereal products, creation of business plane for created product).

Study subject Development of sustainable farming systems I+II was already realized in the form of student works, but wider involvement of stakeholders from practice was planned together with stronger support of active approach of the students.

Specific ideas for moving from lecture hall, lecturing, syllabus, textbook etc. to peer learning, a diversity of learning arenas and teaching aids etc.

For all selected study subjects, the transfer of educational activities from classroom to the farms, involvement of the experts from practice and stronger focus on active approach of students and strengthening of their role in education process, was planned.

III. Determining what it would require to make the intended shift

What would it require from:

The learners – active approach, motivation, strengthening of the communication abilities, change of thinking from “how to pass the study subject” to “how to learn something”.

The facilitators – change of methods, creation of new study materials, active approach, moderating discussions between all involved actors, organization work (agreements with involved experts from practice, time management...)

The institutions – support of the teachers, changes in time schedules, additional costs for excursion and some of external experts

Other stakeholders – time, ability to lead discussions with students and listening to them

Supporting forces – interest of some of the teachers and students, good former cooperation with practice, experiences with student projects,


Hindering forces – passivity of students, system of education on all levels, low interest from faculty management, conservatism (also among students), lack of sources for covering of the additional costs (eg. excursions), motivation and time possibilities of external experts.

IV. Planning of implementation

Overview of key actions – Planning of the new forms of study subjects (May-August 2018), contacting of the involved external experts (August-October 2018), creation of new suitable study materials (August-October 2018), planning of the potential topics for the students works (in cooperation with other involved actors) (September-November 2018), organization of excursion, practical works, discussion meetings, etc. (September 2018-March 2019), finding suitable lecture rooms/places (September 2018, February 2019), organize student time schedule in accordance with time demand of action learning approach (September 2018, February 2019)

All activities realized by teachers, in some cases in cooperation with involved external experts and university officers.

V. Planning the immediate next steps



Creation of materials for study projects – planning of the topics of the study projects, creation of supporting materials (pictures, sheets, texts, etc.)

Organization of the cooperation with external experts (time possibilities, student projects possibilities, motivation...)

Creation of time schedule of the course with implemented meetings with external experts and excursions/practical works

Finding of suitable lecture rooms/places

3.7.2 Implementation

I. Facilitators' and learners' reflection documents

Application of action learning methods was successful in case of study subject Development of sustainable farming systems I+II, where the external experts were involved, more practical works and excursions were realized and students were very active (proposals of own topics for discussions, active approach during exercises, meetings and discussions with external experts). Complexity of student works and deeper interconnection with practice have to be established. This study subject is suitable for further development of methods and approaches covered by NEXTFOOD project.

Moderate success in case of study subject Quality, processing and distribution of organic products was based on extended practical parts of the education (cereal products – bread, pasta, created by students) and on active approach of some of students. Problems were with cooperation with external experts and concepts of student works.

Implementation of action learning methods was unsuccessful in case of Conversion on organic farming study subject. The main hindering force was passivity and lack of interest on side of students and inability of the facilitators to motivate them. The cooperation with external experts was affected by this passive approach and didn't bring positive results. Student projects were realized more in theoretical written form, with very limited practical parts.

II. Learners' course evaluations and feedback from key stakeholders

Course evaluations


Involvement students to the discussions and active work was rated very positively in case Development of sustainable farming systems I+II and Quality, processing and distribution of organic products study subjects and at the same time as negative in case of Conversion on organic farming study subject, where the traditional lecture/exercise form of study was preferred by the students. Positive feedback was related also to the cooperation with external experts. Students appreciated participation on discussion topics selection.

Feedback from key stakeholders

Feedback from key stakeholders (farmers, experts from practice, teachers) was different for different groups of students. In case of active approach of the students, stakeholders mentioned importance of action learning model for further practice and employment of the students and provide positive feedback. Passivity of the students results into lack of interest for further cooperation.

III. Learners' self-assessment of competences

Self-assessment results



Students mentioned positive impact of participation on practical on-farm processes, what brings better understanding to the parts of sustainable farming practice. Contact with external experts was positively evaluated due to actual practical information from relevant sectors.

IV. Mapping the learners' learning goals and competence development

Practical exercises were evaluated positive especially by the active groups of students. Some students from the study subject Conversion on organic farming mentioned preference of the lectures and decreasing of the share of practical exercises.

V. Reflection sessions

Reflection was gained from the group of students of study subject Development of sustainable farming systems I+II. Their evaluation of practical projects and interaction with other stakeholders was very positive, however possibilities of improvements of student projects topics and their interdependence was often mentioned. For further development of the action learning methods,, the selection of cooperating farms/institutions will be key factor. It would be good to keep cooperation with both – large scale cooperative farms and smaller family farms, but the projects connected with different kinds of farms should be better balanced. Also student projects in cooperation with social enterprises focused on social farming should be better explained and excursion on social farm should be added for the next run of the study subject.

3.7.3 Reflect and plan again

I. Recapping the case activities

The application of action learning methods gained positive evaluation from most of the involved actors. For further development and wider application, the change students (arouse interest in education of this issues) and teachers (less authoritative approach, willingness to lead discussions and involve other actors into education process) will be important. Key factor will be also motivation for external worker/farmers/people from farms and also motivation of the students. Method of evaluation should be improved and modified in accordance with methods of action learning. Very positive feedback is related to the discussions with farmers and people from practice.

II. Assessing the shifts

Assessment 1-10 of the shifts

Lecture hall - Diversity of learning arenas

3,37

Lecturing reflection - Group peer learning	3,81
Syllabus - Supporting Literature	4,09
Textbook - Diversity of teaching aids	4,46
Written exam - Variety of assessment methods	3,72
Lecturer - Learning facilitator	3,18

Additional shifts

From wider study programmes with numerous subjects to more specialized programmes

From students to colleagues – involve students into relevant projects, assign extensive seminar works, etc.

Discussion notes from workshop participants

Gaining experiences from foreign exchange stays, extension of cooperation between university and farmers

III. Determining the supporting and hindering forces

Supporting forces – interest of some of the teachers and students, good cooperation with practice, experiences with student projects

Hindering forces – passivity of students, system of education on all levels, low interest from faculty management, conservatism (also among students), bureaucracy, lack of sources for covering of the additional costs (eg. excursions), motivation and time possibilities of external experts, motivation of teachers (evaluation of teachers by institution based almost only on scientific results)

Most important – Activity/passivity of students, their interest, motivation of teachers, support from institution.

IV. Planning of how to build on the supporting forces and how to overcome the hindering forces

With groups of students with positive and active approach, the good practice example should be created, documented and presented on different levels, what could help to change the attitude (neutral, not supportive) of the faculty management. Action learning model presented on this good practice example should be presented also outside of the university. The quality of education and student evaluation of education/teachers should be perceived like more important by the faculty management.

V. Planning the next steps

What needs to be done when and by whom?

- Introduction of Action learning to the USB management - May-June - Jan Moudrý, other teachers involved into NEXTFOOD
- Provide suitable space in student time-schedule - June + September - Jan, study department
- Find suitable lecture room (s) - June-September - Jan, Nela and Jaroslav with support of study department
- Contact farmers willing to cooperate - June-September - Teachers involved into NEXTFOOD (with help of students)
- Contact other stakeholders willing to cooperate - June-September - Teachers involved into NEXTFOOD (with help of students)
- Create draft of the course structure - May-June - Jan, Nela, Jaroslav
- Develop full version of course - June-September - Jan, Nela, Jaroslav with support of other involved teachers
- Prepare concrete plan of cooperation with selected stakeholders, including practical student projects - July-September - Jan, Nela, Jaroslav, involved farmers and experts from practice
- Provide additional study materials and tools - June-September - Teachers involved into NEXTFOOD
- Organize meeting of the involved actors - September - Nela and Jan
- Create improved system of evaluation of the students - September - Jan, Nela, Jaroslav with support of other involved teachers
- First official run of the course - October 2019-May 2020 - Jan, Nela, Jaroslav, all involved actors

Overview of key actions

Informing – faculty management, other relevant institutions, media

Course planning and creation – Draft of course structure, full version of course structure, involvement of the external experts and planning of concrete forms of cooperation, planning of students projects topics, creation of supporting materials

Course run and modifications

Timeline

Spring and summer 2019 – Course planning and creation, cooperation with external experts preparation, October 2019 – start of course *run*

3.8 Italy – UNISG

The case in UNISG is split into two part. Part A regards the planning of a new Master program in Agroecology. Part B regards the action learning activities in sub-part 1 – Thematic study trips at bachelor level and sub-part 2 – The Master course Sustainable Agriculture and Agroecology”.

3.8.1 Initial planning of part A:

Under the following points, you should report on the outcomes of the initial planning workshop (kick-off workshop).

I. Exploring the present situation in the case

The idea of creating 2 new Master Program at UNISG starting in 2020 appeared in October 2018 from institutional decision. The design and implementation of a new Master in Agroecology was perfectly in time with the NEXTFOOD project schedule and so the coordinator (nominated by the Rector) included it into the Wp2 of NEXTFOOD applying the NEXTFOOD model.


Currently, UNISG team is developing a future 1 year Master programme in “Agroecology and Food Sovereignty” considering an experiential and action-research learning approach within the framework of NEXTFOOD H2020 project and diffuse university concept.

The Master programme will include 4 phases: 1) Exploring through the action learning didactic approach the programme in Agroecology and food sustainability; 2) preparation for action-research and learning/project , e-learning, Terra Madre and Italy study trip (1st & 2nd phases will be in UNISG, Pollenzo, from October 2020 to April 2021); 3) Action-Research learning/project, P2P workshops and e-learning in Terra Madre communities around the World (April 2021 to July 2021); 4) Action-research learning/project results and findings elaboration, thesis writing, submission, defence & graduation (July 2021 to September 2021), students are free to choose the place of this phase.

II. Envisioning the intended shifts

Shifting from Lecture hall to Learning Arenas:

Moving from traditional classroom structures to arranging the learning environment in a way that can be more involving and interactive for students (i.e. use of circular set ups). Thus, all students will have the opportunity to watch and interact with everybody in the room as well as the freedom of moving in the learning space. For the Master program this was envisaged as a necessary element which will allow to students to work (and share) within diverse groups of actors (i.e. students, farmers, technicians and other professionals), to integrate theory with experience and to “Learn by doing”.



