



In collaboration with:



GFIME
GLOBAL FORUM
 ON INNOVATIONS FOR MARGINAL ENVIRONMENTS

20-21 NOVEMBER 2019

AL HABTOOR POLO RESORT DUBAI, UAE

Scientific Agenda



Food Security and Innovation Day

Wednesday, 20 November 2019

08:45	Morning Refreshments & Networking
09:15	WELCOME AND OPENING ADDRESS H.E. Mariam Bint Mohammed Saeed Hareb Al Mehairi, Minister of State for Food Security – UAE
09:20	OPENING ADDRESS: Safeguarding The Future of Marginal Environments Dr. Ismahane Elouafi, Director General, ICBA - UAE
09:25	INTERNATIONAL KEYNOTE ADDRESS: How will we feed humanity as earth becomes an ever more marginal environment for agriculture? Dr. Nina Fedoroff, Evan Pugh Professor Emerita, Penn State University - USA
09:45	MINISTERIAL PANEL: An outlook on food security - from STEM → Farm → Fork → Food Security <i>The future of safeguarding the food security value chain.</i> <i>Leadership in Food Security</i> <i>Panelists:</i> <ul style="list-style-type: none">• H.E. Mariam Bint Mohammed Saeed Hareb Al Mehairi, Minister of State for Food Security – UAE• H.E. Sarah bint Youssef Al Amiri, Minister of State for Advanced Sciences – UAE, Ministry of Cabinet Affairs and The Future - UAE• H.E. Dr. Bandar M.H. Hajjar, President, Islamic Development Bank – KSA• H.E. Dr. Sidi Ould Tah, Director General, Arab Bank for Economic Development in Africa (BADEA) – Sudan <i>Moderator:</i> Ms. Thin Lei Win, Food Security Correspondent, Thomson Reuters Foundation – Italy
10:25	INNOVATORS PANEL: Unlocking value - supporting agriculture and food innovation and the future of smart investments <i>Can smart agriculture strategies mitigate climate risk, increase food production and save the planet, all at the same time?</i> <i>Innovation & Investment</i> <i>Panelists:</i> <ul style="list-style-type: none">• H.E. Razan Khalifa Al Mubarak, Managing Director, Environment Agency – Abu Dhabi (EAD) - UAE• Dr. José Graziano da Silva, Eighth Director General, Former Director General, UNFAO - Brazil• Dr. Kanayo F. Nwanze, Chairman & Chief Executive, FAYODE – Nigeria• Dr. Alex Ariho, Chief Executive Officer, African Agribusiness Incubators Network – Ghana• Mr. Soud Ba'alawy, Chairman, Enspire - UAE• H.E. Dr. Ibrahim Dukheiri, Director General, Arab Organization for Agricultural Development and Former Minister of Agriculture – Sudan• Ms. Hajbouha Zoubair, President, Phosboucraa Foundation – Morocco <i>Moderator:</i> Ms. Thin Lei Win, Food Security Correspondent, Thomson Reuters Foundation – Italy

11:15

GRASSROOTS SPOTLIGHT: Farming on the frontlines of marginal environments

Gauging the impact of farming in marginal environments in the face food security challenges

Impact on Farmers

Panelists:

- Ms. Jane Ininda, Associate Program Director, **Alliance for a Green Revolution (AGRA) - Kenya**
- Ms. Rosemary Nenini, Coordinator, **Twala Women's Group - Kenya**
- Mr. Bektashev Jakhongir Rakhimovich, Farm Manager, **"Baxt Imkon Rivoj Chorvasi" farming entity, Uzbekistan**
- Ms. Ejezie Juliet, Farm Manager, **Dozliet Anim Farms, Nigeria** and Volunteer, **Climate Smart Agriculture Youth Network**
- Mrs. Alem Greiling, Founder and CEO, **Nutri-Dense, Ethiopia**

Moderator: Dr. Ursula Schaefer-Preuss, Former Director General, **Federal Ministry for Economic Cooperation and Development – Germany**

11:50

Morning Break

Launch of ICBA YES initiative @ the Soil Museum stand



Scientific Programme - Stream B [Adaptation] Crop Diversity and Improvement (CDI)

Scientific Programme - Stream C [Mitigation] Sustainable Natural Resource Management (SNRM)

12:15

Chairperson: Dr. Dennis Rangi, Director General, Development, **CABI - Kenya**

Rapporteur: Dr. Habtamu Giday Gebraegziabher, ICBA

12:15

Chairperson: Dr. Javier Mateo-Sagasta, Senior Researcher, **International Water Management Institute, Sri Lanka**

Rapporteur: Dr. Ahmad Al Naggar, ICBA

12:20

KEYNOTE: Improving stress tolerance to enhance productivity of salt affected soils

Dr. P.C. Sharma, Director, **Central Soil Salinity Research Institute (CSSRI) - India**

12:20

KEYNOTE: Improving water management in Upper Egypt: an integrated model through water saving - energy saving - food security nexus.

