



# 1st International Conference about COP27, CLIMATE CHANGE AND FOOD SECURITY

14-15 Feb 2023

Venue: (Main Auditorium PMAS-AAUR)



Climate change refers to significant, long-term changes in the global climate. There is unequivocal evidence that Earth is warming at an unprecedented rate. Human activity is the principal cause. The planet's average surface temperature has risen to about 1°C since the late 19th century and most of the warming occurred in the past 40 years.

**Zoom Link:**  
 URL: <https://zoom.us/j/3978522105>  
 Meeting ID: 397 852 2105  
 Passcode: 112233



## WHO SHOULD ATTEND

Agronomist, Soil Scientists, Agriculture Extension Officers/ Agents, Farmers, Fertilizer Manufacturer, Policy Maker, Planners and other Agricultural Professional striving for cost effective and environment friendly sustainable crop production system should attend this workshop.

## ORGANIZERS

**Patron in-Chief:** Prof. Dr. Qamar-uz-Zaman (Vice Chancellor, PMAS-AAUR)

**Patron:** Prof. Dr. Muhammad Naeem (Dean Faculty of Agriculture) **Organizing Committee**

Prof. Dr. Fayyaz-ul-Hassan (Pro Vice Chancellor, PMAS-AAUR)

Prof. Dr. Muhammad Ansar (Chairman Agronomy)

Dr. Ghulam Qadir (Associate Professor Agronomy)

Dr. Shoaib Saleem Assistant Professor (FMPE)

Dr. Mukhtar Ahmed (Chief Organizer, Assistant Professor, Agronomy)

## Students Management Committee

Mr. Aashir Sameen

Mr. Inaam Ullah

Mr. Alhaji Alusine Kebe

## Abstract Publication

Selected papers will be part of water journal with impact factor of 3 at discounted rate.

[https://www.mdpi.com/journal/water/special\\_issues/SD3HF0360Q](https://www.mdpi.com/journal/water/special_issues/SD3HF0360Q)

## OBJECTIVES

**The objectives of this conference are:**

- ▶ To highlight importance of COP27 to provide mitigation and adaptation efforts to climate change and ensure food security in Pakistan.
- ▶ To provide information about Loss Damage fund (LDF), possible financial and technical support from developed world, Green Climate Fund and sponsorship of projects of developing/underdeveloped countries aimed at mitigation and adaptation efforts.
- ▶ To develop a Charter of Demand for the development of "National Center of Climate change in PMAS-Arid Agriculture University Rawalpindi, Pakistan.

## Mode of attending

Physical and virtual

## Contact:

Dr. Mukhtar Ahmed (Chief Organizer, Assistant Professor, Agronomy), Cell; 0333-5434241, Email; [ahmadmukhtar@uaar.edu.pk](mailto:ahmadmukhtar@uaar.edu.pk)



## First International Conference about COP27, CLIMATE CHANGE AND FOOD SECURITY

Organized by

Department of Agronomy, PMAS Arid Agriculture University Rawalpindi

14-15 February 2023

### Background

Climate change refers to significant, long-term changes in the global climate. There is unequivocal evidence that Earth is warming at an unprecedented rate. Human activity is the principal cause. The planet's average surface temperature has risen to about 1°C since the late 19<sup>th</sup> century and most of the warming occurred in the past 40 years. The years 2016 and 2020 are tied for the warmest year on the record. Similarly, other evidence of rapid climate change includes warming of oceans, shrinking of ice sheets, retreating glaciers, decreasing snow cover, rising of sea level, declining arctic sea ice, increased frequency of extreme events, ocean acidification and loss of biodiversity. Hence, climate change impacts, both extreme weather and slow-onset events, have impacted several sectors of the national economies and activities, in particular agriculture and food production, augmented by other challenges be it geopolitical, cost of finance or supply chain related, and in a time of increased food insecurity. Without CO<sub>2</sub> fertilization, effective adaptation, and genetic improvement, each degree-Celsius increase in global mean temperature would, on average, reduce global yields of wheat by 6.0%, rice by 3.2%, maize by 7.4%, and soybean by 3.1%.