The educational environments themselves also need to transform around this new kind of learning which uses outdoor spaces and farms as learning laboratories; lecture rooms as far as possible to be designed in a way which makes group work and circular discussions possible.

Shifting from Lecturing to Peer-learning:

Another shifting envisaged for the Master, that came out of the Workshop#1, was moving away from a lecture-driven or “downloading” type of teaching to one where students can tap into a wider pool of knowledge. This requires involvement of farmers, practitioners and professionals from outside University to sharing their stories and experiences throughout program. Students would also be encouraged to share their knowledge and experiences through collaborative group work and assignments. A fundamental element would be thus to not take a routine approach to setting up the curriculum but to create an agile learning framework which can be flexible and adjustable based on the students’ evolving needs and interests.

Shifting from Monoculture of textbook to polyculture of teaching tools/materials:

Throughout the Master programme, it would be important to promote transgenerational learning, access to different kinds of knowledge (other than primary literature) and building working/learning networks with each other, with professors and with collaborating stakeholders. Students would be actively encouraged to share their own opinion and to learn through interviewing different stakeholders, through observational learning, engaging the senses by experiencing food, practical work in labs, etc.

Shifting from the exams to different assessment methods

During the Workshop#1 students suggested different ideas for their evaluation:

- Peer to peer assessment;
- Self-assessment (students choose themselves what they want to be graded on);
- Both written & oral examinations;
- Personal & group projects;
- Personal portfolio for each student (with diversity of outputs - written, drawings, case studies, events..)

III. Determining what it would require to make the intended shift

The new Master is designed as experiential and student centred – phenomenon based and action oriented approach. It will require different actions as from teachers as from students, for instance,

Teachers' actions:

- Give away control (of content)

- Step out of comfort zone
- Be willing to take risks
- De-construct and re-construct professional identity (from lecturer to facilitator)
- Move from theory of subject matter (agroecology) to giving primacy to lifeworld phenomena
- Have basic knowledge of factors that enhance student centered learning
- Have access to colleagues with more experience

Students/learners' actions:

- Shift from passive to active role
- Take responsibility for their own learning process
- Be willing to interact with stakeholders in the field
- Accept uncertainty, complexity, incomplete knowledge
- Being part of a change process in the field
- Open mindedness
- Willingness to try out new ways of working/learning

Supporting forces: joint efforts of academic leaders, funds and network of NEXT FOOD project, SLOW FOOD coordinators and students' willingness to collaborate; social request to the new educational approaches; institutional issues of UNISG (strategic plan, Manifesto and educational policies).

Hindering forces: visa issues, financial issues, students' insurance, availability of professors, organisational issues (contracts of the students and PhD-students involved in the supervision)

IV. Planning of implementation


In order to develop the Master course, UNISG organizes 2 Workshops:

Workshop#1, 25-28 February 2019, was devoted to co-designing the structure of the Master

Workshop#2, 14th of May 2019, will be focused on the content areas of the Master Program

After the Workshop#2, in June 2019, will be published Landing page on the UNISG website.

In September 2019 the list of Terra Madre Communities (for the 3rd phase of the Master) will be defined and full information will be published on the UNISG Website.



The enrolment process is planned on the period February-June of 2020.

Finalization of the organizational issues is planned in July of 2020, and start of the Master will be in October of 2020.

V. Planning the immediate next steps

Currently we are organising the Workshop#2 (for 14.05.2019) with UNISG bachelor and PhD students and Slow Food territorial coordinators in order to define content areas for the Master.

In March 2019, after the Workshop#1, was organised meeting with territorial coordinators of Slow Food. The goal of the meeting was presentation of the Master program and discussion of the pre-selection process of Terra Madre communities (for the 3d phase). Currently, the pre-selection process is in progress. As the results of the pre-selection are expected 20 Terra Madre Communities that will be demonstrated on the Workshop#2 (in May 2019).

Besides, hindering forces (visa issues, financial issues, insurance issues and organisational issues) are under discussion with UNISG staff. The results of the discussion will be presented on the Workshop#2.

3.8.2 Initial planning of part B1

I. Exploring the present situation in the case

Over the three years of Triennale the students are participating in seven thematic study trips and 8 territorial study trips. Before the autumn of 2018 (i.e. before implementation of the NEXT FOOD activities), students had didactic trips only with tutors supervision and without introduction and further reflection of their experience. During the 2nd half of the 2018 a huge organisational job was done in order to implement three-phase-structure of study trips. This organisational job was focused on joining efforts of tutor office and researchers responsible for Phase 1 and Phase 3.

Seven thematic study trips were planned for the period from October 2018 to July 2019 including trips on olive oil (October 2018), pasta (October 2018), agrifood systems #1(December 2018), beverages (December 2018), food retail (February 2019), coffee (2019), agrofood systems #2 (July 2019).

Each thematic study trip has three-phase-structure including Introduction and Preparation Session (1st phase), Field trip (2nd experiential phase) and Reflection Session (3rd phase). One main purpose of the new three-phase-structure of these trips is the inner and outer development of students.

The 1st phase is organised as 4-hours seminar with the next activities: introduction part, explanation of key competences, thematic knowledge and preparation for the 2nd phase.

The 2nd experiential phase includes 4 days of Field trips (in and out of UNISG). The 2nd phase is targeted at filling the gap of students' knowledge. During this phase students can personally communicate to stakeholders, food producers, farmers and people responsible for food supply chain. This phase includes seminars with stakeholder, visits to farms and agricultural enterprises, degustation (sensorial analysis).


The 3rd phase is also organised as 4-hours seminar with such activities as personal reflection and group evaluation of the didactic trip, assessment of students' knowledge.

This three-phase-structure allows to students to develop 5 core competences of the future gastronomes (dialogue, observation, reflection, participation and visioning). In order to measure dynamics of the students' competences, on-line self-assessment test is used. Students evaluate the level of their competences during the 1st and 3rd phases. During the 1st part of the 2nd year focus on Reflection and participation (winter semester). After Oil + Pasta & Rice study trip they are familiar with dialogue, observation and participation, reflection. In the summer semester of the 2nd year they have another thematic study trip, where they get introduced to and focus on visioning. At the end of the 2nd year all 5 core competences are introduced and ready for deeper practice during the 3rd years study trips.

II. Envisioning the intended shift

The action-learning action-learning activities of the UNISG envisages the next shifts:

1. Shift from lecture hall to the learning arenas. In this case the role of “learning arenas” play various places of food production (farms, fields, agricultural enterprises, supermarkets ect).
2. Shift from textbook to different learning materials. Aforementioned three-phase-structure provides to students a use of variety learning materials: presentations and oral information that students receive in didactic trips; on-line sources (electronic books, reports, webpages, articles) that students use in their group work during the 1st and 3rd phases.
3. Shift from lecturing to peer-learning. All conception of study trips is targeted at engaging students to the learning process and at making their role more active in the learning process. Therefore, 1st and 3rd phases include group work, preparing “knowledge maps” and brief overviews on the studied issue, their short presentations, group and plenary discussions. The learners play role of teachers to other learners, by exchanging knowledge and answering open questions of the other.
4. Shift from exams to evaluation of students' participation. Evaluation of students' participation in all phases of the study trip is a complicated issue. Final grading includes students' involvement in the activities, uploaded outcomes (i.e. “knowledge maps” and overviews) and the results of the knowledge-assessment tests.
5. Promoted collaboration between tutor office and researches. This collaboration provides more balanced activities and better quality of the education process.
6. Use of electronic platform (Blackboard). This electronic tool allow to simplify such activities as self-assessment tests, collecting assignments and knowledge assessment (exam) with immediate results. The Blackboard also is used as a Sharepoint and as a



place for discussions. Students appreciated the Blackboard, as it allows to actively participate in the class exercise only with their electronic devices.

III. Determining what it would require to make the intended shift

The learners are required to be active, responsible, concentrated, open-minded and be ready for group work.

The skills and qualities required from facilitators are optimal organisation of the students' activities, patience, timing and tolerance.

The institutions would be required to provide all necessary conditions for action-learning: learning arenas (rooms, devices, halls for dialogues and degustations, all organisational issues for study trips ect.), sufficient administrative regulation determining personal responsibility....

Participation of other stakeholders is important in action-learning activities, and would require their willingness to communicate to students and to provide them as much information as possible.

IV. Planning of implementation

During the period from October 2018 to April 2019 Triennale students had 5 didactic trips, 2 didactic trips will be organised in May and July 2019.

In May 2019 students will have didactic study trip on Coffee. It will be organised in the didactic offices and laboratories of Lavazza (Turin, Italy). During 5 days students will have an intensive course focused on coffee production, transportation, preparation including degustation and Lavazza case study.

In July 2019 students will have study trip on Agrifood systems. During 4 days of study trips students will visit producers of cereals, fruits, vegetables and meat.

Both study trips will have aforementioned 1st and 3rd phases.

The similar conception (three-phase-structure with the same thematic) will be used also for the academic year 2019/2020. However, further organisation of the didactic trips will require better collaboration between the university professors, researchers and tutors in order to improve provided didactic materials.


V. Planning the immediate next steps

As far as program of didactic trips (the 2nd phase) is already elaborated and discussed with stakeholders, development of the 1st and the 3rd phases is in progress.

Immediate next steps include preparing special tasks for students' group work, considering their feedback and specific thematic.

3.8.3 Implementation of part B1

II. Learners' course evaluations and feedback from key stakeholders



According to learners' feedback, 80% of them are satisfied of the course, they appreciated thematics and dialogue with stakeholders, diversity of topics, understanding realities and connection between agriculture and food processing, linking theory and practice, degustation, teamwork, dialogue with competent people.

At the same time, learners would to: have more time for practice in trips, discuss more the economic issues, participate in the production process, have more theoretical inputs before trips, have more freedom and less control in their group work (during the 1st and 3rd phases), have more information on research methodologies. In other words, each study trip will require more developed theoretical background, for example several classes on food marketing for the study trip on food retail.

III. Learners' self-assessment of competences

Students measure level of each their competence from 1 to 9 two times: before and after didactic trips (i.e. in the Phase 1 and Phase 3). Then, the average results of the 2 self-assessment tests are compared. Thus, the results of all learners demonstrated slight growth in the level of competences (in average values).

Growth of the 1st year students (after Agrifood study trip) includes 0.53 points for dialogue competence and 0.47 points for observation.

Growth of the 2nd year students (after pasta& rice study trip) includes 0.61 point for observation competence, 0.30 for participation and 0.20 points for dialogue.

