



International Conference
Climate Smart Agriculture: the Way of Farming for 21st Century
October 8-9, 2018
Department of Agronomy, MNS-University of Agriculture, Multan-Pakistan



Conference Program

Inaugural Session

8th October, 2018 (Monday)

Venue: Main Playground (Canopy) MNS-UAM

Time	Activity
8:30 am – 9:30 am	Arrival of guests and registration
9:30 am – 10:00 am	Visit of research farm, MNS-UAM and agriculture complex
10:00 am – 10:10 am	Qirat and Naat
10:10 am – 10:20 am	Opening remarks and conference overview (Prof. Dr. Asif Ali, Vice Chancellor, MNS-UAM)
10:20 am – 10:40 am	Agricultural ecosystems as the key for combatting climate change and meeting the 2 °C goal of the Paris Climate Agreement. (Prof. Dr. Claudia Kammann, Department for Applied Ecology / Climate Change Research for Special Crops, Hochschule GEISENHEIM University, Germany)
10:40 am – 10:55 am	Agriculture research in changing climate scenarios. (Dr. Abid Mahmood, DG Research, Punjab)
10:55 am – 11:10 am	Policy alternatives for climate smart agriculture. (Prof. Dr. Iqrar Ahmad Khan, Chief of Party, USPCAS-AFS, UAF)
11:10 am – 11:25 am	Address by the Chief Guest (Mr. Malik Nauman Ahmad Langrial, Minister for Agriculture, Punjab)
11:25 am – 11:30 am	Vote of Thanks (Dr. Abdul Ghaffar, Chairman Department of Agronomy, MNS-UAM)
11:30 am – 12:00 pm	Tea Break/Group Photo
Plenary Session Chair: Prof. Claudia Kammann Co-Chair: Dr. Abid Mahmood Venue: Main Playground (Canopy) MNS-UAM	
12:00 am – 12:20 am	21 st century farming: is more food with less water possible? (Prof. Axel Garcia y Garcia, Department of Agronomy and Plant Genetics, University of Minnesota, USA)
12:20 am – 12:40 pm	Impact of climate change and adaptation strategies for cropping systems of Punjab-Pakistan. (Prof. Dr. Ashfaq Ahmad, Chair, Climate Change, USPCAS-AFS, UAF)
12:40 pm – 1:00 pm	The progress in agriculture earth observation and simulation for CSA system development. (Prof. Jiahua Zhang, Chief Scientist in Global Change and Disaster Remote Sensing Institute of Remote Sensing and Digital Earth (RADI), China)
1:00 pm – 1:20 pm	Making efficient use of fertilizers: Using the right tools for the job under climate change scenarios (Prof. Fabián G. Fernández, Department of Soil, Water, and Climate, University of Minnesota, USA)
1:20 pm – 1:40 pm	Impact of biochar on the performance of the halophytic crop <i>Chenopodium quinoa</i> to various abiotic stresses