Pakistan is a victim of climate disasters in the form of heatwaves, floods, glacier melting, and droughts. The recent floods in the country have resulted in a total loss of \$30.1 billion. Sindh has suffered the most with a total loss of \$20.4 billion or 68 per cent of the total loss. According to the Post Disaster Needs Assessment, Pakistan further needs \$16.3 billion for the post-flood rehabilitation and reconstruction process. International conference on climate resilient Pakistan was hosted by UN in Geneva where various options for supporting the Pakistan in dealing with the consequences of the changing climate was discussed. Furthermore, it also resulted to the commitments by different donor agencies of around \$10 billion for Pakistan to support the victims of climate induced disaster. However, resilient development is not possible without institutional reforms. The intensity of the negative impacts of climate change is accelerating with every passing year. According to the Ministry of Climate Change, in the last two decades, the country experienced 152 extreme events triggered by climate change. The data further



1. To highlight importance of COP27 to provide mitigation and adaptation efforts to climate change and ensure food security in Pakistan;
2. To provide information about LDF, possible financial and technical support from developed world, Green Climate Fund and sponsorship of projects of developing/underdeveloped countries aimed at mitigation and adaptation efforts;
3. To develop a Charter of Demand for the development of “National Center of Climate change in PMAS-AAUR”.

The conference will provide a platform to academia, faculty members, researchers, Extension workers, Progressive farmers, policy makers and other stakeholders to share their worth being knowledge and experiences pertaining to climate change effects on food security and intend to conclude the smarter way to utilize adaptation strategies to ensure food security.

### **Conference Theme**

Conference will focus to the following major theme:

1. COP27 and Climate change
2. COP27 and Food Security
3. COP27 and mitigation and adaptation efforts

### **Who Should Attend the Conference and Why?**

Policy makers, Agriculture related stakeholders, researchers, Faculty members, progressive farmers, extension workers, MS/Ph.D students, young scholars and members of agronomic society from all over the Pakistan having interest in climate change and crop quality, a burning issue of the day will be welcome to share their research findings and discuss their obligations to manipulate smart and worth being adaptation strategies for the sake of prosperity at country level.

### **Expected Outcomes**

The seminar is expected to develop a shared vision on climate change threats to Agriculture and food security. It will establish a platform for further networking and synergies of stakeholders regarding research, education, and policy dialogue for practical and realistic adaptation measures.

### **Conference Organization**

#### **Patron in-Chief**

Prof. Dr. Qamar uz Zaman (Vice Chancellor, PMAS-AAUR)

#### **Patron**

Prof. Dr. Muhammad Naeem (Dean, FCFS)

#### **Organizing Committee**

Prof Dr. Fayyaz-ul-Hassan (Pro Vice Chancellor, PMAS-AAUR)

Prof. Dr. Muhammad Ansar (Chairman Agronomy)

Dr. Ghulam Qadir (Associate Professor Agronomy)

Dr. Shoaib Saleem (Assistant Professor, Department of Farm Machinery and Precision Engineering)

Dr. Mukhtar Ahmed (Chief Organizer/ Conference Secretary, Assistant Professor, Agronomy)

Mr. Aashir Sameen (M.Sc. (Hons) student Agronomy)

Mr. Alhaji Alusine Kebe (B.Sc. (Hons) student Agronomy)

#### **Resource/Focal Person/Chief Organizer/ Conference Secretary**

Dr. Mukhtar Ahmed (Chief Organizer, Assistant Professor, Agronomy), Cell; 0333-5434241

Email; [ahmadmukhtar@uaar.edu.pk](mailto:ahmadmukhtar@uaar.edu.pk)