3rd year students had 2 study trips (on beverages and on food retail), and in both cases results of self-assessment tests demonstrated growth. Thus after the 1st study trip the growth included 0.43 points for observation, 0.50 points for participation, 0.50 points for visioning, 0.40 points for reflection and 0.36 points for dialogue competence.


After the 2nd study trip the growth included 0.77 points for observation, 0.58 points for participation, 0.91 points for visioning, 0.70 points for reflection and 0.37 points for dialogue.

IV. Mapping the learners' learning goals and competence development

Students of the 1st year work on 2 competences (dialogue and observation), students of the 2nd year during winter semester work on 4 competences (dialogue, observation, reflection and participation), whilst 3rd year students work on all 5 competences. The students do all exercises in small groups (4-5 people).

All learners have similar exercises targeted at dialogue and observation competences: small groups should map expected issues (during phase 1) and then observed issues (during phase 3), with further discussion of their maps. As a rule, learners' maps is a paper of A3 format, which include systematised knowledge of all people in the group.

Also all learners have exercises for continuous improvement of their dialogue competence. The exercise includes preparing group paper with selection of several



issues, for example, learners have to select 5 aspects of their good learning experience.

For all learners the 3rd phase starts with plenary discussion and common reflection on their received experience. The learners express their individual opinions, as they have an individual perceptions of didactic trips. During plenary discussion, the learners reflect on the received experience and compare it with experience in other countries.

3rd year students have more complicated exercises targeted at development all core competences and particularly visioning. Development of visioning competence is based on the specific exercise. The exercise has 2 parts: preparing theoretical solutions for challenges (phase 1), and comparing it to the received practical information (phase 3), thereby envisioning future perspectives. Students are encouraged to present their visioning group paper on the follow plenary discussion.

V. Reflection sessions

Phase 1 and Phase 3 include various activities and require well organisation and strict time management. However, sometimes the learners need more time for group exercises (for mapping their knowledge or experience), or more time for plenary discussion (particularly when the learners want to explain their personal experience). Sometimes these could change all planned activities of the seminar. Therefore, an important issue is to find a balance between organisation and “realities”.

Furthermore, some learners do not appreciate the scheme “5 min in individually in silence, 10 min to write down, 15 min in group discussion”. Thus, another important issue is a balance between facilitators' time control and learners' freedom.

3.8.4 Initial planning of part B2

I. Exploring the present situation in the case

Students of Master in Food Culture and Communications since 2010 and students of Master of Gastronomy since 2017 have 1 week course in “Sustainable Agriculture and Agroecology”. The course is organised in May or in June in order to use good weather conditions for outdoor classes.

Learning goal: the overall learning goal of the course is to enhance the students’ knowledge of farming systems as complex natural/social systems.

The specific topics are: the role of agriculture in society, agriculture as human activity systems, methods for exploring farming systems

The course process:

The course is based on an action learning approach. Based on an introduction to sustainable agriculture and agroecology, as well as methods for how to learn about farming systems, students will work and explore real farms (2 central days of the week). The group brings to the meeting with the farmer(s):

- a) The past experiences and knowledge of the individual group members
- b) The theory, concepts and tools from this course and other relevant sources
- c) The communication and energy within the group and with others having relevant knowledge or points of view

They will further sum up their experiences for presentation in the classroom.

Hand-ins: the students will write a farm document (group work) as well as an individual reflection document

II. Envisioning the intended shift

5-days course includes: Introduction on campus; participating in the agroecosystem – work in groups - on farms; making further farm observations and interviews with farmer(s) – on farm; sum up findings; analyses and plans for action on campus; project presentation.

Shift from lecture hall to learning arenas. A central role of learning is played by farms experiences. The students work in small group of 5 per farms (Tot 5 farms).

Shift from lecturing to peer learning. In this case peer learning included rich practice on farm and peer-to-peer in class feedback.

Shift from exam to assessment of the group work and reflection document.

III. Determining what it would require to make the intended shift

The course requires activity from the learners, patience and specific knowledge from facilitators, and financial support from the University (for example, the bus for transport the students to the farms).

For the course, the same factors can be considered as supporting as hindering forces.

Thus, supporting forces are: available budget, farmers' availability, good weather conditions.

Whilst hindering forces are: insufficient budget, lack of farmers' availability, bad weather conditions, long time consumed for the organisation process, students insurance on the farms.

IV. Planning of implementation

The same structure of the course will be used for the next academic year (2019/2020).

3.8.5 Implementation of part B2

I. Learners' course evaluations and feedback from key stakeholders

Most students evaluated the course as a very good opportunity to work alongside a farmer and have informal conversations with them. Preparing the final presentation and drawing of the rich picture was a very interesting and useful activity for the learners, as it allowed them to systematise their received knowledge.

At the same time, the learners expressed a great willing to be directly involved in the farms' activity, as well as to have more time for this.


Participation of two facilitators was appreciated by learners.

II. Learners' self-assessment of competences

For measurement of the students competences the same methodology was used, i.e. students assessed their skills from 1 to 9 points before the course and after the course, and then differences in average results was defined for each competence. In 2017-2018 courses, the growth of the level of observation was 1.5 points, 1.7 points for participation, 1.5 points for visioning, 1.3 points for reflection and 1.0 points for dialogue.

III. Mapping the learners' learning goals and competence development

The learners should do the case-work using a multi-perspective approach. A multi-perspective approach is part of an effort to grasp the whole of a situation. For a start,



in this case it is necessary to examine the 1) production (e.g., types of production, resources, operation, management, productivity), 2) environment (e.g., pollution or biodiversity within and outside the farm or food system boundaries), 3) economy (e.g., prices, markets, subsidies) and 4) social perspectives (e.g., social life, goals, human needs) on the farm, but feel free to choose what you think is most appropriate.

In addition, consideration of the historical context it is also important. Further, learners should find out what the farmers have as their desired situation for the future (“goal”). A final important topic is the food system dimension: Who are the receivers of farmers’ products? What characterizes the quality of the communication with their different receivers?

Professors provided overall facilitation of the group work as well as the preparation of the individual reports while discipline-specific experts, agricultural extension offices, food experts and representatives of official and private organizations may be requested and contacted for advice on specific issues.

3.8.6 Reflect and plan again of part B2

I. Recapping the case activities

II. Assessing the shifts

The Master Course is based on the 3 shifts.

Shift from lecturing to peer learning. This case (1 week course) includes combination of lecturing and of other learning activities, i.e. observation of farmers activities, work in the farms, interviews (dialogue) of farmers, analysis and plans of actions. This shift is based on active participation of students in the learning process.


Shift from lecture hall to learning arenas. For this shift, visited farms and outside space play a role of learning arenas.

Shift from exam to assessment of the group work. Students had to prepare their group report and an individual report. On the one hand, this shift is very useful; on other hand, students had few time to prepare both reports very well. Therefore, students’ assessment will be reconsidered in order to make their assessment more efficient and workload more adequate for a 1-week course.

III. Determining the supporting and hindering forces

As was mentioned above, the same factors (budget, farmers’ availability and weather conditions) play a role both of supporting and of hindering forces.

Besides, hindering forces include specific factors, such as time needed for an organisational process and student’s insurance.



Time required for organisation of the Master course is a significant asset for the university's staff.

Students' insurance is a complicated issue, that plays a role of hindering factor. Thus, students have an insurance for visiting farms, but there is no specific insurance allowing them to work together with farmers (due to security reasons students can't use farmer's instruments). Therefore, this factor impedes the learning process desired by students.

3.9 India – UoC

3.9.1 Initial planning:

I. Exploring the present situation in the case

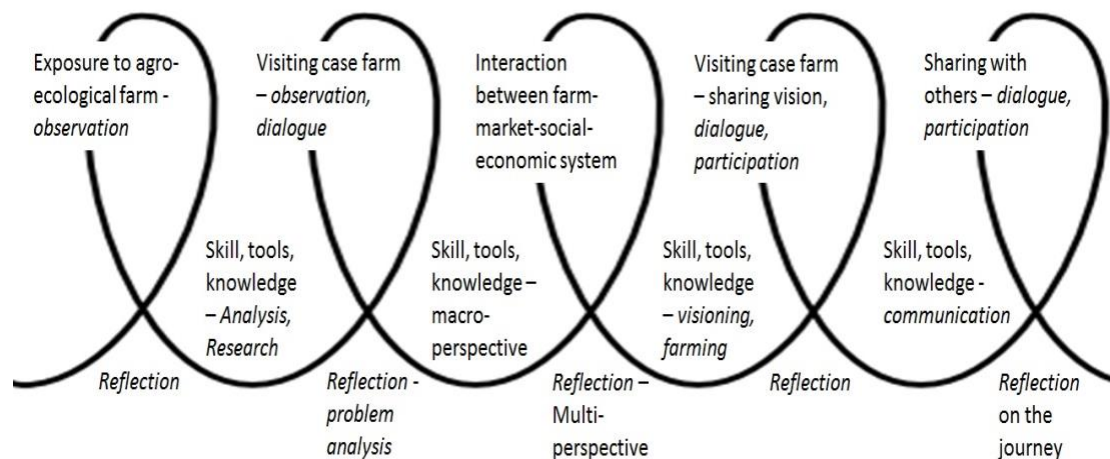
University of Calcutta/WHH in collaboration with NMBU started a yearly 6 months certificate course in agroecology in 2015. This was a part of an Indo-Norwegian collaboration programme. We ran 4 batches till 2018. In 4 batches, we had 37 students in total. NMBU has been running this as a full time master degree course for long time. They follow an innovative method of action learning pedagogy. Our teachers and few students had been exposed to the pedagogy of NMBU and adopted it for Indian context.

The curriculum of this course involved class lectures, farming demonstrations, case work analyses. The resource persons in this course includes academics, farmers, NGO activists, development workers, policy makers. The students spent most of their time in the field, learning about farming, market chain, and sustainable food production. The classroom lectures involved learning system analyses, history of Indian agriculture, rights of the farmers, history of food etc. There were some lectures and hands on training of documentation and communication methods.

The final evaluation was through viva voce, although students were continuously evaluated all the through the course by self-evaluation, vision document of the farm, learners document etc.