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	(Prof. Hans-Werner Koyro, Institute of Plant Ecology, Justus-Liebig-University Gießen, D-35392 Gießen, Germany)
1:40 pm – 2:00 pm	Can we use crop modeling for identifying climate change adaptation options? (Dr. Marc Corbeels, Agro-ecology and sustainable intensification of annual cropping systems, CIRAD, France)
2:00 pm – 2:10 pm	Concluding remarks of the chair
2:00 pm – 3:00 pm	Lunch break
Technical Session-I (October 8, 2018) GHGs and Carbon Sequestration to Mitigate Climate Change Chair: Prof. Dr. Claudia Kammann Co-Chair: Prof. Hans-Werner Koyro Venue: Main Playground (Canopy) MNS-UAM	
3:00 pm -3:15 pm	Climate change, atmospheric oxidants and crop yield in Pakistan (Prof. Dr. Muhammad Fahim, Institute of Environmental Sciences and Engineering NUST Islamabad, Pakistan)
3:15 pm -3:30 pm	Interactive effect of elevated carbon dioxide, magnesium deficiency and drought stress on wheat. (Dr. Muhammad Asif, Faculty of Engineering and Natural Sciences, Sabanci University, Istanbul, Turkey)
3:30 pm -3:45 pm	Carbon sequestration potential of various land use systems under changing climate of arid region. (Dr. Hafiz Mohkum Hammad, COMSATS University, Islamabad-Pakistan.)
3:45 pm -4:00 pm	Future breeding strategies for dealing with climate change. (Dr. Faheem Shahzad Baloch, Department of Field Crops, Faculty of Agricultural and Natural Science, Abant Izzet Baysal University, Bolu-Turkey)
4:00 pm -4:15 pm	Synthetic effects of biochar addition and nitrogen fertilization on greenhouse flux from anaerobic rice paddy (Dr. Muhammad Shaukat, Department of Agronomy, University of Agriculture, Faisalabad-Pakistan).
4:15 pm -4:30 pm	Improving Productivity of Cereal-Based Cropping Systems through application of Biochar and Legumes into the Summer Gap. (Prof. Dr. Muhammad Arif, Department of Agronomy, The University of Agriculture, Peshawar, Pakistan).
4:30 pm -4:45 pm	Exogenously Applied Plant Growth Regulators Affect Heat-stressed Rice Pollens (Dr. Shah Fahad, Department of Agronomy and stress Physiology, The University of Swabi, Khyber Pakhtunkhwa- Pakistan.)
4:45 pm -5:00 pm	Future prospects: Adaptation strategies to diminish the effects of climate change on Livestock (Dr. Kashif Hussain, Pakistan Center for Advanced Studies in Agriculture and Food Security (USPCAS-AFS) UAF
5:00 pm -5:15 pm	Regenerative farming in 21 st century; Biochar leads the way to climate smart agriculture (Dr. Fahad Rasul, Department of Agronomy, University of Agriculture, Faisalabad-Pakistan).
5:15 pm -5:30 pm	Concluding remarks by the chair
Technical Session-II (October 8, 2018) Global Warming and Climate Change Impacts on Agriculture Chair: Prof. Dr. Ashfaq Ahmad Co-Chair: Prof. Axel Garcia y Garcia	



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Venue: Seminar Hall, MNS-UAM	
3:00 pm -3:15 pm	Inter-annual variation of summer monsoon over Pakistan (Dr. Dildar Hussain Kazmi, Pakistan Meteorological Department Islamabad)
3:15 pm -3:30 pm	Effect of climate change (mainly CO ₂) on grapevine-pest interactions (Dr. Moustafa Selim, Department of plant protection, Hochschule Geisenheim University, Germany)
3:30 pm -3:45 pm	Climate change Impacts on Water availability Regions of Pakistan (Dr. Wajid Nasim, Department of Environmental Sciences, COMSATS University Islamabad (CUI), Pakistan)
3:45 pm -4:00 pm	Effect of terminal heat stress in cotton and management strategies (Abdul Shakoor, Department of Agronomy, University of Agriculture Faisalabad Pakistan).
4:00 pm -4:15 pm	Big data for climate smart agriculture (Dr. Azeem, Department of Irrigation and Drainage, University of Agriculture, Faisalabad, Pakistan)
4:15 pm -4:30 pm	Impacts of climate on agriculture and its causes: a case study of Taluka Kamber, Sindh, Pakistan (Dr. Noor Hussain Chandio, Chairman, Department of Geography, Shah Abdul Latif University, Khairpur, Sindh, Pakistan).
4:30 pm -4:45 pm	Calculation Actual and Potential Evapotranspiration by developing a Tool for MODIS Product (Dr. Nasrin Salehnia, Faculty of Agriculture, Water/Agro meteorology Department, Ferdowsi University of Mashhad, Mashhad, Iran)
4:45 pm -5:00 pm	High temperature stress in wheat and limited role of plant growth regulators (Dr. Muhammad Zahid Ihsan, Cholistan Institute for Desert Studies (CIDS), The Islamia University of Bahawalpur (IUB).
5:00 pm -5:15 pm	An assessment of morphological and physiological indicators of thermo-tolerance in field grown cotton (Dr. Fiaz Ahmad, Central Cotton Research Institute, Multan-Pakistan)
5:15 pm -5:30 pm	Concluding remarks by the chair
Technical Session-III (October 8, 2018)	
Food and Nutrition Security (bio-fortification and related approaches)	
Chair: Prof. Dr. Nazim Hussain Labar, Co-Chair: Prof. Dr. Muhammad Arif	
Venue: Computer Lab. (Ground Floor), MNS-UAM	
3:00 pm -3:15 pm	Validation of nitrogen fertilizer application rates and timings to wheat crop under the changing climate of Pakistan (Prof. Dr. Mohammad Akmal, Department of Agronomy, The University of Agriculture Peshawar-Pakistan).
3:15 pm -3:30 pm	Local solution to combat malnutrition (Mr. Javed Iqbal, Executive Coordinator/Manager Programs, Doaba Foundation, Pakistan)
3:30 pm -3:45 pm	Agronomic biofortification of vegetables a tool for combating hidden hunger (Mr. Nabeel Ahmad Ikram, Department of Agronomy, MNS- University of Agriculture Multan-Pakistan).
3:45 pm -4:00 pm	Green biotechnology can help sustainable crop production and food security in the era of climate change (Mr. Muhammad Tahir Khan, Biotechnology Group, Nuclear Institute of Agriculture (NIA), Tandojam, Hyderabad, Pakistan).



