

RACC/IDDC/ICARDA/ALARI Hybrid Webinar
September 3–5, 2022
Hosted by Ain Shams University
Mahalawy Auditorium, Faculty of Medicine

Impact of Climate Change on Food Production in the Dry Areas

Introduction

This hybrid webinar is organized by International Dryland Development Commission (IDDC), the Regional Action for Climate Change STS Japan (RACC), and the International Center for Agriculture Research in Dry Areas (ICARDA), Ain Shams University Arid Land Graduate Studies and Research Institute (ALARI), and Nizami Ganjavi International Center (NGIC).

The meeting focuses on dynamic assessment of the impact of climate change at local and regional level in different agro-ecological zones in the dry areas, and identifying strategies for adaptation to climate change, including development of coping and adaptive capacity through advanced science in changing genetic makeup and agro-management techniques. In addition, it aims to identify the means of enhancing coping and adaptation capacity in communities living in the dry areas. A significant effort is required to translate into action the resolutions agreed upon by world leaders in various global conventions on Climate Change, as the lack of political will so far has increased the gap in the economic wellbeing between the people living in the industrialized and the developing nations, with serious ethical and spiritual dimensions in the face of changing climate.

This case study, will include the following topics:

1. Dynamic assessment (simulation modeling, etc.) of the impact of climate change on the eco-systems in different agro-ecological zones.
2. Dynamic identification of genetic resources for different agro-ecologies.
3. Dynamic identification of appropriate agro-management techniques for different agro- ecologies.
4. Enhancing the coping and the adaptive capacity (human and physical infrastructure).
 - 4.1. Review of the political obstacles to implementing a strategy that would restrict global warming at 1.5-2.0 Degrees C by the year 2050.
 - 4.2. Identification of an approach to mobilizing the requisite funds to assist the developing countries implement adequate adaptation measures and promote their resilience to climate change.

This Webinar will have keynote and lead presentations covering the above-mentioned topics. As the COP-27 is to be held in Sharm el-Sheikh, Egypt on 7th November 2022, we are planning that the outputs from this webinar process will be transmitted to COP-27.

Prof. Dr. Adel El-Beltagy,
Chair of the International Dryland Development Commission (IDDC);
Professor, Arid Land Agricultural Graduate Studies & Research Institute (ALARI),
Ain Shams University, Egypt

Draft Program

Day 1: Saturday, Sept. 3, 2022

- Time: 10:30 to 17:30**
- 10:30 to 11:30 Registration**
- 11:30 to 13:00 Opening Session: Chair Prof. Dr. Mahmoud El-Metini, President, Ain Shams University**
- 13:00 to 13:30 Introduction - Navigating Through Uncertainties: Agro-Ecosystems Affected by Dynamic Impact of Climate Change**
- *Prof. Dr. Adel El-Beltagy, Chair of the International Dryland Development Commission ([IDDC](#)); Professor, Arid Land Agricultural Graduate Studies & Research Institute ([ALARI](#)), Ain Shams University, Egypt*
- 13:30 to 14:00 Keynote:**
FAO Efforts in Building Resilience and Improving Livelihoods of Local Communities in Drylands
- *Dr. Ismahane Elouafi, Chief Scientist of the Food and Agriculture Organization (FAO) of the United Nations.*
- 14:00 to 14:45 Keynote:**
- *Dr. Jeffrey Sachs, Former Director, the Earth Institute, Columbia University; UN Senior Advisor for Sustainable Development (www.jeffsachs.org)*
- 14:45 to 15:00 Break**
- 15:00 to 17:30**
Topic 3. Identification of Appropriate Agro-management Techniques for Different Agro-ecologies
Chair: Prof. Dr. Rattan Lal
- 15:00 to 15:30 Keynote:**
Farming Carbon in Global Drylands
- *Prof. Dr. Rattan Lal, Professor of Soil Science and Director of the CFAES Rattan Lal Center for Carbon Management and Sequestration at The Ohio State University. World Food Prize (WFP) laureate 2020*
- 15:30 to 17:00 Lead presentations and discussion:**
- 1. Improving and Enhancing Adaptive Capacity to Cope with Climate Change Worldwide**
- *Dr. Rolando A. Flores Galarza, Dean and Chief Administrative Officer in the College of Agricultural, Consumer and Environmental Sciences at New Mexico State University (NMSU), Las Cruces, NM, USA.*