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Fertilizer Company Limited



**1<sup>st</sup> International Conference about  
COP27, CLIMATE CHANGE AND FOOD SECURITY  
(ICCC & FS-2023)**

**14-15 Feb 2023**

**Department of Agronomy  
Pir Mehr Ali Shah Arid Agriculture University Rawalpindi (PMAS-AAUR)**

**Conference Program  
Inaugural session  
February 14, 2023 (Tuesday)  
Venue: Main Auditorium**

| Date and Time   | Activity   |
|---|--|
| 8:00-08:45 am   | The arrival of Guests & Registration   |
| 8:45-09:00 am   | Guests to be seated  |
| 09:00-09:15 am  | Tilawat-e-Quran & Nat-e-Rasool   |
| 09:15-09:20 am  | Welcome note by Chairman Department of Agronomy<br><a href="#">Prof Dr. M. Ansar, Department of Agronomy, PMAS-AAUR</a>                                      |
| 09:20-09:25 am  | COP27, Climate change and Food Security Overview<br><a href="#">Dr Mukhtar Ahmed, Department of Agronomy, PMAS-AAUR</a>                                      |
| 09:25-09:30 am  | Address by Dean Faculty of Agriculture<br><a href="#">Prof Dr. Muhammad Naeem</a>  |
| 09:30-09:40 am  | Climate Change; Race Against Time. Resilient systems<br>Address by Guest of Honour <a href="#">Asif Ali Sherazi Country Director Islamic Relief Pakistan</a> |
| 09:40-09:50 am  | Women Voices to Climate change and Food Security<br>Address by Guest of Honour <a href="#">Ms. Saleema Munir, Director PODA</a>                              |
| 09:50-10:05 am  | Plenary Speech (Keynote): Mitigation of heat stress in wheat<br><a href="#">Prof Dr. Vara Prasad, Kansas State University USA</a>                            |
| 10:05-10:15 am  | Climate change and Food Security<br><a href="#">Dr. Muhammad Aslam, Ministry of National food Security and Research</a>                                      |
| 10:15-10:30 am  | Address by Chief Guest <b>Prof Dr. Qamar-uz-Zaman</b><br><a href="#">Vice Chancellor PMAS-AAUR</a>   |
| 10:30-10:40 am  | Group Photo  |
| 10:40-11:00 am  | Tea  |
| <b>Technical Session-1</b>                                    |  |
| Chair: Prof. Dr. Fayyaz ul Hassan, Co-Chair: Dr. Bashir Ahmed |  |
| Moderator: Mr. Alhaji Alusine Kebe                            |  |
| September 14, 2023 (Tuesday)                                  |  |
| <b>Venue: Agriculture Seminar Room, PMAS-AAUR</b>             |  |
| 11:00-11:10 am  | CIMMYT's climate change regional experiences and our value proposition   |



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|                | Dr. Thakur Prasad Tiwari, Cropping Systems Agronomist and Country Representative for Pakistan, CIMMYT   |
| 11:10-11:20 am | Managing of reactive nitrogen species to mitigate climate change impacts: south Asia perspectives<br>Prof Dr. Abdul Wakeel, Institute of Soil and Environmental Sciences University of Agriculture Faisalabad, Pakistan<br>Lead (Pakistan), UKRI-GCRF South Asia Nitrogen Hub |
| 11:20-11:30 am | Role of precision agriculture technologies in mitigation of climate change impacts<br>Dr. Shoaib Saleem, Department of Farm Machinery and Precision Engineering, PMAS-AAUR  |
| 11:30-11:40 am | Climate resilient agriculture and smart water management for food security.<br>Dr. Bashir Ahmad, Director Climate, Energy and Water Resources Institute(CEWRI), National Agricultural Research Center (NARC)  |
| 11:40-11:50 am | Climate resilient wheat for food security<br>Prof Dr. Zulfiqar Ali, UAF   |
| 11:50-12:00    | Agricultural development and food security<br>Dr. Aamer Irshad, Head of Program FAO Pakistan  |
| 12:00-12:10 am | Joint action on climate and food security<br>Prof Dr. Shakeel Ahmad, BZU Multan   |
| 12:10-12:20 pm | Consortium on climate change (lead the way to scale climate solutions)<br>Dr. Wajid Nasim Jatoi, Director International Centre for Climate Change, Food Security and Sustainability (ICCFs) Islamia University Bahawalpur   |
| 12:20-12:30 pm | The flood-drought syndrome and ecological degradation of the Indo-Gangetic Plains of South Asia<br>Prof Dr. Ratan Lal, Ohio State University USA  |
| 12:30-12:40 pm | Role of Global Change Impact Studies centre (GCISC) to mitigate issue of climate change and in the designing of appropriate adaptation and mitigation measures<br>Mr. Muhammad Amjad, GCISC   |
| 12:40-12:50 pm | An overview of “non-market valuation for loss and damage under climate change”<br>Prof. Dr. Asif Kamran, UAF  |
| 12:50-1:00 pm  | How to unlock young farmers’ potential for a sustainable future of food systems<br>Dr. Adeem Arshad Awan, Sapphire Finishing Mills Ltd  |
| 12:50-1:00 pm  | Machine learning-based cloud computing improved wheat yield simulation in arid regions<br>Dr. Ahmed Kheir, ICARDA Egypt   |
| 12:50-1:10 pm  | COP27 for Developing Countries; An Evaluation through Turkiye<br>Dr. Mustafa Khan, Kırşehir Ahi Evran Üniversitesi  |