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4:00 pm -4:15 pm	Combined application of organic and inorganic fertilizer improved the wheat crop production, root structure and soil health (Dr. Naeem Sarwar, Department of Agronomy, Bahauddin Zakariya University Multan-Pakistan).
4:15 pm -4:30 pm	The Adaption of Climate Smart Agriculture in Mitigating Malnutrition through Aegis of Biofortified Staple Food Crops Dr. Muhammad Iqbal Makhdum, HarvestPlus Pakistan, Crop Sciences Institute, National Agricultural Research Institute, Islamabad-Pakistan)
4:30 pm -4:45 pm	Evaluating hyperspectral vegetation indices for leaf area index estimation of <i>Oryza Sativa</i> L. at diverse phenological stages (Dr. Mairaj Din, Key Laboratory of Arable Land Conservation, College of Resource and Environment Huazhong Agriculture University Wuhan, China).
4:45 pm -5:00 pm	Increase fruit fly infestation in Citrus fruit (Kinnow Mandarin) under changing climate scenario in the Punjab Province, Pakistan (Mr. Rab Nawaz, Pir Mehr Ali Shah- Arid Agriculture University Rawalpindi, Pakistan)
5:00 pm -5:15 pm	Comparative effects of salicylic acid and calcium carbide on morphological characteristics of sweet pepper (Dr. Wazir Ahmad, Soil and Environmental Science, MNS-UAM)
5:15 pm -5:30 pm	Concluding remarks by the chair
Technical Session-IV (October 9, 2018) Challenges and Opportunities of Precision Agriculture in Pakistan Chair: Prof. Jiahua Zhang Co-Chair: Dr. Jehnzaib Masood Cheema Venue: Seminar Hall, MNS-UAM	
9:15 am – 9:30 am	Efficient Use of Fertilizer: A Key Component of Climate Smart Agriculture (Mr. Rashid Manzur, Manager Marketing (AS), FAC Multan, FFC Limited-Pakistan)
9:30 am – 9:45 am	Spray Droplet Uniformity Testing Of Hexa Copter Drone System (Dr. Saddam Husain, Department of Irrigation and Drainage, University of Agriculture, Faisalabad, Pakistan)
9:45 am -10:00 am	Remote Estimation of Wheat Yield Based on Vegetation Indices Derived from Time Series Data of Landsat 8 imagery (Syed Muhammad Zaigham Abbas, Department of Agronomy, PMAS- Arid Agriculture University, Rawalpindi).
10:10 am -10:15 am	Mitigation of Temperature, Drought and Viral Diseases Stress in Vegetable Crops (Dr. Saeed Ahmad Shah Chishti, Vegetable Research Institute, Ayub Agricultural Research Institute, Faisalabad, Pakistan.)
10:15 am -10:30 am	Study of land use/land cover changes using RS and GIS (Mr. Sajjad Hussain, Department of Environmental Sciences, COMSATS University Islamabad, Vehari Campus, Pakistan).
10:30 am -10:45 am	Precise droplet size measurement to mitigate pesticides climate issues (Mr. Zeeshan Haydar, Department of Farm Machinery and Power, University of Agriculture, Faisalabad)