2. Sustainable Intensification and Enhanced Resilience of Drylands: Constraints and Strategies

- *Dr. M.L. Jat, Principal Scientist, International Maize and Wheat Improvement Center (CIMMYT), Kathmandu, Nepal.*

3. Identification of Appropriate Agro-management Techniques Towards Climate Change Adaptation in Tropical Ecosystems

- *Dr. Ch. Srinivasa Rao, Director of ICAR-NAARM, Hyderabad, India*

4. Water for Agriculture in the Face of Megadrought in the Southwestern USA

-*Dr. Donald C. Slack, Professor Emeritus of Biosystems Engineering, Watershed Management and Eco-Hydrology, Arid Lands Resources Sciences and Civil Engineering and Architectural Engineering and Mechanics at the University of Arizona.*

5. Use of Smart Agriculture to Improve Water Use Efficiency and Energy Saving under Climate Change Challenge in Egypt

- *Prof. Dr. Ayman Abou Hadid, Emeritus Professor at the Arid Lands Agricultural Studies and Research Institute, Ain Shams University, Cairo, Egypt. Former Minister of Agriculture, Egypt*

- *Prof. Dr. Abdel-Ghany M. El-Gindy, Professor of Agriculture Engineering and Dean, Faculty of Desert Agriculture, Rector of the University Branch – Ras Sudr, King Salman International University, Egypt*

6. Biosaline Agriculture as an Opportunity for the Sustainable Development of Rural Areas and Coastal Regions

- *Dr. Magdi T. Abdelhamid, Research Professor and Head of the Botany Department of the National Research Centre (NRC), Cairo, Egypt.*

17:00 to 18:30

African Platform – The Voices of the Youth of Africa

Dr. Salah Soliman, Emeritus Professor of Pesticide Chemistry and Toxicology, Alexandria University, Egypt.

Day 2: Sunday Sept. 4, 2022

09:00 to 11: 00

Topic 2. Adaptation of Genetic Resources for Different Agro-ecologies

Chair: Mr. Aly Abousabaa

09:00 to 09:30

Keynote 1:

Genetic Resources for Adaptation to Climate Change in Drylands

-*Prof. Dr. Raj Paroda, Chairman, The Trust for Advancement of Agricultural Sciences (TAAS), India. Former Founding Chair of the Global Forum of Agricultural Research (GFAR)*

09:30 to 10:00 **Keynote 2:**
CGIAR's Agri-food Systems Climate Adaptation – Responding to the Global Food Crisis
– *Mr. Aly Abousabaa, Director General, International Center for Agricultural Research in the Dry Areas (ICARDA), Former Vice President of the African Development Bank*

10:00 to 11:00 **Lead presentations and discussion:**

1. Climate Change, its Impact and Mitigation Technologies for Agriculture and Environment

– *Prof. Dr. Kauser Abdulla Malik, HEC Distinguished National Professor of Biotechnology, Leading Biotechnology Program at Forman Christian College, Lahore, Pakistan*

2. Gene Editing for Adaptation of Dryland Crops to Changing Climate

– *Prof. Dr. Magdy Madkour; Emeritus Professor, Biotechnology at the Arid Lands Agricultural Research Institute (ALARI), Ain Shams University, Egypt.*
– *Prof. Dr. Sameh E. Hassanein, Head of Bioinformatics and Functional Genomics Dept., College of Biotechnology, Misr University for Science and Technology (MUST), Egypt.*