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| 1:10-2:00 pm  | <b>Refreshment and Prayer Break</b>   |
| <b>Technical Session-2</b><br>Chair: Prof. Dr. Sajid Ali, Co-Chair: Dr. Naeem Aslam<br>Moderator: Mr. Alhaji Alusine Kebe/Ms.Amna Sultan Bajwa<br>September 14, 2023 (Tuesday)<br><b>Venue: Agriculture Seminar Room, PMAS-AAUR</b> |   |
| 2:00-2:15 pm  | Speed breeding an option to mitigate issue of climate change and ensure food security<br><a href="#">Dr. Zahid Mahmood, NARC</a>  |
| 2:15-2:30 pm  | Woman 4Climate (Role of local government in climate change resilient Cities)<br><a href="#">Yvonne Aki-Sawyerr, Mayor of Freetown, Sierra Leone</a>   |
| 2:30-2:45 pm  | Climate change and livestock production<br><a href="#">Dr. Abdul Rahman Sesay, Njala University Sierra Leone</a>  |
| 2:45-3:00 pm  | Unlocking the power of youth-led innovation in ag and climate-tech to transform global food systems<br>B.Sc (Hons) students Discussion  |
| 3:00-3:15 pm  | Sustainability of Rice-Wheat Cropping System Under Changing Climate<br><a href="#">Dr Sajid Ali, Punjab University Lahore</a>   |
| 3:15-3:30 pm  | Rivers at Risk: Climate Change and its Impact on River Hydrology in the Hindu-Kush Mountains of Pakistan<br><a href="#">Dr. Muhammad Naveed Anjum, PMAS-AAUR</a>  |
| 3:30-3:45 pm  | Carbon sequestration under changing climate scenarios in rice-wheat cropping system<br><a href="#">Dr Adnan Zahid, Punjab University Lahore</a>   |
| 3:45-4:00 pm  | Scaling up disaster and climate risk management actions to prevent food crisis: Climate Smart Agriculture - a way forward<br><a href="#">Muhammad Saqib Sultan, Brandeis University, United States.</a> |
| 4:00-4:15 pm  | Role of CABI to help farmers to adapt to Climate change<br><a href="#">Dr Naeem Aslam, CABI Pakistan</a>  |
| 4:15-4:30 pm  | Remarks by Prof. Dr. Fayyaz-ul-Hassan (Pro Vice Chancellor PMAS-AAUR) and Distribution of Certificates  |
| <b>Wednesday (February 15, 2023)</b><br><b>Venue: Agriculture Seminar Room, PMAS-AAUR</b>   |   |
| 08:00-08:30 am  | Arrival of Guests & registration  |
| 08:30-09:00 am  | Guests to be seated   |
| 09:00-09:15 am  | Address by Prof Dr. M. Abid (TI), Director COMSAT/UNESCO Chair  |



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|----------------|---|
| 09:15-09:25 am | Modelling the impact of climate change on dengue outbreaks and future spatiotemporal shift in Pakistan<br><a href="#">Dr. Ramesh Kumar, Health Services Academy, Islamabad, Pakistan/College of Public Health Sciences, Chulalongkorn University, Bangkok, Thailand</a> |
| 09:25-09:35 am | Fertilizer and crop management in rain fed conditions through indigenous mechanization under changing climate scenario<br><a href="#">Dr Abdul Rehman, UOS</a>  |
| 09:35-09:45 am | Quantification of Climate Warming Impacts on Crops Phenological Shifts by Using Real-time IoT<br><a href="#">Adnan Arshad, PODA</a>   |
| 09:45-09:55 am | Climate Change and Entrepreneurship<br><a href="#">Dr. Sumaira Aslam, PITB</a>  |
| 09:55-10:05 am | Role of youth in climate action<br><a href="#">Ayesha Shaikh, University of London</a>  |
| 10:05-10:15 am | Hydroponics: A Future Technology for Sustainable Food Security<br><a href="#">Saleha kanwal, PMAS-AAUR</a>  |
| 10:15-10:25 am | Climate Change a Serious Threat to Food Security in Pakistan<br><a href="#">Muhammad Fakhar Imam, ZTBL</a>  |
| 10:25-10:30 am | Modeling Photoperiod Response of Canola Under Changing Climate Conditions<br><a href="#">Ameer Hamza, PMAS-AAUR</a>   |
| 10:40-11:00 am | <b>Tea</b>  |
| 11:00-12:00    | Technical Sessions I, II and III  |
| 12:00-12:20 pm | Farmers as Soil C stewards<br><a href="#">Mr. Lifeng Li, Director FAO Land and Water Division</a>   |
| 12:20-12:40 pm | Ensuring that food business can be net zero<br><a href="#">Sally Smith, Global Director Sustainability &amp; ESG at Upfield</a>   |
| 12:40-02:00 pm | Visit to the Centre for Precision Agriculture   |