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10:45 am -11:00 am	Expression analysis of plasma membrane intrinsic protein (PIP) and tonoplast intrinsic protein (TIP) genes in various genotypes of sunflower under moisture deficit environment (Ms. Tania Safdar, Institute of Plant Breeding and Biotechnology, MNS-UAM).
11:00 am -11:15 am	Mitigation of Temperature Stress in Cotton by Using Seed Enhancement and Agronomic Approaches (Mr. Talha Javed, Department of Agronomy, University of Agriculture, Faisalabad, Pakistan)
11:15 am -11:30 am	Concluding remarks by the chair
11:30 am -12:00 pm	Tea Break
Technical Session-V (October 9, 2018) Prediction and Decision Support Modeling Chair: Prof. Axel Garcia y Garcia Co-Chair: Prof. Dr. Ashfaq Ahmad Venue: Seminar Hall, MNS-UAM	
12:00 pm – 12:15 pm	Implementation of long-term trend preserving bias correction methods (DQM and QDM), for extreme climatic and hydrological events over Pakistan (Dr. Shaukat Ali, Global Change Impact Studies Centre (GCISC), Ministry of Climate Change, Islamabad-Pakistan).
12:15 pm – 12:30 pm	Climate Change Impact assessment in Rice-Wheat cropping system of Punjab-Pakistan (Dr. Syed Aftab Wajid, Department of Agronomy, University of Agriculture Faisalabad).
12:30 pm – 12:45 pm	Crop modeling; an artistic tool for risk management in Agriculture Dr. Tasneem Khaliq, Department of Agronomy, University of Agriculture Faisalabad-Pakistan).
12:45 pm – 1:00 pm	Modeling rain-fed cereal-based cropping systems for climate smart agriculture (Dr. Mukhtar Ahmed, Pir Mehr Ali Shah Arid Agriculture University Rawalpindi-Pakistan).
1:00 pm – 1:15 pm	Predicting Future Wheat Irrigation in Pakistan under Climate Change (Dr. Kashif Nazir Qureshi, Assistant Professor - Environmental Sciences, University of Agriculture, Faisalabad-Pakistan).
1:15 pm -1:30 pm	Studying Climate Change and Agriculture by using Remote Sensing and GIS in Pakistan (Mr. Muhammad Sami ul Din, Department of Environmental Sciences, COMSATS University Islamabad, Vehari Campus, Pakistan).
1:30 pm -1:45 pm	Climate Smart Interventions of Small-Holder Farming Systems in Punjab, Pakistan (Dr. Asmat Ullah, Agro Climatology Lab. Department of Agronomy, University of Agriculture, Faisalabad-Pakistan).
1:45 pm -2:00 pm	Breeding rice for yield stability in drought prone areas by exploiting the potential of multi-floret genotypes (Dr. Muhammad Abu Bakar Saddique, Institute of Plant Breeding and Biotechnology, MNS-UAM).
2:00 pm -2:15 pm	Phenotypic variation in leaf traits in response to climate change (Ms. Sabah Merrium, Institute of Plant Breeding and Biotechnology, MNS-UAM).
2:15 pm -2:20 pm	Concluding remarks by the chair
2:20 pm -3:10 pm	Lunch and prayer break



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Technical Session-VI (October 9, 2018) CSA Innovations, Strategies and Solutions Chair: Dr. Marc Corbeels Co-Chair: Dr. Hafiz Muhammad Akram Venue: Computer Lab. (Ground Floor), MNS-UAM	
9:15 am – 9:30 am	Smart Agriculture through Computerized Tools under Climate Change Conditions (Dr. Nasrin Salehnia, Faculty of Agriculture, Water/Agro meteorology Department, Ferdowsi University of Mashhad, Mashhad, Iran)
9:30 am – 9:45 am	Possible Agronomic dimensions for Climate Smart Agriculture in Pakistan (Prof. Dr. Nazim Labr, Department of Agronomy, BZU- Pakistan).
9:45 am -10:00 am	Impact of decadal nitrogen fertilization on total SOM and its pools stability estimated by 13C natural abundance after 17 years of maize grown on C3 soil (Dr. Muhammad Shahbaz , Department of Soil and Environment, Swedish University of Agricultural Sciences (SLU), Uppsala, Sweden)
10:10 am -10:15 am	Impact of seed production industry relationship on climate smart agriculture decisions for 21 st Century farming Systems (Prof. Dr. Bashir, Department of Agronomy, The University of Agriculture, Peshawar, Pakistan).
10:15 am -10:30 am	Developing climate smart wheat through GA sensitive Rht gene system (Prof. Dr. Zulfiqar Ali/ Mr. M. Arslan Khalid, Institute of Plant Breeding and Biotechnology, MNS-UAM).
10:30 am -10:45 am	Bio-priming: a smart agronomic practice to mitigate drought stress in maize crop (Dr. Hamid Nawaz, Department of Agronomy, The Islamia University Bahawalpur, Pakistan).
10:45 am -11:00 am	Combine application of silicon and selenium improve the physiological and biochemical attributes of wheat seedlings under drought stress (Dr. Abdul Sattar, College of Agriculture, Bahauddin Zakariya University, Bahadur Campus Layyah, Pakistan).
11:00 am -11:15 am	Organic farming and Pakistan (Saim Rashid, Go Green Organic Technologies)
11:15 am -11:30 am	Concluding remarks by the chair
11:30 am -12:00 pm	Tea Break
Technical Session VII (October 9, 2018) Resource Use Efficiency Chair: Prof. Fabián G. Fernández, Co-Chair: Dr. Aftab Wajid Venue: Computer Lab. (Ground Floor), MNS-UAM	
12:00 pm – 12:15 pm	A critical review: on farm resource management - a way to climate smart agriculture (Dr. Hafiz Muhammad Akram, Agronomic Research Institute, AARI, Faisalabad)
12:15 pm – 12:30 pm	Selection of promising date-palm (Phoenix dactylifera L.) germplasm for salt-affected soils in Pakistan (Dr. Tanveer ul Haq, Department of Soil and Environmental Science, MNS-UAM)
12:30 pm – 12:45 pm	Cadmium induced changes in biochemical profile of wheat genotypes under in vitro conditions (Dr. Abdul Qayyum, Department of Agricultural Sciences, University of Haripur)
12:45 pm – 1:00 pm	Strip cropping of chickpea, arugula and lentil improves soil moisture conservation in Mithawan spate irrigated area of Dera Ghazi Khan Punjab (Pakistan) (Dr. Khuram Mubeen, Department of Agronomy, MNS-UAM).