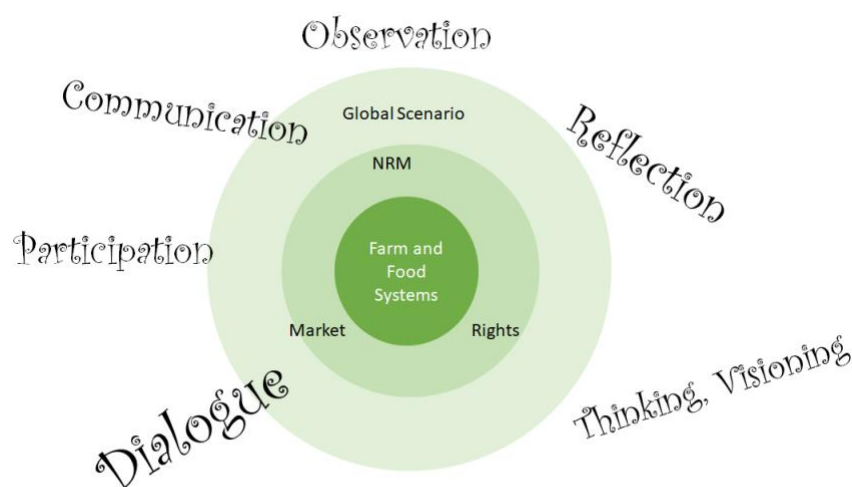
Students came from various background, like some were farmers or wanted to become a farmer, some wannabe entrepreneur, researchers, interior designers etc. After finishing this course some pursued their career in farming, some went for higher studies, one went to Norway to complete the master degree. Most of the students who did this course were found be motivated to bring a change in our food and farming system.

The final workshop of INCP and the starting workshop of Nextfood coincided. We wanted to start the nextfood from where we left INCP. We wanted to fill the gaps, review our curriculum, student's activities, and student's background in this workshop.



II. Envisioning the intended shift

An outline of the desired course/program : The 6 months course ran by UoC were targeted to students who have a bachelor degree in science and who were willing to work as a change agent. The course to be run under nextfood will be targeted for the farmer trainers so that s/he is able to influence farmers to transform farm and food system. The course time frame will be reduced to 3 months – as 6 months are difficult for existing professional. The content framework will be following.



The FGD with stakeholder also focused on the following, which we would like to incorporate.

Soft Skills: Visioning ability, Leading group and networking, Documentation and communication, Building ability to generate funds, System analysis

Technical skills: Agroecological farming methods, Soil testing, Farm planning, Data analysis

Knowledge: Global socio-political understanding, System approach, Habitat and ecosystem, Market economics

There would be major changes in the evaluation system, like we want to put the student in the field for a period of time and see how they work as an extension worker. We would like to invite the extension workers to participate in the course.

There are some ideas to change some basic little things of the course:

- It will be important to bring local stakeholders as facilitators.
- Students are required to spend more time in the field and they should be evaluated on the basis of their performances in the field as an extension worker.
- Farmers' group formation, communication with local government authority should count as a quality of the student.
- More focused activity session in the classroom on specific soft skills.

III. Determining what it would require to make the intended shift

What would it require from:

The learners: Willingness and motivation to learn and bring on the change.

The facilitators: More flexible but focused facilitators are required.

The institutions: The institutions willing to bring in shift in the pedagogy.

Other stakeholders: Other stakeholders willing to learn from formal system and go beyond technical training to more reflective learning processes.

Supporting forces:

- NGOs
- Development organizations
- Universities
- Progressive farmers

Hindering forces:

- Government officials
- Agricultural Faculties
- Big corporations
- Mindset

IV. Planning of implementation

UoC and WHH will make a curriculum to run this new course by May.



The first course will take place in July 2019, followed by courses in 2020 and 2021.

The first course will start from, July 2019

V. Planning the immediate next steps

Explicit descriptions of the immediate next steps be each case responsible (related to realizing the agreed-upon intended shift)

- Selecting the skills and knowledge to be included in the new curriculum.
Changing and modifying the curriculum as per the recommendations.
- Identifying the group of students we are looking for. Development workers, government officials are to be convinced along with the farmer trainers to take this course.
- Communication with the conventional agriculture universities and department to include these in their courses.



3.10 Egypt

N/A

3.11 Italy – CIHEAM


3.11.1 Initial planning:

I. Exploring the present situation in the case

The “action learning” case study at CIHEAM Bari has been organized in the framework of the Master course in “Mediterranean Organic Agriculture. Its main objective is to train graduates, young researchers, and professionals for future professional careers in the domain of organic agriculture. Its structure is articulated along a period of 9 months including 11 units and about 30 sub-units, a combination of traditional lectures, practical and laboratory exercises, field (technical) visits, seminars, group works, etc. Students have an examination at the end of each subunit. Examinations are in the form of oral or written exams (i.e. sets of open questions, exercises, multiple-choice questions). Questions can also cover seminars topics, field lectures, and technical visits. Evaluation is made by the lecturers or by the scientific tutor of the course. Lecturers involved are a combination of CIHEAM staff and visiting professors while field lectures are also given by experts from the private sector. Students have a final project, with a weight of 15% of the final grade. This project was usually based on the field experiments in the domain of organic agriculture, and delivered by each student at the end of the year as an individual project report.

II. Envisioning the intended shift

The Master course in Organic Agriculture has been considered a good opportunity for testing the action learning approach, especially for the chance and the willingness to review the traditional individual project at the end of the course that could benefit of the new educational approach. The “action based and oriented” training activities are envisaged to support the learning experience within the master course in a complementary way to the current institutional offer. Our vision implies a shift in the way students approach the final project, which should be considered, in the future editions of the course, as the arena where learners acquire new skills (both hard and soft) preparing them to confront real life challenges and develop the attitude to establish relationships with local stakeholders in a given territory. We also envision our scientific and didactic staff to master an innovative learning methodology and, in the medium term, the ability to design new and innovative training packages that can be included in the regular CIHEAM master courses curricula or used for widening the CIHEAM education proposal as well as capacity building approaches within a wide range of cooperation projects. To enable the shift, after the first cycle of testing, we would propose a desired outline of the course in which the action learning approach is included with a precise amount of hours throughout the units, where the sustainable agro-food system development of the context of reference is facilitated by the full engagement of a main local stakeholder involving a comprehensive set of local actors. This meaning a higher number of field visits to stimulate dialogue with stakeholders and build a shared vision for the territory development. We would complement course didactic material with learning material more focused on matching the action learning



methodology with the theoretical background-articles, group desk research, workshops at different stages along the process, group presentations. Within the specific context of our case study the shift concerns making the students “active agents of change” through the promotion of sustainable development within a local agro-food system. Specifically, engaging the students with a main local stakeholder, the Park of Coastal Dunes (a regional park authority) to support the implementation, within the Park, of sustainable agriculture projects based on the analysis of the local context, the existing Park’s action plan, interaction with local actors, support of learning facilitators. All elements in the process aim to enabling observation, dialogue, visioning, reflection and participation.

III. Determining what it would require to make the intended shift

The learners

To achieve the intended shift, learners are asked to abandon their previous idea of project design and confront themselves with a different approach, most of the times new to them, which requires a heavier commitment on the side of time devoted and change in the frame of mind when approaching a real problem/need related to their area of study. They are required to make further efforts to understand a complex and changing reality, to overcome language barriers, to adjust to group work rather than individual work although giving value to their personal contribution and creativity.

The facilitators


Facilitators are required to devote more scheduled time during the academic year to guide the students throughout the process finding the right balance between tutoring and facilitation. They need to smooth out the initial confusion of the learners generated by the introduction of the new approach, so that they can focus more on facing the project using the new methodology rather than being afraid of doing something wrong because of lack of understanding. Learning facilitators need to complement the theoretical background provided by the academic course with complementary literature supporting project design. They also have to look at language barriers and facilitation of contacts with local stakeholders to be engaged. They have to prepare in a more thorough manner at the beginning of the next cycle to ensure a more supportive guidance.

The institutions

Institutions need to support the process allowing the organization of the complementary activities necessary for conducting action research (visits, workshops, focus groups, group works) in parallel with the academic commitment of students, provide financing for logistic arrangements, appointment of tutors and coaches, establish trustworthy relationships with the identified stakeholders.

Other stakeholders

Stakeholders involved in the sustainable development of local agro-food systems need to collaborate to find time for meetings, workshops, interviews and have an open mind



to entrust students with an opportunity to provide concrete solutions to a range of needs as well as ensure participation for knowledge sharing.

Supporting/hindering forces

Supporting forces are the willingness of the learning facilitators to promote the approach and ensure students do not feel overwhelmed with a new research methodology and additional study material; a well established relationship with a main local stakeholder (Park authority) with a thorough knowledge of all angles of the local agri-food system, planned activities for development and good relationships with a wide range of local actors.

Obstacles may be represented by the presence of different visiting professors, each focusing on his/her study module that can put pressure on the students or not been interested in supporting the research methodology; financial and organisational restrictions; language barriers.

IV. Planning of implementation

CIHEAM Bari has tested the methodology as follows: the master course in Organic Agriculture has been involved with all its 1st year students. They have been divided into 3 working groups (5/6 students each) that will be guided in the accomplishment of 3 small course projects, whose focus comes from real needs identified in the local territory. The main aim is to contribute to the definition of strategies to promote organic agriculture and sustainable development. The working groups are guided, coached and engaged through the support of the NEXTFood case-study team, 2 tutors and the active interaction with a local institutional stakeholder (the Regional Natural Park of the Coastal Dunes), also considered as “learning facilitators”. Students have worked in a multi-disciplinary and inter-sectoral way through the direct interaction with the main active stakeholder, who, together with them, has identified some local initiatives and the related actors, on which each working group has designed its final project. The course projects have been implemented through several phases, based on observation, dialogue and reflection, leading the students to experience an action-based and oriented learning.

This “methodology module” will envisage 4 phases:

1. Connecting: during this phase, groups are introduced to the methodology and how this can be used to carry out a multi-disciplinary and collaborative course project. They also get familiar with the main local stakeholder and the local context where activities will be carried out.
2. Planning: in this phase, student groups design their project protocol and plans of action, identifying and practicing a set of tools for data and information collection. Tools and methodologies are provided by the learning facilitators. Students select the best suitable tools for their activities to design their protocols.
3. Acting and observing: student's groups implement their project protocols, undertaking individual and collective observation of the targeted context.
4. Restitution and Sharing: groups discuss the results of their findings with key stakeholders for checking, adjusting and sharing results. This phase contributes to the acquisition of an important skill, the visioning, where the creativity for identifying

innovative ways to approach problems and challenges will be developed in collaboration with all the stakeholders involved in the process.

