

## EMSACS

### Enhancing Modelling Skills for Agronomists and Crop Scientists

#### ABSTRACT

Modelling is a technique used in agronomic research to analyse, predict and project the interactions between genotype, environment and management in agro-ecosystems. Its use in agronomic advisory services and plant breeding is also developing rapidly in France and worldwide, in both private and public sectors. There is a current deficit of people with modelling skills in the European and global job market and that our project aims to address. Our primary planned action in this proposal was to develop and test a set of MSc/PhD courses modules (The EMSACS Course) to allow students to understand how computer models, can be used in research, crop breeding and management, cropping systems design and advisory work. After this course, students should be able to (i) understand the bio-physical processes they wish to model and (ii) use the appropriate tools and methods to develop, assess and run simulation models adapted to their research objectives and data. Our goal for the project was not to teach students about particular models or modelling systems (there already many in the market) - but to help them think and put into practice how they might develop models in their own research or advisory work.

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**Project number :** 1501-003

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**Project type :** AAP

**Research units in the network :** AGAP AIDA LEPSE LISAH

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**End date :** 2018-03-31

**Flagship project :** no

**Project leader :** Jacques Wery

**Project leader's institution :** InstitutAgro

**Project leader's RU :** ABSYS

**Budget allocated :** 147800 €

**Total budget allocated ( including co-financing ) :** 147800 €

**Funding :** Labex

#### RESULTS

The project allowed us to develop 7 new modules in English (with an average duration of 20 hours each) which are unique in the international courses on crop modeling. Some of the specific teaching documents developed for these module (especially in M2, P1 and P3) have inspired research work and some of the scientific publications submitted during this project. The testing of the modules has contributed to capacity development in conceptual and mathematical modeling for students who have had little or no exposure to modeling before, even for some of the PhD students. Comments from the students who attended the PhD school in December 2017 were very positive – see Appendix 3. Overall the test of the modules developed for this project involved 40 MSc students and 15 PhD students over the two years of the project.