

## Program

**Tuesday, February 12; 14:00-16:20**

- ◆ **Chair:** Prof. Dr. Mohan Saxena  
Executive Secretary,  
International Dryland Development Commission
- ◆ **Rapporteur:** Dr. Vinay Nangia  
Senior Hydrologist, ICARDA  
Specially Appointed Associate Professor,  
IPDRE, Tottori University

Time	Title	Speakers
14:00-14:10	Opening remarks	Prof. Hisashi Tsujimoto
14:10-14:25	Water-saving wheat: tuning water use efficiency and drought tolerance using ABA receptors	Dr. Ryosuke Mega
14:25-14:40	Durum wheat ideotype for the drylands of tomorrow	Dr. Filippo Bassi and Dr. Michael Baum
14:40-14:55	Manipulation of centromere specific histone H3 (CENH3) in crop plants for haploid breeding: towards sustainable food production in dryland	Dr. Takayoshi Ishii
14:55-15:10	Pulses for harvesting more from less in dry areas	Dr. Shiv Kumar Agrawal
15:25-15:40	How to find effective root symbiotic microbes for crops? -Toward the use of customized microbes for sustainable agriculture in an object area-	Dr. Takeshi Taniguchi
15:40-15:55	Barley improvement for marginal lands	Dr. Ramesh Verma
15:55-16:15	Discussion	
16:15-16:20	Crop improvement for the dry areas/ Conclusions and closing remarks	Dr. Michael Baum

## Crop Improvement for Sustainable Production in Marginal Regions

**TU-ICARDA Satellite Symposium**  
**At 13th International Conference on Development of Drylands**  
**February 12, 2019, 14:00-16:20**  
**Hotel Indana Palace Jodhpur, India**

Jointly Organized by



**IPDRE**  
International Platform for  
Dryland Research and Education

**International Platform for Dryland  
Research and Education,  
Tottori University, Japan**



**International Center for Agricultural  
Research in the Dry Areas**

## Theme

The marginal region is the place where one or more of the factors necessary for plant production do not reach the level of the requirement. To achieve the goal to produce the necessary amount of crops under the changing climate, we need to extensively improve the crop varieties combining knowledge and technologies of molecular biology, genetics, physiology, informatics, modeling, and others. This satellite symposium is aimed to exchange the research activities among researchers studying cereals, pulses, and root symbiotic microbes, and know the present status and prospects to develop marginal regions for sustainable crop production.

## Chair



**Mohan Chandra Saxena** is a prominent scientist in the field of crop physiology, soil-water-plant relations, pulses agronomy, dryland agriculture who served as assistant director general and senior advisor to the director general at ICARDA. He is a fellow of Indian Society of Agronomy, Indian Society of Pulses Research and Development and American Society of Agronomy. He is a recipient of many awards and honors such as Swaminathan Award for Leadership in Agriculture (2012) and Lifetime Achievement Award, Indian Society of Pulses Research & Development (2017).

## Speakers



**Hisashi Tsujimoto** is Vice Director and professor of Arid Land Research Center (ALRC), Tottori University where he conducts and supervises research related to general genetics, cytogenetics and breeding science with the emphasis on wheat breeding. He is currently leading a Science and Technology Research Partnership for Sustainable Development (SATREPS) project on development of climate change resilient innovative technology for sustainable wheat production in partnership with Sudan.



**Ryosuke Mega** is postdoctoral researcher of ALRC, Tottori University. He is a crop scientist using plant physiological and molecular biological approach. He found the mechanism to save water consumption of plant and established “water-saving drought tolerant” wheat. He is currently researching multiple stress (heat and drought) tolerant wheat.



**Filippo Bassi** is senior scientist leading ICARDA's durum wheat breeding program, which aims to deliver superior varieties with increased yields under changing climate. He works in the rural areas of Ethiopia, India, Senegal, Mauritania, Lebanon, Algeria, and Tunisia to improve the local plant scientists' capacity.



**Takayoshi Ishii** is junior associate professor of ALRC, Tottori University. At ALRC, he works on plant cytogenetics for crop improvement. Especially, he is interesting about 1. Elucidation of chromosome elimination mechanism in hybrid plants, 2. Germplasm enhancement by wide hybridization and 3. Acceleration of breeding by manipulation of centromere-specific histone H3 variant (CENH3).



**Shiv Kumar Agrawal** leads ICARDA's Food legumes program, which aims to deliver improved germplasm of lentil, kabuli chickpea, faba bean, and grass pea to national partners in South Asia, sub-Saharan Africa, West Asia, and North Africa. He works on developing short-duration, climate-smart varieties of lentil and grass pea with high iron and zinc content for sustainable intensification of cereal-based cropping systems.



**Takeshi Taniguchi** is an Associate Professor of ALRC, Tottori University. He works on the ecology, function and application of plant symbiotic microorganisms in drylands. His current research focuses on the finding of effective root endophytic microbes for agriculture and ecosystem restoration using metagenome and network analyses.



**Ramesh Verma** is a principal scientist with ICARDA's biodiversity and crop improvement program. He works on barley improvement for abiotic- and biotic-stress tolerance. His research also involves the improvement of the malting quality of barley and its nutrition, as well as molecular markers and QTL identification for barley diseases.



**Michael Baum** is director of ICARDA's Biodiversity and Crop Improvement program comprising 30 scientists and 67 technical staff whose work range from crop breeding and cereal and legume pathology to virology and pollinators. Since joining ICARDA in 1992 as biotechnologist, he has overseen ICARDA's biodiversity and crop management work in a number of countries across the MENA region.