Classroom activities: The course project activities will be supported by classroom sessions (30 hours) during which key topics for implementation will be presented and discussed, and/or group activities and exercises proposed.

Practical days: 10\12 days, for each group, will be dedicated to approach real-life contexts, visiting stakeholders, setting up meetings, collecting information and observing, surveying fields and other key places, etc. This will complement the activities of the 4 phases.


Workshops: 3 workshops, involving all the groups, stakeholders and local actors and the learning facilitators, will be organized. The first workshop at the beginning of the master course, one for adjusting and the third workshop for sharing all 3 project results.

Duration: the training will run from November to May.

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	deliverables
Stakeholder selection									
Students selection & mobilization									
Connecting		1 Meeting at IAMB with stakeholders 3 Visits to stakeholder environment 12 classroom hours							Active Actor profiles and Project objectives
Planning			Preparation of investigation tools and work plan 1 field exercise 10 classroom hours						Project Action protocol
Acting and observing				3 visits 4 classroom hours					Individual reports
Restitution and reporting						2 Workshops with stakeholders and other actors(1 for each group and 1 for all groups) 4 classroom hours			Group report

V. Planning the immediate next steps

The immediate steps taken were the following: appointment of group coaches and initial meeting to share the methodology protocol; organization with the master course tutor, in agreement with the course coordinator to identify within every weekly calendar of lessons the necessary number of hours to dedicate to the project's activities (minimum 2 hours every 2 weeks); identification and contact with the main stakeholder (the Regional Park of the Coastal Dunes) to verify availability for collaboration, possibility to avoid language barriers and consider the availability of several typologies of local agri-food system actors. This was followed by a contract with the Park to mobilise resources.



A meeting with students was organized to introduce the methodology, present the complementarity of the approach with their academic syllabus and present the alternative path for group project submission rather than individual project. An initial workshop with the main stakeholder was planned for a general framing of the local territorial context, objectives of the Park's activities, engagement for sustainable development and description of the existing network of local actors within the Park.


3.11.2 Implementation

I. Facilitators' and learners' reflection documents

Connection phase: during this phase students, divided into 3 groups of 5/6 persons, together with their coaches, 2 for each group, started the process with an initial meeting with the main local stakeholder, the Park of Coastal Dunes. The person in charge presented the local context, what kind of actors are involved in the activities of the park, who they are, introduced the Park's «action Plan» and highlighted the main activities where the Park's commitment is focused and intends to achieve results in the medium term. After the meeting some class work took place with the tutors and the case responsible person (Lamberto Lamberti) to identify the most feasible and course related activities to develop in the framework of the action plan presented. After a preliminary potential identification, students were taken to meet local actors in their real-life context, to pose questions, identify needs, becoming aware of problems and start defining the feasibility of their intervention. The actors were farmers, processors and service providers.

Planning: during this phase the students based on the information collected started to organise their work, selecting the areas of interventions and the initiatives they considered approachable within the given timeframe and supported by the advice of the Park. In this phase the tutors with their respective groups organised some working sessions to clarify doubts and discuss opportunities presented by the chosen project to carry out. Some further contacts with some key informants were organised -via skype and in 1 field trip- to clear misunderstandings, better define the Park's objectives and verify the availability of resources. At the end of this phase each group presented to the other groups, the main stakeholder and the tutors their elaboration of the information collected and the potential subject of their project. The chosen areas were: the design of a Park's organic menu for tourists or locals to valorise Park's agri-food products; recovery of traditional crops; rangeland protection and cheese production.

Acting and observing: during this phase, according to the project chosen, each group started desk research following some inputs offered by the coaches, presented some ideas based on the information collected and came up with an initial project outline. This was followed by meetings (3 field trips) with local actors/key informants, who shared their experience on the chosen subject, their doubts, their enthusiasm about the feasibility of the proposed project but also some practical obstacles. These meetings were extremely important because they contributed to the group's visioning




based on the analysis of and adjustments to the real context scenario matched with their creativity and problem-solving approach.

Restitution and Sharing: during this phase each group finalised its own project and planned a workshop/meeting with the related local actors and the main stakeholder to present the idea and consequently take action in the sustainable development planning of the Park. A final workshop where all groups and all learning facilitators and stakeholders would participate was also organised by the students with their coaches in order to share their work with the Park and possibly contribute to its development objectives. While finalising the project output students were also engaged in some individual essay preparation on 3 open questions related to the activity in which they had been involved and implying the critical use of course theoretical knowledge acquired. Some brief sessions with tutors were organised to clarify the workshop/meetings roles and activities, the structure of the presentation and also to provide guidance on the individual short essays and the final report to be prepared for the end of May by each group. These sessions contributed to a further fine-tuning of the project considering the actors' needs and difficulties and presented the dynamics of an agro-food system in its full complexity.

The output of the course were 3 products, the group projects, which embedded the results of a full immersion in a complex reality, englobed the knowledge acquired during the master course lectures and demonstrated the ability of the students to adjust their initial vision to issues posed by real-life factors (difficulty to establish networks, mobilise actors, match economic advantages with environmental and social sustainability, establish dialogue channels, ensuring participation, deal with practicalities of every-day life on-farm and other small enterprises, regulations vacuum). On the positive side they met with the capacity, engagement and enthusiasm of the main stakeholder, the openness to dialogue and acceptance of new challenges from the side of local actors, the experience of what is needed in the field to promote sustainable development within a given territory, the sharing of the vision, the interest and commitment to continue with new initiatives based on the work of the groups.

II. Learners' course evaluations and feedback from key stakeholders

Considering the circumstances related to the master course organization on which we have based our case study, and also the difficulty of the learning facilitators to frame, since the beginning, all the necessary steps and support tools (due to limited available time, internal organization of work load, and also a certain level of "oversight" in this initial experience) during this first cycle we have not been able to prepare regular individual evaluation forms to submit regularly to the learners. We have relied on periodical oral feedback prompted by the perception that some initial confusion, generated by the application of the new approach to learning and research, was preventing the learners from focusing on the activities and the interaction with stakeholders involved. Feedback was also provided to support an excess of concentration on "problems" rather than working out feasible actions. Most of the perplexities were related to the understanding of the "visioning" and the "unusual freedom" to design a project based on the analysis of a territory and its actors, the objectives of local stakeholders, rather than designing a project based on a course topic.



Course evaluation tools have been designed for the end of the course:

- An individual essay including 3 comprehensive questions on sustainable development of agri-food systems related to the activities carried out during the case study
- A group presentation of the selected project
- A group report on the selected project

The score related to the project design applying the action learning approach will represent 15% of the final master course score

Feedback from key stakeholders

Key stakeholders involved, the Park and the other local actors have found the experience extremely stimulating, recognizing the innovative character of this type of activity and the acknowledgement that students' skills and knowledge can provide a valid support when designing development initiatives. The Park has been fully engaged since the beginning and has so much believed in the approach that it has mobilized many actors of the territory and promoted all the organized activities. It also reported the appreciation of all the actors and their willingness to collaborate with the students for some future targeted initiatives.

III. Learners' self-assessment of competences

We have not proceeded with a self-assessment at the beginning or end of the course. We have included a request for the final report, asking to provide a personal consideration of what they think they have acquired throughout the experience, in terms of skills and knowledge and what they found useful during this course. Results are not available yet as the reports will be handed in at the end of May.

I. Recapping the case activities

The workshop held in Bari at CIHEAM institute, on 2 April 2019, involved learners, learning facilitators, local stakeholders. It represented the opportunity for reflecting on the activities carried out and collect feedback and suggestions to improve the next cycle.

After the presentation of the Nextfood approach the attention was concentrated on gathering an initial feedback on the course from the students followed by teachers' reflection.


Useful: among the most useful elements students highlighted the interaction with stakeholders and the field trips that gave a rich picture of a real-life context, group work as opposed to a traditional individual project work. Inspiring: working in an international context, high level of involvement in all phases along the process, accepting and exchanging group members views. Interesting: the motivation provided by the coaches, the creation of different connections, multidisciplinary of activities, possibility to contribute with their project to a real sustainable development action plan.

However, the novelty of the approach had also generated an initial “discomfort” that has caused confusion and difficulties to focus on objective design and task definitions. Therefore, students expressed the need, in the future, to receive a better framing of the approach at the beginning of the course, to have a better balance between course lectures and workload and action research activities, to receive more time from coaches during the initial steps. The majority also requested to define goals at an earlier stage, and we consider this as typical of the traditional approach, which would have provided students with a project topic at the beginning to be developed for the end of the course. On the contrary, with the Nextfood approach we have encouraged a project design based on the analysis of the real needs of a territory.

On the side of teachers there was agreement that a better framing of the methodology and the objectives is needed, with a more practical explanation of the different elements corresponding to the acquisition of a relevant skill (observation, dialogue, visioning, participation, reflection). Moreover, it was considered as a stimulating element to be fostered and improved the relationship with the main local stakeholders and more time needs to be dedicated to coaching. Another important aspect is given by the provision of learning material that should complement in a better way the field activities, the group work and the knowledge acquired in the classroom.

II. Assessing the shifts

Considering the 6 areas where shifts are needed to be able to design a learner-centric experience and match knowledge with competencies, workshop participants appreciated and acknowledged the changes introduced by offering **alternative learning arenas** during our course (stakeholder's sites, local actors places, coaching sessions, skype meetings, workshops, small seminars). Peer learning has also been considered as a stimulating experience, although is still hard, sometimes, to gain trust as a “peer” and to obtain the necessary confidence in what is shared. Local actors and



stakeholders have also underlined the peer learning shift, becoming trustworthy sources of knowledge, stimulating creative thinking and the outline of a shared visioning including the necessary process “adjustments” to a real context. **The shift from syllabus to supporting literature and textbook** to a diversity (variety) of teaching aids/a variety of learning sources has not been carefully planned. While students still consider syllabus and textbooks as crucial in their education, more time and organisation are required on behalf of coaches to encourage the use of alternative and complementary sources and tools. Co-creation of knowledge has been facilitated and encouraged by stimulating group work and organising several field trips to meet local actors and the main stakeholder (Park). Concerning the shift in the evaluation methods the situation resulted somehow more complicated because of the structure of the master course in organic agriculture. All units are delivered by visiting professors mainly, having a week to complete their programme. At the end of the week they hold exams. This increases the pressure and the workload for the students. The action learning is applied to the project design part, it is a complementary activity where the alternative assessment tools can be applied. However, during this first cycle we have used short reports and presentations at the end of every phase: connection, planning, restitution. Students have found the experience stimulating and challenging as they have learned how to balance roles within a group, compare their observations, facilitate dialogue. They have found more difficulties in grasping the concept of visioning. Coaches have tried to act as learning facilitators but this first cycle has represented an adjustment for them also and they have acknowledged the need to improve their role and their skills for the learners to receive a better understanding and training in dialogue, visionary thinking, observation and reflection.

