



NEXTFOOD

Educating the next generation of professionals in the agrifood system

NEXTFOOD will contribute to a transition to more learner-centric, participatory, action-based and action-oriented education and learning in agrifood systems, which are becoming increasingly complex and require an increasing range of “hard” and “soft” skills. The objectives are to

- (01) identify the skills needed for a transition to more sustainable farming and food systems,
- (02) develop and test relevant curricula and training methods,
- (03) assess existing policy instruments for the training and education sector,
- (04) develop tools for evaluating quality of the training and education sector,
- (05) develop a platform for knowledge sharing.

NEXTFOOD will employ case-based action research to

- (I) develop relevant and effective education and training programmes for a transition to more sustainable agrifood systems,
- (II) generate new knowledge needed for similar achievements beyond the specific case.

The *case development (I)* will rest on a cyclic, iterative, participatory process consisting of

- (1) observation and description of the current situation in each case,
- (2) visioning of a desired future state,
- (3) analysis to identify key issues, solutions, supporting and hindering forces etc.,
- (4) elaboration and discussion of action plans,
- (5) implementation of plans,
- (6) iteration of steps (1–5) in a cyclical manner throughout the course of the project.

Simultaneously, *research (II)* will be done on qualitative and quantitative data generated during the case development process and analysed to answer research questions that are relevant beyond the specific case. This will produce new knowledge needed to drive the transition to the learning strategies required to educate and train professionals that can meet the very complex future demands in the agrifood sector.

The main research questions of NEXTFOOD are:

1. How can participatory and action-oriented learning strategies focusing on competences required to foster more sustainable agrifood systems, be designed and implemented?
2. What are supporting and hindering forces for such alternatives to establish and develop successfully?

Case name and name of contact person/leader

Action learning Agriscapes

American Farm School : Fillipos Papadopoulos

Alexander Technological Educational Institute of Thessaloniki: Prof Aristotelis Lymperopoulos

Brief description of the case

With the support of Stavros Niarchos Foundation the American Farm School (AFS) in collaboration with Rutgers, The State University of New Jersey have initiated the New Agriculture for a New Generation project which among others provides tailor-made training & mentoring services to groups of farmers in Central and Northern Greece for a period of at least 3 years.

The project is designed to facilitate the short and long term survival and prosperity of young farmers by familiarizing them with modern farming techniques and practices. The services offered are based on the model of the US university extension system. For that purpose, beneficiaries will be introduced to good agricultural practices focusing on smart farming techniques and technological advancements, and will be encouraged to operate in an electronic cloud environment.

For the needs of the NEXTFOOD project, 4 of the above groups will be selected to receive enhanced services by trainers who will participate in a training-of-trainers programme, aiming at familiarizing them with the principles of the Action Learning methodology developed by the Norwegian University of Life Sciences. The performance of another 4 groups will be monitored by the Greek NEXTFOOD team for benchmarking purposes.

. The four groups consist of:

- Three table grape producer groups in the locations of Kavala, Kilkis and Pela
- A group of sheep and goat farmers organized around a dairy in the location of Kavala .

The purpose of the NEXTFOOD project intervention will be to:

1. Monitor and evaluate the ability of professionals who have acquired the initial set of competencies identified by the Norwegian University of Life Sciences, in order to:
 - I. Impart knowledge and skills to farmers,
 - II. Influence the latter's behaviour in terms of adopting the advice offered,

Positively influence the operational performance of the beneficiary farmers.

1. Offer the opportunity to post-graduate students and academic staff of the Technological Educational Institute of Thessaloniki who have been introduced to the action-learning methodology to practice the relevant competencies in order to:
 - I. Evaluate the benefits of the action-learning methodology in terms of the professional competence of students
 - II. Integrate the methodology to the syllabi of relevant post-graduate courses of the Institute.
2. Create a community of practice (both physical and virtual) consisting of professionals, framers and their clients/ consumers in order to:
 - I. Facilitate the creation and dissemination of knowledge and skills, not only at an individual level, but also, and more importantly, at a group level through patterns of social interaction.
 - II. Initiate a spiral procedure of re-conceptualizing knowledge and capitalizing farmers' experiences.
 - III. Open-up a new spaces for knowledge and innovation in the agrifood sector that will have a continuous impact after the completion of the project.

In view of the above mentioned purpose, the performance of these 4 farmer groups and their trainers will compared with that of 4 comparable groups, who will receive advice from professionals not familiarized with the action-learning methodology.

How will the case contribute to achievement of the NEXTFOOD objectives by action research as the main strategy?

- (01) Based on the comparative performance of the two groups of farmers (consulted by action-learning trained and non-trained professionals), validate the professionals' skill set
- (02) Provide factual evidence underpinning the development of relevant curricula and training methods.
- (04) Through action research, contribute to the development of the quality assurance system of the action learning training programmes.
- (05) Through the creation of a community of practice, contribute with structure and content to a European platform of knowledge sharing.

How will the case study provide evidence to answer the NEXTFOOD research questions?

In order to provide valid research evidence to answer the NEXTFOOD research questions, a comparative, impact oriented, research methodology is adopted. The basic premise is that the vindication of any teaching/learning approach to professional education lies in its impact on the behaviour and ultimately the operational performance of the clients of the trained professionals – in this case the farmers.

