



Newclim Workshop for PhD – Summer 2024

Erasmus Newclim project: “New trainings to manage climate & ecological transitions in perennial fruit crops”

Partnership of Newclim: L’Institut Agro (IA), the Swedish University of Agricultural Sciences (SLU), the German Ludwigshafen University of Business and Society (LUBS) and the University of Chile (UC).

General context and objective of Newclim: Climate change poses a significant challenge to agriculture and especially to perennial fruit crops such as grapevine and apple. Indeed, the long lifespan and the duration of the cycle of production slow down the adoption of new varieties and/or the improvement of cultivation management methods to adapt to environmental fluctuations. In addition, these crops are highly susceptible to a range of pests and diseases, while there is an imperious society demand for a reduction of inputs, particularly of phytosanitary compounds. In this regard, **new educational programs are needed to train undergraduates and graduates, but also professional players, about how to run more resilient cropping systems integrating up-to-date scientific and technical advances.** The project will be dedicated to the production of a **digital platform** displaying open source educational materials fed by research resources on the topic issued from the scientific and educational activities of the four universities. Those materials will be used to design innovative digital pedagogical tools with the support of PhD students. More specifically, a **"challenge based learning (CBL)" at Master level** called ‘Train Trip’ will be created to be tested, evaluated and improved during two summer schools dedicated to Masters students. This virtual train trip will make students travelling in the agricultural landscape and meet the group members representing different performers in the production chain from grape to bottle. The challenge will rent on finding possible solution to face major issues such as loss of productivity and sustainability due to climate changes at each train stop.

Objectives and organisation of the Newclim workshop for PhD:

What? Participation to a scientific and pedagogical seminar to design the CBL scenario ‘Train Trip’.

The activities during the seminar will include:

- A brainstorming to gauge the international main science fronts and complementarities emerging from the PhD research projects.
- A collective reflexion to propose four context scenarii and associated scientific questions and challenges.
- The aggregation of technical and scientific numerical materials to document the art of knowledge about the proposed scenarii and challenges.
- The creation of four summary sheets including contexts, scientific questions and state of art of the CBL which will be tested with Master students during a second dedicated workshop planned in 2025. A specific 1-day hybrid session will be opened for the PhD students to tutor the Master students.

Skills development?

- Communication: each PhD students will share with the group his research project in a popularized way.
- Transversally: the PhD will collectively work on the transposition of their research project to new scenarri and investigate the new emerging questions.
- Pedagogy : the PhD will propose educational summary sheets to be tested as part of the CBL by Master students and will be invited to tutor that students (by distance) during a 1-day session in 2025.

Who? Twelve PhD students from the four universities (IA, SLU, LUBS and UC)

Phd curricula related to sustainable agriculture and climate transition for apple and wine, e.g. of topics:

- sustainable cultivation-farming system in relation to site analysis
- plant protection, organic, biodynamic and alternative ways to promote plant- and soil health
- plant material -phenology, resistant varieties, to understand different growth and development patterns compared to climate attributes
- sustainable harvesting and transformation, in relation to crop quality and reduced crop losses and waste
- sustainable logistics to optimize the economic outcome, decrease energy input from field to fork.
- sustainable wine - apple and wine market -
- sustainable seasonal management and mechanization
- New pests
- Socio-cultural issues (water use/drought, energy use)

When? One week next June 2024 (to confirm)

Where? At the Swedish University of Agricultural Sciences.

How much? Free: travel, accommodation and food funded by Newclim project.