As a result of the assessment of the shift, **what would make the case more effective in the next cycle** would be:

On the side of learning facilitators: better initial planning of time to dedicate to the learners throughout the process; more effective and supportive literature identification to hand out as complementary study material; timely and effective planning of training on the approach highlighting the concepts of dialogue, visionary thinking, observation and reflection; design of evaluation tools; ability to create a motivational and encouraging environment.

On the side of learners: openness to dialogue within the group and recognition of peer learning; improve collaboration within and outside the group; curiosity; better focus on the process rather than on the “one” problem and attitude to “think outside the box”; understand the value of the interaction with stakeholders.

On the side of institutions: in terms of the educational establishment what is need is support in the organisation and appointment of resources; willingness to facilitate the shift despite practical difficulties due to an “established way of delivering” the master course; ability and support in creating effective and mutually satisfactory relations with local stakeholders to involve them and engage them in a long-term collaboration.

III. Determining the supporting and hindering forces

The case study at CIHEAM has relied on supporting elements and has encountered “physiological” hindering forces when a shift from one established method to a new one is incepted.


Supporting forces have been: enthusiasm of most of the coaches in carrying out the experience; previous knowledge of the “learning by doing” approach applied for 10 years in an advanced course in Sustainable Agriculture at CIHEAM Bari; support and openness of the master course coordinator and the institution to facilitate the organisation and implementation of the activities; established collaboration with the main stakeholder and reliable network of contacts with a range of local actors in the agro-food system; shared goals and values with the main stakeholder; openness and resilience of the students and their attitude to work in a multidisciplinary context.

Hindering forces: an established course structure encompassing different disciplines delivered by different visiting professors with a 1-week programme to complete. This makes the “Nextfood shift” more complicated to happen for reasons of practical arrangements, workload for students, competing objectives, different personal attitudes; language barriers between the students and the stakeholders; difficulties in ensuring local actors availability when planned; time constraints in finalising a calendar of action research activities within the course programme without adding on pressure and extra work on the side of students; lack of motivation or discouragement of students face to real-life problems; lack of confidence in the approach by some coaches.

IV. Planning of how to build on the supporting forces and how to overcome the hindering forces

Based to the current experience, we are going to capitalize on the supporting forces and try to overcome some of the hindering forces. Enthusiasm and abilities of the coaches are crucial, as well as the lack of confidence in the method can be destabilizing for students. We are going to confirm the coaching team and identify a few more members to join in and share the appreciation of the methodology. We are willing to guarantee 2 coaches for each group. This will allow to allocate more time to students, identify and deliver a more comprehensive and effective set of complementary literature, plan a more effective training on the “Nextfood approach”. The enthusiasm and support of the course coordinator, together with the satisfactory results that have been achieved, have been used by the case team to encourage the coordinators of the other 2 master courses at CIHEAM Bari to join in the experience. Our main stakeholder, the Park, has confirmed its collaboration and has been extremely engaged and pleasantly surprised by the outcomes of the experience. This has led to the initial discussion on more activities and more actors to be involved in the next cycle aiming at a full involvement of students in the sustainable development plans of the Park.

Considering the hindering forces, the peculiarity of the course structure has taken us to apply the Nextfood approach as a complementary module to carry out the end-of-year group project, “bottom up”, as opposed to the previous fashion of conducting an



individual, “top down”, project. However, we are discussing ways to involve some of the visiting lecturers in the experience to seek collaboration and facilitate a more “systemic” shift. Language barriers have been minimized thanks to the involvement of English-speaking Park’s representative agents, and also some actors, with the collaboration of coaches for translating and with the support of in-house translation services. The main stakeholder has advanced plans for more actors’ involvement and collaboration to improve planning and networking so that availability will be ensured in most cases. The main course programme will be obtained in advance so as to allow a better activity planning for the action learning/research, allocating more time and relieving some pressure on the students. A better training on the Nextfood approach- in dialogue, visionary thinking, observation and reflection- will, to some extent, alleviate discouragement and provide the necessary motivation to conduct the activities.

V. Planning the next steps

At the time of this report an actual planning has not been finalised yet. We are still concluding the first cycle. However, we can state that the main activities to perform in the short-term are:

Coaches:

Course programme elaboration and time allocation for the action learning/research activities

Initial screening of complementary literature

Preparation of evaluation material

Coaches training on the approach to ensure the same understanding of roles and activity when coaching a group.

Initial meetings with the main stakeholder for a first screening of possible sustainable development objectives in the local agro-food system

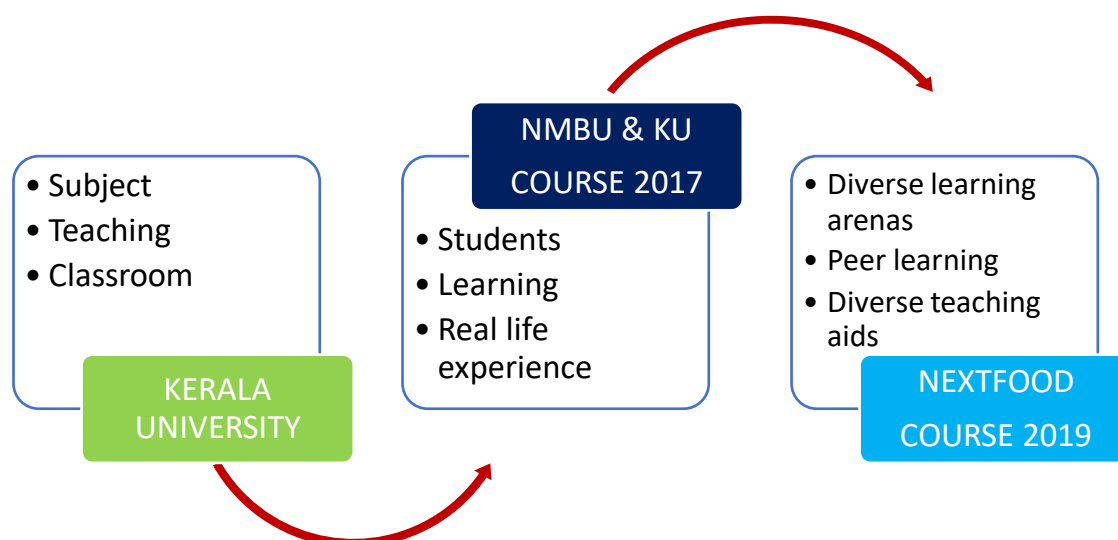
3.12 India – UoK

3.12.1 Initial planning:

I. Exploring the present situation in the case

The collaborative project titled ‘Agroecology: Action Research and Education -India Norway Cooperation’ initiated cooperation in teaching and research in agroecology between Norwegian University of Life Sciences (NMBU) and University of Kerala (UoK) with the aim of setting up a pilot course based on experiential and action-oriented learning. Initiating a course in agroecology with participatory, action-based research and education methodology, with the support of NMBU, promotes a holistic and system-oriented approach to learning, which is considered necessary for dealing with complex, dynamic situations regarding agriculture, food and public health, especially in the state of Kerala where higher education system is highly compartmentalized and focused on theoretical knowledge. The Certificate course, conducted for two consecutive years (2017 and 2018), was of 28 days and nine students from multidisciplinary background participated in the course and thus initiative towards transformative education was found receiving acceptance among academia who have been led by conventional education system. The course adopted continuous evaluation as assessment mechanism instead of the written examination system and students were given course certificates according to their reflective journals and client documents. Each course was preceded by a planning workshop in which students, facilitators from University of Kerala and Professors from NMBU participated and meaningful discussions towards planning and implementation of next course and an evaluation of the course was done.

TRANSITION TOWARDS EXPERIENTIAL LEARNING



II. Envisioning the intended shift

An outline of the desired course/program –

Certificate course on Agroecology; Action Research and Education’ is based on innovative curriculum having its roots on action reflection methodology and the course was a maiden effort in introducing a new system of learning in the state of Kerala. However, improvements have to be made in the course curricula in order to create an intended shift in the content and process of educational activities in par with Nextfood objectives. To develop an appropriate technique which connects conceptual learning techniques with the lived experience is the most crucial part in this. i.e. finding the right blend between theoretical learning and lived experiences. Secondly, scheduling the course in such a way to manage the socioeconomic and political hindrances is important. Thirdly, it is important to be able to generalize the experiences derived, of course without losing the regional/case wise specificities. The course will be planned in a way to accommodate these challenges.

The course will be of 28 days. Twelve students will be chosen from multidisciplinary background, based on a written expression of interest and interview. Three facilitators and two mentors will be there to support the students with the activities. During the first week, students will be introduced to action learning methodology, in which along with activities related to observation and reflection, theory classes related to systems thinking and qualitative research will be provided. Students will be given ice breaking sessions including the psycho metric tests to classify students in such a way that each group consist of students with diverse capabilities and characteristics. On the second week, field visit to selected farms will be conducted, where students can experience the real-life circumstances of farmers and can practice competencies including observation, reflection and participation. The third week will be devoted to presentation of findings from the field visits, imparting of theoretical knowledge to students by way of invited lectures, peer group presentations and literature review seminars. The concluding sessions will be destined to find answer to the question ‘what needs to be changed’, with respect to the learning methodology and learning subjects, which will be done, by a second visit to fields and writing the reflective journal and client documents. Learner’s self-assessment of competency, learner’s evaluation of course contents, and reflection sessions will be used for continuous evaluation of student performance.

Specific ideas for moving from lecture hall, lecturing, syllabus, textbook etc. to peer learning, a diversity of learning arenas and teaching aids etc.

From lecture hall to learning arenas

Nature’s Lab: It is important to conduct sessions outside the classroom so that the students can experience the texture of soil, the good climate and fresh air outside while listening to class.

