

## Workshop on Water and Food Security under Changing Environments

### Time table of the presentations

| <b>June 1</b>                             |                                  |   |   |
|---|----------------------------------|---|---|
| <b>Time</b>                               | <b>Presenter</b>                 | <b>Topic</b>  | <b>University/Institution</b>                           |
| 8:30-8:50                                 | Vice-president of the University | Welcome attendants  | China Agricultural University                           |
| <b>Session 1: Water and Food Security</b> |                                  | <b>Chair: Prof. Guanhua Huang</b>   |   |
| 8:50-9:20                                 | Shaozhong Kang                   | Improving water productivity for China's food security under changing environment   | China Agricultural University                           |
| 9:20-9:50                                 | Graham Farquhar                  | Predicted and observed multi-decadal changes in climate, with particular reference to precipitation and crop demand for water | Australian National University                          |
| 9:50-10:20                                | Brent Clothier                   | Measuring and modelling the water use of tree crops under drought conditions: Impacts and solutions                           | New Zealand Institute for Plant & Food Research Limited |

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| 10:20-10:40  | Break, photo taking |  |   |
| <b>Session 2: Crop Responses to Water Stress</b>             |                     |  | <b>Chair: Prof. Graham Farquhar</b>                                       |
| 10:40-11:10  | Robert Sharp        | Maize nodal root growth under water deficits: a (re)heightened priority  | University of Missouri  |
| 11:10-11:40  | Jianhua Zhang       | Water-saving cultivation of major cereal crops   | Chinese University of Hong Kong   |
| 11:40-12:10  | Felix Fritschi      | Improving soybean drought tolerance: phenotypes to genotypes   | University of Missouri  |
| 12:10-13:30  | Lunch               |  |   |
| <b>Session 3: Crop Water Use Estimation and Modeling (1)</b> |                     |  | <b>Chair: Dr. Brent Clothier</b>  |
| 13:30-14:00  | Luis Santos Pereira | Water productivity and economic water productivity ratio using the dual Kc approach. an application to supplemental irrigated green peas and irrigated maize | University of Lisbon  |
| 14:00-14:30  | Xurong Mei          | Enhancing resilience and intensification for dryland productivity  | Institute of Environment and Sustainable Development in Agriculture, CAAS |

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| 14:30-15:00  | Shabtai Cohen | Hydraulic limitations of trees and a model of canopy conductance and water use   | Institute of Soil, Water and Environmental Sciences, Israel |
| 15:00-15:30  | Haijun Liu    | Dynamics of soil salt and water, maize growth and evapotranspiration to drip irrigation regimes under mulch condition in the Hetao Irrigation District | Beijing Normal University                                   |
| 15:30-15:50  | Break         |  |   |
| <b>Session 4: Crop Water Use Estimation and Modeling</b> |               |  | <b>Chair: Dr. Shabtai Cohen</b>                             |
| 15:50-16:20  | Ray Anderson  | Using eddy covariance and flux partitioning to assess basal, soil, and stress coefficients for crop evapotranspiration models                          | USDA-ARS, U.S. Salinity Laboratory                          |
| 16:20 – 16:50  | Jason Hubbart | Ecosystem CO <sub>2</sub> and H <sub>2</sub> O Flux: the Missouri AmeriFlux Site, application for quantifying crop productivity and water use          | University of Missouri                                      |
| 16:50 – 17:20  | Risheng Ding  | Measurement and modeling of crop water use in an arid inland region  | China Agricultural University                               |
| 17:20 – 17:50  | Zohrab Samani | Calculating crops water requirement: from theory to remote sensing   | New Mexico State University                                 |

| <b>June 2</b>  |                  |   |   |
|--|------------------|---|---|
| <b>Time</b>  | <b>Presenter</b> | <b>Topic</b>  | <b>University/Institution</b>                     |
| <b>Session 5: Regional Hydrological Measurement and Modeling</b> |                  |   | <b>Chair: Prof. Jianhua Zhang</b>                 |
| 8:30-9:00  | Guanhua Huang    | Agro-hydrological modeling and water productivity assessment in the oasis semi-arid region northwest China                                      | China Agricultural University                     |
| 9:00-9:30  | Lixin Wang       | Plant water use and agricultural yield reduction - measurements and data synthesis  | Indiana University-Purdue University Indianapolis |
| 9:30-10:00   | Lu Zhang         | Understanding controls on regional evapotranspiration and implications for hydrological modeling  | Land and Water, CSIRO, Australia                  |
| 10:00-10:20  | Break            |   |   |
| <b>Session 6: Irrigation Strategies for Food Security</b>        |                  |   | <b>Chair: Prof. Robert Sharp</b>                  |
| 10:20-10:50  | Allan Andales    | The Water Irrigation Scheduler for Efficiency (WISE) online tool for Colorado   | Colorado State University, USA                    |
| 10:50-11:20  | Manoj Shukla     | Irrigation water management for water scarce semi-arid areas: opportunities for augmentating water resources and improving water use efficiency | New Mexico State University                       |

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| 11:20-11:50   | Taisheng Du   | Deficit Irrigation and sustainable water resource strategies in agriculture for China's food security  | China Agricultural University  |
| 11:50-12:20   | José Chávez   | Estimating crop water use or ET at different temporal and spatial scales   | Colorado State University  |
| 12:20-13:30   | Lunch         |  |  |
| <b>Session 7: Advances in Agricultural Water Management</b> |               |  | <b>Chair: Prof. Allan Andales</b>                                    |
| 13:30-14:00   | Alvin Smucker | A 21 <sup>st</sup> century long-term water conservation technology that greatly expands agricultural production in China                           | Michigan State University  |
| 14:00-14:30   | Yuehu Kang    | Introduction of theories and technologies for agriculture and vegetation construction in severe saline-alkali land using drip irrigation           | Institute of Geographic Sciences and Natural Resources Research, CAS |
| 14:30-15:00   | Jiusheng Li   | Wetting patterns and bacterial distributions in different soils from a surface point source applying effluents with varying E. coli concentrations | China Institute of Water Resources and Hydropower Research           |
| 15:00-15:30   | Ping Guo      | Decision support system of water resources management under uncertainty  | China Agricultural University  |
| 15:30-15:50   | Break         |  |  |

| <b>Session 8: Integrated Measures for Food Security</b> |  |  | <b>Chair: Dr. Lu Zhang</b>                           |
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| 15:50-16:20   | Thomas Trout   | Assessing water productivity for field crops   | USDA-ARS, Water Management Research Unit             |
| 16:20-16:50   | Xiying Zhang   | Integrated agronomic practices to improve farmland water use efficiency in the North China Plain | Institute of Genetics and Developmental Biology, CAS |
| 16:50-17:20   | Kendall DeJonge  | Infrared thermometry and canopy temperature to quantify water stress                             | USDA-ARS, Water Management Research Unit             |
| 17:20-18:20   | Concluding remarks and discussions on potential collaborations |  |  |