3. Improving the Livelihood of Smallholder Farmers Impacted by Climate Changes in Sinai, Egypt Through Optimal Utilization of Integrated Saline Agriculture Systems: A Case Study

– *Prof. Dr. Hassan M. ElShaer, Animal Production and Rangelands Utilization, Egyptian Center of Excellence for Saline Agriculture (ECESA)*

4. Impact of Climate Change on Wheat Yellow Rust Epidemics in Egypt

– *Prof. Yasser M. Shabana, Plant Pathology Dept., Faculty of Agriculture, Mansoura University, Egypt*

5. Water for Food, Water for Life: The Drylands Challenge

– *Dr. Vinay Nangia, Research Program Leader – Soil, Water, and Agronomy at ICARDA*

11:00 to 13:00

Topic 1. Dynamic Assessment (Simulation Modeling, etc.) of the Impact of Climate Change on the Eco-systems in Different Agro-ecological Zones

Chair: Prof. Dr. Raj Paroda

13:00 to 13:25

Keynote:

Simulating the Impacts of Climate Change on the Crop and Soil Processes

– *Dr. Hemanshu Pathak, Director General, Indian Council of Agriculture Research (ICAR) and Secretary Department of Agriculture Research and Education (DARE), India*

13:25 to 15:30 **Lead presentations and discussion:**

1. Use of Satellite Image Data in Monitoring and Assisting Food Production in Arid Regions.

– *Prof. Dr. Farouk El-Baz, Retired Director for Remote Sensing, Boston University, USA, Member of Advisory Council of President El-Sisi of Egypt*

2. Monitoring the Spatiotemporal Urbanization and its Ecosystem Responses in Some Central Nile Delta Areas Using Remote Sensing

– *Prof. Dr. A. S. Sheta, Former Chair, Soils Department, Faculty of Agriculture, Ain Shams University, Egypt*

3. Modeling Hydrological Responses to Changes in Land Use, Climate, and Land Management in Contrasting Agro-ecological Environments Toward Climate-Smart Sustainable Land Management in Ethiopia

– *Dr. Atsushi Tsunekawa, Arid Land Research Center, ALRC/Tottori University, Japan*

– *Dr. Mulatu Liyew Berihun, Visiting Associate Professor, Arid Land Research Center, Tottori University.*

4. Rising Temperatures and Increasing Demand Challenge Wheat Supply in Sudan

– *Dr. Toshichika Iizumi, National Agriculture and Food Research Organization, Tsukuba, Japan, Visiting Professor, ALRC, Tottori, Japan*

5. National Strategy and Action Plans for Combating Climate Change Impact on Livestock

– *Dr. Adel Aboul Naga, Emeritus Professor, Animal Production Research Institute, Agriculture Research Center, Egypt*

– *Dr. Mohsen Shoukry, Chair, Animal & Fisheries Research Council, Academy for Scientific Research & Technology, Egypt*

6. Effect of Climate Changes on Fisheries and Aquaculture

– *Prof. Dr. Mohamed F. Osman, Emeritus Professor, Animal Production Department, Faculty of Agriculture, Ain Shams University, Cairo, Egypt*

7. Assessment of Soil Contamination Using Geospatial Data and Contamination Indices: A Case Study Kitchener Drain, North Nile Delta, Egypt

– *Mr. Ehab Hendawy, GIS and Remote Sensing Analyst at National Authority for Remote Sensing and Space sciences (NARSS), Egypt, PhD Candidate at Institute of Graduate Studies and Research for Agriculture and Arid Areas, Ain Shams University, Egypt*

8. Identification and Quantification of Actual Evapotranspiration Using Integrated Satellite Data for Sustainable Water Management in Dry Areas

– *Dr. Rania Gamal, Research Fellow, Irrigation & Water Management-ICARDA, Cairo, Egypt*

9. Simple Roof Garden Techniques for Combating Global Warming in Egypt

– *Prof. Dr. Usama A. El-Behary*, Dean, Arid Land Agriculture Graduate Studies and Research Institute (ALARI), Ain Shams University, Egypt
– *Prof. Dr. Ayman Abou Hadid*, Emeritus Professor, Arid Land Agricultural Studies and Research Institute (ALARI), Former Minister of Agriculture.

