PhD training on

"Modelling bioeconomic diversity of wheat-based systems: Typology analysis and soil-crop simulations using APSIM"

INRAT, 28th, 29th and 30th November 2018.

Context and description of the training:

This training in organised in the framework of the Consortium Research Program (CRP) on Wheat, led by CIMMYT and coordinated by ICARDA in the North African region. CRP Wheat is a global alliance for productive, climate-resilient and profitable wheat agri-food systems in lower and middle-income countries. Capacity development is an important part of CRP Wheat and it aims, among others, at building a new generation of wheat scientists among our NARS partners and within CIMMYT and ICARDA, together with a committed group of national public and private partners.

Within this framework, this training entitled "Modelling bioeconomic diversity of wheat-based systems: typology analysis and soil-crop simulations using APSIM", is intended to reflect on the wide diversity of wheat-based systems in Tunisia and North Africa. It also aims at providing a set of tools to analyse this diversity as well as to understand yield gaps of wheat under different agro-ecologies and the different trade-offs related to closing this gap. Particularly, the trainees will acquire skills related to the modelling of soil-water management to optimize the rainfall water use and water productivity. The trainees will also use the APSIM crop simulation model to be able to simulate different cropping scenarios that can help improving wheat yields and assess their related trade-offs.

Summary program:

Day	***Session***	***Content***
Day 1	Morning sessions	Definition of wheat-based systems and typology tools for assessing their diversity. Theoretical frameworks of crop modelling and yield gap analysis.
	Afternoon sessions	Software APSIM installation Presentation of APSIM model
Day 2	Morning sessions	Hands on session for initiation to the APSIM crop model Exercise 1 : Simulation of soil water dynamics Exercise2: Simulation of the effect of mulch on water dynamics and soil organic matter decomposition
	Afternoon sessions	Exercise 3 **:** Simulation of nitrate leaching Exercise 4 : Simulation of the effect of rotations
Day 3	Morning sessions	Working groups: case study simulation of crop residues scenarios management and assessment of respective trade-offs (resources/ production and socioeconomic point of view)
	Afternoon sessions	Presentation of simulations for each group and discussion Training evaluation and closing training session and certificates distributing

Participants:

The training is mainly devoted to candidates who fulfil the following requirements:

- Officially enrolled at a PhD program or recently obtained a PhD in agricultural sciences.
- Good background in agricultural (agronomic) practices and problems of the wheat-based systems in their country.
- Basic knowledge of crop simulation models.

Organization:

The training will be organized at the "Institut National de la Recherche Agronomique de Tunisie" (INRAT), during the 28th, 29th and 30th November 2018. Total number of participants will not exceed 20 trainees.

- There are no registration fees to the training.
- The participants should take in charge their trip and accommodation (a limited number of candidates without accommodation in Tunis can be taken in charge by ICARDA and hosted at "La Cité des Sciences").
- Lunches and coffee breaks for the 3 days of the training course will be offered to participants by the organizers.

Application to the training

Candidates who are interested to apply for this course should send their CV and motivation letters to the following email addresses: haithem.bahri@gmail.com ; a.frija@cgiar.org , before 15th November. Notification of acceptance will be sent by 22nd of November.

Trainers:

Mohamed Annabi, PhD (Agronomist)
Haithem bahri, PhD (Soil scientist and crop modeler)
Hatem Cheikh M'hamed, PhD (Agronomist and water use efficiency specialist)
Aymen Frija, PhD (Agricultural Economist).

Organizers: for any additional questions or queries, please contact ICARDA Tunis Office, at a.radhia@cgiar.org ; and haithem.bahri@gmail.com