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1:00 pm – 1:15 pm	Response of different sugar beet (<i>Beta vulgaris</i> L.) genotypes to foliar application of potassium (Dr. Ahmad Sher, College of Agriculture, Bahauddin Zakariya University, Bahadur Sub Campus Layyah).
1:15 pm -1:30 pm	Water purification potential of seed extracts of <i>Moringa olifera</i> and <i>Syzygium cumini</i> (Dr. Saima Bibi, Department of Botany, The Women University, Multan, Pakistan).
1:30 pm -1:45 pm	Genetic diversity among genotypes of <i>Rosa centifolia</i> and <i>Rosa damascene</i> (Dr. Gulzar Akhtar, Department of Horticulture, MNS-UAM).
1:45 pm -2:00 pm	Does Silicon Nutrition Invigorate Salt Tolerance in Barley (<i>Hordeum vulgare</i> L.) in the Wake of Climate Change (Dr. Sibgha Noreen, Institute of Pure and Applied Biology, Bahauddin Zakariya University, Multan-Pakistan).
2:00 pm -2:15 pm	Influence of plant growth regulators on growth and yield attributes of soybean (<i>Glycine max</i> L.) under rain-fed conditions of Rawalakot, Azad Kashmir (Dr. Muhammad Shehzad, Department of Agronomy, The University of Poonch Rawalakot, AJK)
2:15 pm -2:20 pm	Concluding remarks by the chair
2:20 pm -3:10 pm	Lunch and prayer break
Concluding Session Venue: MNS-University of Agriculture Multan	
3:10 pm-3:20 pm	Qirat and Naat
3:20 pm-3:30 pm	Welcome address (Prof. Dr. Asif Ali, Vice Chancellor, MNS-UAM)
3:30 pm-3:50 pm	Recommendations of the Conference for Farming Community (Prof. Dr. Ashfaq Ahmad, Pakistan, Prof. Dr. Claudia Kammann, Germany and Mr. Javed Iqbal, Executive Coordinator/Manager Programs, Doaba Foundation, Pakistan)
3:50 pm-4:00 pm	Remarks about Conference (Prof. Dr. Axel Garcia y Garcia, Department of Agronomy and Plant Genetics, University of Minnesota, USA)
4:00 pm-4:20 pm	Address by the Chief Guest (Mr. Muhammad Sibtain Khan, Minister for Forestry, Wildlife and Fisheries, Punjab)
4:20 pm-4:40 pm	Distribution of Shields and Souvenirs
4:40 pm-4:50 pm	Vote of Thanks (Dean, Faculty of Agriculture and Environmental Sciences, MNS-UAM)
4:50 pm – 5:30 pm	Tree Plantation Drive at Main Campus