Launching the applied phase of the project:

Developing a user-friendly application for smallholder farmers for detection of plant disorders

Organizer

International Center for Biosaline Agriculture (ICBA), Dubai, United Arab Emirates

Partner

Faculty of Biology, Barcelona University (UB), Barcelona, Spain

Guest of Honor speaker

Dr. Tarifa Alzaabi, Acting Director General, ICBA

Trainers

Dr. Henda Mahmoudi, Plant Physiologist, ICBA, UAE

Prof. Dr. Jose Luis Araus, Plant Physiology, Section of Plant Physiology, Faculty of Biology, UB, Spain

Prof. Dr. Shawn C. Kefauver, Co-Chair IEEE GRSS IDEA Committee, UB, Faculty of Biology, Dept. BEECA, Plant Physiology Section, Spain

Dr. Jose Armando Fernández G., Plant Physiology, Section of Plant Physiology, Faculty of Biology, UB, Spain

Dr. Ma. Luisa Buchaillot, Plant Physiology, Section of Plant Physiology, Faculty of Biology, UB, Spain

Coordinator

Mr. Ghazi Al-Jabri, Capacity Development Specialist, ICBA, UAE

Date: 26 - 28 July 2021

Venue: Center of Biotechnology of Borj Cedria (CBBC), Tunis Tunisia

Highlights

Annual crop losses due to pests and diseases range between 20% and 40%, undermining rural livelihoods, national economies, and food security. Intelligent systems can help farmers make prompt *in-situ* diagnoses and facilitate effective response to plant diseases and pest attacks in their early stages.

The International Center for Biosaline Agriculture (ICBA), in partnership with the University of Barcelona (UB), are developing a user-friendly application for smartphones that smallholder farmers can use to identify and address diseases and nutritional disorders in their crops, and thus minimize losses in their yields. The project targets farmers in four countries of the Middle East and North Africa (MENA) region where ICBA has ongoing projects, including Egypt, Morocco, Tunisia, and the United Arab Emirates (UAE). Subsequently, the application will be rolled out in other countries where ICBA operates and beyond.

This training workshop will give insights and hands-on training on the application targeting farmers and extension staff in Tunisia.

Targeted participants include extension officers from local research and extension institutes, academia and pioneer farmers in Tunisia.

By the end of the training workshop, participants will be able to:

1. Learn the principals of agri-preneurship for food security.

2. Understand the role of artificial Intelligence in crop management and protection from diseases and insects infections.

3. Differentiate between data management protocols.

4. Practice the smart application in the field.

Agenda

Monday 26 July 2021

08:30-09:00   Registration

09:00-11:00   **Inaugural of the applied phase of the Project "Developing a user-friendly application for smallholder farmers for detection of plant disorders"**

- *Welcome note* of host country, **Dr. Ahmed Debez**, CBBC
- *Welcome address of Project coordinaotor*, **Dr. Henda Mahmoudi**
- *Speech of ICBA*, **Dr. Tarifa Alzaabi**, Acting Director General, ICBA
- *Speech of* **Pr. Chedly ABDELLY**, DG, ANPR
- Introduction of Trainers and participants
- Keynote presentation: *The Role of Innovation & Technology in Achieving Global Food Security*, **Dr. Tarifa Alzaabi**, Acting Director General, ICBA
- *Farmers' Field Schools in the MENA region*, **Ghazi Al-Jabri**
- Signing of MoU between ICBA and CBBC

11:00-11:30   Group photo and coffee break

11:30-12:00   *Project Overview: UB/ICBA Collaborative Research,* **Henda Mahmoudi**

12:00-12:30   *Artificial Intelligence Overview and Workflow, ODK and ODK Downloader App*, **Shawn C. Kefauver**

12:30-13:00   *Field Data Collection Protocols and Pre-Processing*, **Ma. Luisa Buchaillot**

13:00-13:30   *AI Software for Disease Detection*, **Shawn C. Kefauver/José Armando Fernandez-Gallego**

13:30-14:00   *AI Applications for Crop Management,* **Jose Luis Araus**

14:00-15:00   Lunch break

15:00-15:30   *Crop Monitoring: Affordable, User Friendly Tools and Sensors,* **Jose Luis Araus**

15:30-16:00   *Image Analyses for Crop Breeding and Crop Management,* **Shawn C. Kefauver**

16:00-16:30   *RGB, Thermal and Multispectral Analysis of Salt Stress in Quinoa,* **Luisa Buchaillot**

16:30-17:00   *Closing Remarks and groups distribution,* **Henda Mahmoudi**

Tuesday 27 July 2021

08:30-14:30   Field practice on the applications - Group 1, **All trainers**

14:30-15:30   Course evaluation - Group 1, **Ghazi Al-Jabri**

Wednesday 28 July 2021

08:30-14:30   Field practice on the applications - Group 2, **All trainers**

14:30-15:30   Course evaluation - Group 2, **Ghazi Al-Jabri**