Museum: Creating a museum with installations of important concepts/models that students have to learn which can act as a new learning arena for students. These museums can make learning easier and interesting, since a miniature of the real experience is provided to students. For instance, compilation and display of rich pictures drawn by previous batches can act as a good reference to the students.

Interactions with experts in their workplace one learning arena, which gives the student a proper understanding of the real-life scenario with respect to the particular work place.

From lecturing to co-and peer learning

Group division of students based **on Psychometric/Diversity ice breaker** tests so that capabilities, attributes and traits of students are assessed and students with diverse capabilities are formed in to one group to take advantage of each other's talents.

The student group has to be provided with various **group activities** including,

Group Discussion

Literature review and presentation

Project works

Exploration activities

Power point presentations

Writing reports/ research articles

Walk with scholar -Field work opportunity as a group

Mutual evaluation of documents by group members (**Peer evaluation**)

From textbook to a diversity of teaching aids/a variety of learning sources

Interactive Learning Apps (interactive videos, games, simulations)

Gallery Walk

Art- **Music**/Sculpture/theatre/Folklore

Audio/visual preparation

Others:

1. Workshops/Hands on training- creative thinking, farming techniques
2. Discovery Learning- Practices in soil, gardening, travelling explorations (related to tribal/traditional farming)
3. Talent Hunt
4. Alumni Association
5. **Preparing vernacular version of client report** to be given to farmers.

III. Determining what it would require to make the intended shift

What would it require from:

The learners - Change in mindset, Unlearning the theories/concepts already learned, understanding traditional/practical knowledge is as important as academic knowledge.

The facilitators: Rethinking role- to understand learning is a continuous process and there are many things to learn from other stakeholders including the non-university actors.

The institutions: transforming the systems; administrative/academic systems to promote flexibility and efficiency.

Other stakeholders: Believing that cooperation is beneficial. Cocreation of knowledge can lead to prosperity.

Supporting forces

- ✓ Human Capital: Curiosity, imagination and acceptance of students, and wisdom and knowledge of faculty members in academic community who are supportive of the new course.
- ✓ Social Capital: Presence of multi stakeholders and possibility of team work can lead to knowledge creation and dissemination through the course.
- ✓ Institutional Support: Some authorities in the University support experiential learning and hence it is easy to convince them about the possibilities of this course which can help to overcome the administrative hurdles.
- ✓ Interdisciplinarity amongst students augments knowledge, which might be otherwise missing in a single discipline student group. Prior knowledge related to each subject becomes an added advantage.

Hindering forces

- ✓ Managing the multi-stakeholders: creating a rapport with different stakeholders coming from entirely diverse life situations with in a stipulated time period is a major challenge.
- ✓ Problems in group work: Some of the group members will capitalize the work to others and evade from contributing anything in case of group activities.
- ✓ In the State of Kerala, most of the farms are small holdings. This creates constraints in planning and executing the field visits. For instance, participation in the field/ stay in the field becomes very difficult.
- ✓ Already existing presumptions about good learning activity which has been imbibed in the mind of students, faculty members and University staff is a hindering force.
- ✓ Strict university laws which creates unnecessary spatial and time boundaries in the process of learning.
- ✓ Strict social norms which resists the changes; both in educational front and in the ways of living may create problems. Understanding the local ways of living, language and accommodating it can be difficult for academic world.

IV. Planning of implementation

- 1. Revising the course curricula accordingly*
- 2. Decide up on the date and timing of each activity in the course*
- 3. Make a list of resources (human, physical, financial) including administrative sanctions/permissions needed for conduction of each activity*
- 4. Divide the task in between team members and decide upon deadlines*
- 5. Execution of new curricula.*

V. Planning the immediate next steps

Explicit descriptions of the immediate next steps be each case responsible (related to realizing the agreed-upon intended shift

1. New Learning Arenas:

Identifying spaces outside the University where classes can be conducted. Visiting and conducting classes at Farmer Producers Company can be a new learning arena. Getting permissions from the Farmer Producers Company and deciding on timings are the immediate steps.

2. Co-and Peer Learning

Conducting Diversity Ice breaker test can throw light into the personality traits of students. Getting the resource materials is the immediate step.

Peer evaluation: Deciding up on the topic given for peer evaluation. Peer evaluation of response paper.

3. Teaching Aids:

Using possibilities of Multi media in presentation; ensuring the technical support system.

I. Facilitators' and learners' reflection documents

Reflection document of students are the best mirror that reflect the pros and cons of the course. During the planning workshop a number of new ideas came up and some of them were included to the new course curriculum, especially with respect to peer learning and widening of learning arenas. Particularly, the idea of Nature's lab, peer evaluation, personality tests, interactive sessions were the few important refinements that were experimented with.

Reflective journals give immense insights into the impact of these activities. With regard to the classes conducted in the Farmer Producers Company students found it very exciting to attend classes in a very new setting. Students opined that 'listening about farming activity from a farmer itself, in the midst of lush green plantains and vegetables, alongside the pond under the hot sun' was a mind blowing experience and the class was not confined to lecturing, 'he showed how to sow particular seeds/harvest certain vegetables and even how and why the soil texture differs at different part of the field'. Personality test and thinking hats was another important experiment that caught student attention. It is written that 'one important aspect of this was the icebreaking work we did before the fieldwork that gave some context to the group's particular viewpoints. This included the personality test and a review of Edward deBono's Six thinking hats. This informed us how we were put into our group, which was designed to give as multidisciplinary an overview as possible, and is certainly something I will take with me to my own future work'. Peer evaluation of response paper was yet other activity. Students were enthusiastic to read and evaluate the papers and it gave them insights regarding critically evaluating papers. Added to it, students were eager to produce the client document in vernacular language and they wrote, 'on our last field visit our group realized that without providing a summary of our case study to the farmer in Malayalam, we would not be affecting any real change'. About the group activities during the course, it 'helped illuminate a range of pertinent topics including multidimensional thinking, climate change impacts, and a discussion of sustainable development. The IGP model (individual, group, plenary) was a productive way to engage each class member and spur conversations during the lectures and field visits.

In short, the reflective journals of students mostly discussed the following:

1. Usefulness of tools such as rich pictures, mind map etc.
2. Interactions in the group and beauty of team work
3. Field visit- participation in the fields and practicing competencies
4. Interactive sessions and literature seminar sessions
5. Refinement in the thought process with regard to subject and learning method.

From the facilitators point of view, academic freedom, democracy in the class and innovative assessment mechanism are the most important features of the course.

II. Learners' course evaluations and feedback from key stakeholders

Course evaluations:

Positive Comments:

1. Multidisciplinary Approach of the course is appreciable
2. Group Work is interesting and this really help in day to day life also
3. Field Visit are very useful to understand what happens at the grass root level
4. The course is Innovative and welcomes new ideas from students
5. Flexible curriculum provides space to accommodate opinion of students
6. Experiential learning approach is very good
7. Self-learning process is very effective
8. Convergence both practical and theoretical knowledge
9. Exposure to real life experience and current issues
10. Training in competences is useful

Suggestions:

1. Increase the duration of class
2. Provide activities in such a way that they can mingle with other group members in the class. This can create a friendship within the class
3. Increase the tenure of field visits
4. Promote students to make gardens in their backyard/campus and include it as an assessment point
5. Include more interactive sessions with eminent personality in sectors related to farming and food systems

Feedback from key stakeholders

Stakeholders included farmers, representatives of Farmer Producers Company, officials in Local Self Governments and University administrative officials.

Farmers are very supportive and interested to work in the course and are ready to help with infrastructure/ technical know-how.

University also possess a positive attitude and support with administrative functioning.

III. Learners' self-assessment of competences

Based on the self-assessment rubric , filled by the students in the beginning and end of the course class average of level of development in each competency is given in the table

Items	Beginning	end
Observation	3.56	6.3
Participation	4.1	6.36
Visioning	3.72	6.38

Reflection	3.95	6.42
Dialogue	4.82	6.75


IV. Mapping the learners' learning goals and competence development

Student's expectation regarding the course at the time of commencement was related to getting more theoretical knowledge about agroecology; but during the course this attitude changed. As can be read from a learner document, 'As our course began however, I quickly realized that this was just the beginning of the journey to an understanding of the systems thinking and necessarily multidisciplinary methodology in agroecological analysis. As important as the exposure to methodology and experiential learning was, the change in attitude required by the approach was clearly paramount- that is to say, a goal of practical and truly implementable policy that is sustainable, requires a different way of looking at research and analysis of food systems. This change in attitude made great impact in majority of the students and slowly they became conscious about the need of competency development. And this prompted students to deeply think on link between observation and reflection and the group realized that while observation and reflection are involved in similar cycles and have nearly identical biases and influences acting on them, to maintain objectivity before judgement, our particular emotional state, ambitions, pre-existing knowledge, political and cultural background, and value judgements should be set aside as much as possible. This allows a focus on openness, the inclusion of details, imagination and creativity, and a dampening of subjective impulses. Students practiced these competencies in the class and at the field which made impact in the way they see things. Similarly, dialoguing is one important competency that students internalized. In order to tackle the challenge (of lack of proper dialoguing) students deliberately started not strive to convince others or ratify our position but instead hear each other and build a common experience to learn collectively. In addition, visioning exercise provided them an opportunity, not only to vision of the farm land but also to vision of their future.

V. Reflection sessions

Reflection sessions formed an important part of the learning activity, and reflection sessions fostered a transformative change in the students, since they were given a chance to think on what they see and experience purposefully. During the initial days keeping quiet and reflecting was a very difficult task for the students, however, repeated sessions on reflection made an impact on the students and the habit to think deeply before indulging in discussion become a norm. By the end of the course students recognised reflection as an effective tool in education and research as it provides an opportunity to uncover the knowledge used in a particular context through recalling our experience, analysing and interpreting the information. The first reflection task was related to observation walk and then students were confused of the factors that make good observation and reflection possible. However, through practice they imbibed the competency and it was visible in their changed behaviour.

Reflection sessions instilled the following understandings:

- 
- Essentiality of ground level knowledge
 - need of visionary thinking
 - importance of identifying the system and its boundaries
 - need of Interdisciplinary communication and participation
 - Careful observation
 - need of asking constructive questions

-and above all, these sessions helped in understanding academic qualification is not a synonym for excellence. And it is important to respect and value every one and learning is a continuous on-going process.