For this purpose, two sets of farmers' performance criteria will be developed:

- A set of qualitative, behaviourally anchored, criteria that measure the rate and extent of adoption of professional advice by farmers. These criteria will include the development of farmers' competencies related to: 1) problem definition and analysis; 2) identification and evaluation of alternative solutions; 3) development of appropriate action plans; 4) setting eventual and project goals; 5) monitoring and evaluation of goal achievement;

The appropriate qualitative action research methodology that links farmers' performance with professional competence will be developed by the University of Lund.

The project will be based on participatory action research which involve the following steps: 1) locating the groups of farmers and identifying the gaps in their skills and competencies; 2) collecting data and interpreting the results in order to develop a plan for action/intervention; 3) implementing the plan (acting phase) and collecting data on its effectiveness; 4) evaluating the intervention by analysing the collected data; 5) monitoring and revising the action/intervention plan when needed.

Data will be derived from participant observation, semi-structured and informal interviews and analysis of key reports. The research process will be based on a planning-acting-evaluating spiral, which permits the continuous integration of new context-specific problems and site-specific solutions in the research agenda. *Qualitative* field data analysis will be accessible to all NEXTFOOD partners.

The knowledge sharing platform performance will be monitored and evaluated by the American Farm School team using primarily content analysis, augmented with social network patterns' analysis. Content analysis of the participant discussions will reveal dominant concern themes in relation both to the educational approach and to the field interventions.

Content analysis will focus on Epistemological acts and thresholds, usage and transformations of concepts within the community, recurrent themes of discourse and other discursive regularities and changes. Based on these findings, the Institute faculty will be able to ascertain the degree to which the action-learning methodology is being embedded into the

world view and practices of community participants and undertake corrective actions as necessary. The identification of different social/ professional roles adopted by participants will inform the ontological dimension of the action learning methodology.

Moreover, the analysis will focus on the different patterns of knowledge flow across the networks as well as on the effectiveness of different cycles of knowledge creation in practice. This in turn, will allow evidence-based investigations on the supporting and hindering forces for achieving the aims of the NEXTFOOD project.

The educational aspect of the case study will be evaluated in terms of student learning experience through self-report instruments and in epistemological terms by the Department of Agricultural Technology and Department of Food Technology of ATEITH.

Participant profile: Undergraduate students (final level) during their practical internships and professors; trained ATEITH staff.

- Assessment criteria
 - Generic Skills assessment framework (Placing emphasis on the process of teaching and learning, and actively involving students in that process, Building students' skills for peer- and self-assessment, Helping students understand their own learning, and develop appropriate strategies for "learning to learn")
 - Quality of assessment (well designed, clearly expressed, consistent, fair, reliable, transparent, appropriate amount)

Assessment will involve reflective statement and a questionnaire to allow the students to fully explain their views and justify their answers; Interviews with farmers undertaken by the trained consultant; observation reports of the trained consultants.

- Sources of feedback
 - Farmer-food stakeholder
 - Trained student
 - Trained consultant/professor
- Feedback analysis procedures
 - Qualitative (credible, dependable and confirmable)
 - Quantitative (Validity, reliability)
- Evaluation reports: quarterly, undertaken by the ATEITH staff
- Final report: undertaken by the ATEITH staff in collaboration with AFS staff.

The design and implementation of the overall case study will be subject to a balanced quality assurance and quality enhancement scheme that will involve the following:

- A panel of experts to ensure that similar standards operate across all the farmers' groups (Abbott and Boydell, 2011).
- Trainees' feedback questionnaires will be used as summative evaluations of the educational/training process (Kember, 2000).
- Frequent review meetings in which trainers and researchers identify potential fail points, propose corrective actions and design plans for improvement will be organized (Zuber-Skerritt and Teare, 2013).
- Qualitative assessment of achievement rates will be performed on a regular basis by the researchers, in terms of competencies and skills developed by learners (Gravells, 2010).

When do you plan to run the first cycle (starting and ending dates) of the educational activities (courses, seminars etc.)?

The first cycle of the educational activities we plan to start on July 2018 and ends on March 2019. The second cycle we plan to start on April 2019 and ends on September 2019.

Before each cycle a workshop will take place by involving all the students of the 2 Departments.

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What is the planned (expected) number of learners (students, farmers, etc.)?

In each semester 5 students from each Division of the Department of Agricultural Technology as well as 5 students from the Department of Food Technology.

What is the level of the course(s)? (BSc, MSc, other)

The level of the course is BSc

Who will be the teachers/learning facilitators?

Professors from the Department of Agricultural Technology (Division of Plant Production and Division of Animal Productio) and the Department of Food Technology of the ATEITH.

Advisors and observatories from the AFS

A description of the 'learning arenas':

Where will the activities take place, what will be the processes to enable co-learning between teachers, learners (students, farmers, etc.) and research persons in society (farmers and others)?

The activities for the Animal Scientists students will take place in the field of the animal farms for a period of 6 months, while the activities for the Plant Scientists students will take place in the field of the grape farms for a period of 6 months. Finally, the activities for the Food Science students will take place in the food processing industries for the same period.

In all cases the students for a period of 1 month have to be alone and to examine if their skills and learning outcomes are adequate to help them to manage the demands of the farmer. Then for a 2 months period they have to refer the gaps that they feel that have and together with a teacher and an advisor will try to improve themselves by covering the gaps by getting the appropriate experience. The next 2 months they will spend their time in the farm under the attendance of an observatory who will test the students if they have acquired the appropriate experience. The last month the students have to test themselves if they feel comfortable to stand up in the farm after the experience of the 5 months and together with the farmer has to refer the results.