15:30 to 16:00 **Break**

16:00 to 17:30

Topic 4. Enhancing the Coping and the Adaptive Capacity (Human and Physical Infra-structure).

Chair: Rattan Lal

16:00 to 17:30 **Lead presentations and discussion:**

1. Climate Change Effects on West Asia and North Africa Drylands

– *Prof. Dr. Mahmud Ayed Duwayri*, Former Minister of Agriculture, Jordan, President, Ajloun National University, Ajloun – Jordan; Director, Plant Production and Protection Division, FAO, Rome – Italy

2. Past and Future Impacts of Urbanisation on Land Surface Temperature in Greater Cairo Over a 45-year Period

– *Dr. Sameh K. Abd-Elmabod*, Associate professor, Soils & Water Use department, National Research Centre (NRC).

3. Changing our Relationship with Nature

– *Honorable Dena Merriam*, Global Peace Initiative of Women (GPIW), New York, USA

4. The Decision for Environmental Restoration is a Human one

– *Dr. Sharon G. Mijares*, NM Psychologist and Professor, California Institute for Human Science and National University, USA

5. A Need for a Shift of Consciousness in Dealing with Climate Change

– *Prof. Dr. Aliaa R. Rafea*, Women's College, Ain Shams University; Chair & Founder of The Human Foundation, Egypt

Day 3: Monday, Sept. 5, 2022

09:30 to 10:00 **On Resilience**

– *Dr. Ismail Serageldin*, Founder Director, Bibliotheca Alexandrina

10:00 to 10:15 **Opening Remarks**

– *Dr. Ismail Serageldin*

10:15 to 11:45

Topic 4.1. Rethinking National Strategies for Confronting Climate Change in the Light of the Changing Political Realities

Chair: Dr. Ismail Serageldin

Moderator:

Dr. Ismail Serageldin, *Co-Chair of NGIC Board of Trustees*

Panelists:

H.E. Amre Moussa, *Former Secretary General of the Arab League, Former Minister of Foreign Affairs of Egypt*

H.E. Jan Fischer, *Prime Minister of the Czech Republic 2009-2010*

H.E. Rosen Plevneliev, *President of Bulgaria 2012-2017*

H.E. Eka Tkeshelashvili, *Deputy Prime Minister of Georgia 2010-2012, Minister of Foreign Affairs 2008*

H.E. Kateryna Yushchenk, *First Lady of Ukraine 2005-2010*

11:45 to 12:00 Break

12:00 to 13:30

Topic 4.2. Beyond Mitigation: Mobilizing the Requisite Resources for Effective Programs of Adaptation and Resilience

Chair: Prof. Dr. Zlatko Lagumdzija

Moderator:

H.E. Zlatko Lagumdzija, *Prime Minister of Bosnia and Herzegovina 2001-2002, deputy Prime Minister 1993-1996, 2012-2015*

Panelists:

H.E. Maria Fernanda Espinosa, *73rd President of the United Nations General Assembly (UNGA), Minister of Foreign Affairs of Ecuador 2017-2018, Minister of National Defense 2012-2014*

H.E. Kolinda Grabar-Kitarovic, *President of Croatia 2015-2020*

H.E. Chiril Gaburici, *Prime Minister of Moldova 2015*

H.E. Marie-Louise Coleiro Preca, *President of Malta 2014-2019*

13:30 to 13:45 Concluding Remarks: (Topics 4.1 & 4.2)
- Dr. Ismail Serageldin

13:45 to 14:30 Break

14:30 to 17:15 Webinar Closing Session

Chair Prof. Dr. Mohamed El-Metini

Rapporteur Prof. Dr. Adel El-Beltagy