3.13 “The 13th case”

3.13.1 Initial planning:

I. Exploring the present situation in the case

In 2018 a consortium of 19 partners, mainly European universities and Research Institutes but also actors in Africa, South Asia and South America, submitted a winning proposal to the Horizon 2020. The aim of the research is to create a roadmap for European agricultural and forestry education, where an inventory of future skills, educations strategies, assessment of quality of research and education and policy development are the main areas of research and development. The heart of the research process is a cyclical action research method, carried out in 12 educational case studies in partner countries, that contain three main phases: plan-implement-reflect. The aim of the action-research is to produce new knowledge needed to drive the transition towards cyclical learning, in line with the NEXTFOOD approach.

In order to accomplish the objectives of the Nextfood project, the consortium itself and its actors must develop new ways of learning and new ways of doing things in a process governed by the NEXTFOOD model. Learning is an interactive and thus socially-embedded process, which cannot be understood without reference to its institutional and cultural contexts. Therefore, this case (the 13th case) has a focus on the institutional context of the learning process within the Nextfood consortium, and concerns the rules and norms that govern it as a social process of learning. In practice this means the rules and norms governing: the role and the engagement of various actors involved and the factors that affect their relationships, how knowledge is built up, shared and used, how the consortium reflects and learns, how national culture affects how individuals and organisations interpret and make meaning of the Nextfood model.

A kick-off meeting was held in Malmö in May 2018. The outcomes of the workshop is presented in the boxes below.

II. Envisioning the intended shift

Workshop 1; Introduction to the Nextfood model

Question 1: If you next week were asked to present this model to an interested friend, what would you find most challenging? (The model and not the process from linear to cyclical. The process will be dealt with in the following workshop).

Different target groups have different aims (such as students, farmers, foresters, farmers and foresters).

There is a challenge in changing the attitudes of the students who are used to front lessons and reading books, as well as training teachers in such a new context.

There may also be a cultural hinder, a language mismatch between practitioners and academics may result in a wall between the two different groups.

Importantly, one need to explain the added value of this new model compared to the old one.

Need for mentors in the model, for example experienced professors with field knowledge.

The relation between the model for education as presented in the NextFood model and the research which will be conducted in the project. Where does it come in, and with which purpose/s?

The transition from a functional model for a specific education program to a model for an entire education system for food and farming professionals in Europe. How will that be pursued?

Workshop 2; Project design and organisation

Question 1: What are the main challenges for you in this project? (The group should aim to identify the three biggest challenges – challenges which they themselves can address). Formulate the challenge as a question: In what ways can we ..., or How can we ...?)

The overall question “How can we best get such a big consortium going? “ sums it up well; concerns about each partner finding their roles in the consortium was lifted, as well as how to ensure a good linkage between the overall goal and the different tasks in the work packages and the cases.

Time management and communication in a complex project as Nextfood is important.


How to Adopt a Holistic approach to the food system chain

The long-term impact: “How can we assure the sustainability of the developed and improved methods and really cause the shift of paradigm?

How do we scientifically assess the result of the project in long term?”

III. Determining what it would require to make the intended shift

Question 2: How can we overcome the challenges? (Answering the questions that were developed as a response to Question 1 in workshop 2)



All work packages should go into the case studies and try to understand the work that is going on there. This to ensure that we got a two way process between case studies and work packages. Also, give space /flexibility for interested consortium partners to be involved in specific case studies of interest to them where they could contribute with their experience/expertise.

It's crucial that we in the consortium build a learning environment, and one good start would be to find a common terminology, different terms have different meaning to the partners.

For the long-term impact, we need scientific methods and indicators to measure the success and sustainability.

To “get the consortium going” we should secure synergy and a shared responsibility among partners, and make sure that we have clearly defined tasks across and within WPs.

A good communication platform with web based tools is also important. However, physical meetings are indispensable to get to know one another and build personal contact and trust. We should communicate graphics, illustrations, short messages instead of lengthy texts.

Question 1: What would it take to shift the mindset from a linear to a cyclical one?

It's important to know the cyclical model, understand it, internalize and adopt it. That everyone involved understand the method and believe / agree that it is a good idea – why would this be a better way of learning than the linear one? It's perhaps best done by practicing the model and exchange experiences.

Several mentioned a change in attitudes: to listen and respect the other opinions; to have the courage to dare to question our own assumption (as student, participant, stakeholder...); willingness to achieve something above just creating a position of power. The goal is to make students really learn and create lifelong learning – not stop after the exam

Motivation for teachers, professionals and students could be to learn something new, to have fun at work, that the new method makes it easier to “teach” and/or learn and/or that the using the method gives better results.

The importance of reflection on the learning itself was highlighted: It must be realized that reflection is needed not only on how things are, work etc. (first-order reflection on ontology) but also on our knowing and the processes by which we learn (second-order reflection on epistemology).

Question 2: How can we enable fruitful collaboration between the cases (WP2) and the other

A common platform for communication between different wp's and cases is important for the collaboration. This could include:

A plan of regular meetings; physical meetings and via Skype etc.



A specific format for short videos for sharing case experiences

In the second half of Nextfood, arrange conferences to share experiences from the cases and WPs, as well as workshops of specific topics

A Facebook or LinkedIn group for sharing photos etc

The partners must get to know the other case studies and the deliverables of the work packages in order to make the link.

Another suggestion was to define 6 month objectives for each wp and update each other monthly by teleconference with few people.

Use of knowledge management systems.

Reporting structure – template for structure and how to report input from the cases (describing how, when, what and who?)

Workshop 4; A shift of mindset

Question 1: What would it take to shift the mindset from a linear to a cyclical one?

It's important to know the cyclical model, understand it, internalize and adopt it. That everyone involved understand the method and believe / agree that it is a good idea – why would this be a better way of learning than the linear one? It's perhaps best done by practicing the model and exchange experiences.

Several mentioned a change in attitudes: to listen and respect the other opinions; to have the courage to dare to question our own assumption (as student, participant, stakeholder...); willingness to achieve something above just creating a position of power. The goal is to make students really learn and create lifelong learning – not stop after the exam

Motivation for teachers, professionals and students could be to learn something new, to have fun at work, that the new method makes it easier to “teach” and/or learn and/or that the using the method gives better results.

The importance of reflection on the learning itself was highlighted: It must be realized that reflection is needed not only on how things are, work etc. (first-order reflection on ontology) but also on our knowing and the processes by which we learn (second-order reflection on epistemology).

Question 2: How can we enable fruitful collaboration between the cases (WP2) and the other

A common platform for communication between different wp's and cases is important for the collaboration. This could include:

A plan of regular meetings; physical meetings and via Skype etc.



A specific format for short videos for sharing case experiences

In the second half of Nextfood, arrange conferences to share experiences from the cases and WP:s, as well as workshops of specific topics

A Facebook or LinkedIn group for sharing photos etc

The partners must get to know the other case studies and the deliverables of the work packages in order to make the link.

Another suggestion was to define 6 month objectives for each wp and update each other monthly by teleconference with few people.

Use of knowledge management systems.

Reporting structure – template for structure and how to report input from the cases (describing how, when, what and who?)

IV. Planning of implementation

A list of action was developed within each work package. It is available in the notes from the conference in Malmö.

V. Planning the immediate next steps

Urgent needs → and how the coordinators responded to it:

Urgent need for communication platform → A [sharepoint](#) and a [facebook page](#) has been set up for the urgent communication needs. A permanent communication platform will be developed within the project.

Lack of clear timeline and basis for daily working routine → A six month plan produced and communicated on [sharepoint](#)

Introduction of action learning understanding in each case study → [will be addressed in a workshop in September 2018](#)

Collaborations among case studies: which is the right way? → [will be addressed in a workshop in September 2018](#)

No clear publication strategy (mainly for academics) → The terms for publication is in the GA, publications will be discussed along with the research activities

How the case study to feed other WP activities: find a mechanism → [will be addressed in a workshop in September 2018.](#)

4 Appendix 1

Template for case development report

In order to be able to write the annual case development report (D2.5), input from each case is crucial. By filling in this template, we ensure a streamlined reporting of events from each case in accordance with the protocol and the manual. This template is therefore structured in the same way as the manual and the protocol.

Instructions for filling in the template

Before writing this report, it is essential that all data is anonymised.

Inside each box, there are suggested topics. Feel free to adapt the topics within the boxes to the relevant events in your case, but stay within a reasonable word count.

Especially for those who have conducted a workshop, we would like you to try reporting the outcomes of the workshops in the boxes below. If you are not able to fit the results in the categories we have made, please add the categories you feel are necessary.

Initial planning:

Under the following points, you should report on the outcomes of the initial planning workshop (kick-off workshop).

1. Exploring the present situation in the case

History of the case

Rich picture

2. Envisioning the intended shift

Envisioning the intended shift in the context of your case. Describe your vision for the intended shift and what this shift would mean in the context of your case

- 1) *An outline of the desired course/program*
- 2) *Specific ideas for moving from lecture hall, lecturing, syllabus, textbook etc. to peer learning, a diversity of learning arenas and teaching aids etc.*

3. Determining what it would require to make the intended shift

What would it require from:

- The learners,*
- The facilitators*
- The institutions*
- Other stakeholders*

Supporting forces

Hindering forces

4. Planning of implementation

What needs to be done when and by whom?

Overview of key actions

Timeline

5. Planning the immediate next steps

Explicit descriptions of the immediate next steps be each case responsible (related to realizing the agreed-upon intended shift)

Implementation

Under the following points, you should write what came out of the implementation of the first cycle of the educational activity (in accordance with the initial planning workshop).

1. Facilitators' and learners' reflection documents

Brief report from the reflection documents

2. Learners' course evaluations and feedback from key stakeholders

Course evaluations

Feedback from key stakeholders



3. Learners' self-assessment of competences

Self-assessment results

4. Mapping the learners' learning goals and competence development

Brief report from the interviews/exercises

5. Reflection sessions

Report from the reflection sessions



Reflect and plan again

Under the following points, you should write what came out of the reflection workshop(s).

1. Recapping the case activities

Here you should write what came out of the workshop on this point. The actual recapping of case activities are covered in the previous section.

2. Assessing the shifts

Assessment 1-10 of the shifts

Additional shifts

Discussion notes from workshop participants



3. Determining the supporting and hindering forces

Overview of forces

Ranking

4. Planning of how to build on the supporting forces and how to overcome the hindering forces

Workshop outcomes



5. Planning the next steps

What needs to be done when and by whom?

Overview of key actions

Timeline