



International training course for PhD students and young researchers

Integrated impact assessment and designing of Mediterranean agricultural systems in Dry Regions.

CREAD- Algiers, Algeria

27-29 October, 2019.

Day 1: Conceptual and scenario-based analysis of the role of diversities in the resilience of agricultural systems.

8h30-9h00: Welcome speech and presentation of the programme

Yacine Belarbi, Director, CREAD-Algiers,

Lakhdar khelifi, General Director; Ali Daoudi: Director of Poste Graduate; Mouhamed Mefti, Director of Extern Relation, ENSA-Algiers,

Mme K. Ghidouche Ait Yahia, Directrice Centrale au RELE, DGRSDT-Algiers,

Jacques Wery, Deputy Director General Research, ICARDA-Cairo,

Hatem Belhouchette, SemiArid Project Coordinator, CIHEAM-IAM-Montpellier.

9h- 10h00: Conceptualization of an issue into an agricultural system (30 min presentation; 30 min questions).

J. Wery (ICARDA)

10h00-10h30: Coffee break

10h30-11h30: Scenario based analysis of innovation into an agricultural system: Concepts, methods and an example of application (30 min presentation; 30min questions).

L. Hossard (INRA-France)

11h30-12h15: The main climate and socio-economic challenges of Algerian farming systems sustainability (25 min presentation; 20 min questions).

M. Laouar , and M. Latati (ENSA-Algiers)

12h15-13h30: Lunch

13h30-15h30: Group work (4 groups of 7-8 participants with different backgrounds in each group): application of systems conceptualization for scenario analysis methodologies to the test case.

L. Hossard (INRA-France)

15h30-16h: Coffee Break

16h-17h15: Group reports on (1) solutions of diversity towards more performant farming systems; (2) methodological questions/difficulties.

L. Hossard (INRA-France) and J. Wery (ICARDA)



Day 2: Modelling and analysis of the resilience of cropping systems; contribution of diversities.

8h30-9h30: introductory class: main steps to use a crop model or a cropping system model. 30 minutes class followed by 30 minutes discussion, including debriefing on online class

H. Belhouchette (CIHEAM-IAMM) on behalf of H. Marrou (Montpellier SupAgro)

9h30-10h00: Contextual lecture: cereal-legume cropping systems in the Setif plain. Common practices and rising issues

M. Latati (ENSA-Algiers)

10h00-10h30: Coffee Break

10h30-12h30: Application exercise: use of a CropSyst cropping system model to simulate the effect of changing practices on crop performances. Trainees will be guided with a series of questions requesting running simulations. This will induce reflection around the concepts of model use for risk evaluation, model sensitivity and validity domain of a model

H. Belhouchette, R. Chenoune (CIHEAM-IAMM)

12h30-14h00: Lunch Break

14h00-17h00: Application exercise: use of the CropSyst model to simulate crop production, water balance and nitrogen budget of cereal-legume cropping systems under different crop practices and climate and soil conditions. Discussions about model formalisms and parametrization will be engaged to start the exercise, and a demonstration of model functioning will be shown. Then, a series of questions related to trade-off analysis will bring groups of students to discuss sustainability-related indicators in response to the production choices.

H. Belhouchette (CIHEAM-IAMM) and M. Latati (ENSA-Algiers)

17h00-17h30: debriefing of the day.

Day 3: Analysis of the resilience of farms in arid areas: methodological issues and examples of application.

9h00-10h00: Bio-economic modeling: State-of-the-art and key priorities. 30 minutes class followed by 30 minutes discussion.

Y.A. Yigezu (ICARDA)

10h00-10h30: Coffee Break

10h30-11h00: Contextual lecture: Farming systems resilience: the case of the Setif agricultural production plain; Algeria.

R. Chenoune and H. Belhouchette (CIHEAM-IAMM), M. Latati (ENSA-Algiers)

11h00-12h30: Basics of optimization and simple Excel-based exercises for farm-level simulation modeling (5 groups of 6 participants with different backgrounds in each group).



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Y.A. Yigezu (ICARDA)

12h30-14h00: Lunch Break

14h00-16h00: Use of a simple Bio-Economic model to simulate the effect of socio-economic scenarios. Group work (5 groups of 6 participants with different backgrounds in each group).

H. Belhouchette, R. Chenoune (CIHEAM-IAMM)

16h00-16h30: coffee break

16h30-18h00: Concluding session

- Group work (six groups of five participants with similar type of research) on how each participant see the potential use (or reasons not to use) of the presented methods in its research / How can those help, or not? For which (expected) results? Which difficulties are foreseen?
- Group reports (2 min each) and collective debate on methods and their use
- Collective debate on the potential use/misuse, advantages and limits of models (crop models, bio-economic models) and participatory scenarios for agricultural development, including e.g., recommendations for farmers, decision support for farmers/advisers/policy makers, etc.

All trainers