Dr. Abdou, D. A. K., **Egypt Network for Integrated Development - Egypt**

12:50

How can quinoa value chain improve food and income security in marginal environments? Success story from Morocco

Dr. Hirich Abdelaziz, Horticulture Scientist, **ICBA - UAE**

12:50

Understanding trends in non-consumed irrigation water, with implications for irrigation efficiency, using field and remote sensed analysis: A case study of the North Jordan Basin

Dr. E. Michael Gilmont, **University of Oxford – United Kingdom**

13:10

The role of a robust seed system on climate change mitigation: where are we? Evidence from Tanzania

Dr. Bilaro, A. L., **Tanzania Agricultural Research Institute (TARI), Tanzania**

13:10

The efficient use of water for food production through sustainable crop management: Kingdom of Bahrain

Dr. Salma Bani, **Ministry of Municipality and Urban Planning - Bahrain**

13:30

Lunch

Crop Diversity and Improvement (CDI) (Cont.)	Sustainable Natural Resource Management (SNRM) (Cont.)
<p>14:30</p> <p>Productivity of cultivation of the <i>Astragalus unifoliolatus</i> Bge. on saline soils</p> <p>Dr. Ishankulova D., Jizzakh State Pedagogical Institute -Uzbekistan</p>	<p>14:30</p> <p>Environmental sustainability and financial cost of reusing gasfield-produced water for agricultural irrigation in hyper-arid environment</p> <p>Dr. Alban Echchelh, Cranfield University – United Kingdom</p>
<p>14:50</p> <p>Sheltered Cultivation' as a sustainable and innovative model for family farmers on the marginal dryland area to achieve SDGs</p> <p>H.E. Dr. Mohammad Hossein Emadi, Permanent Representative to FAO, Chair of COAG, IR Iran</p>	<p>14:50</p> <p>Managing soil salinity and sodicity in a west texas golf course irrigated with treated wastewater</p> <p>Dr. G. K. Ganjegunte, Professor, Texas A&M University, USA</p>
<p>15:10</p> <p>Staple food biofortifications against global micronutrient deficiencies for enhanced dietary mineral absorption</p> <p>Prof. AA Egal, Centre of Sustainable Livelihoods of the Vaal University of Technology - South Africa</p>	<p>15:10</p> <p>Plant Adaptation for soil constraints in north eastern Australia</p> <p>Dr. Yash Dang, Senior Research Fellow, University of Queensland - Australia</p>
<p>15:25</p> <p>Chairman's Remarks</p>	<p>15:25</p> <p>Chairman's Remarks</p>
<p>15:30 Afternoon Break</p>	
Climate-Smart Agriculture for Food Security (CSA-FS)	Management of Marginal Environments (MME)
<p>15:45</p> <p>Chairperson: Dr. Abdelbagi M. Ismail, Principal Scientist and IRRI Representative for Africa, International Rice Research Institute (IRRI) - Kenya</p> <p>Rapporteur: Dr. Henda Mahmoudi, ICBA</p>	<p>15:45</p> <p>Chairperson: Dr. Samuel Gameda, Senior Soil Scientist, International Maize and Wheat Improvement Centre, Ethiopia</p> <p>Rapporteur: Dr. Zied Hammami, ICBA</p>
<p>15:50</p> <p>KEYNOTE: New paradigms for an old science: Exploring the epigenome to breed the new generation of ecologically resilient crops for the 21st century</p> <p>Prof. Benildo de Los Reyes, Bayer Crop Science Endowed Chair in Plant Genomics and Associate Department Chair for Research and Graduate Programs - Department of Plant and Soil Science, Texas Tech University - USA</p>	<p>15:50</p> <p>KEYNOTE: Improving water use efficiency in response to water scarcity in marginal areas</p> <p>Dr. Khalil Ammar, Program Leader, Sustainable Natural Resources Management, Principal Scientist - Hydrology/Hydrogeology, ICBA, UAE</p>
<p>16:15</p> <p>Pearl millet: climate smart and nutritious food, feed and forage crop for the marginal environments</p> <p>Dr. S.K. Gupta, Principal Scientist, ICRISAT, India</p>	<p>16:15</p> <p>Plant growth promoting rhizobacteria and enriched compost to enhance growth of crops under saline condition</p> <p>Dr. Ahmed Al-Busaidi, Department of Soils, Water and Agricultural Engineering, College of Agricultural & Marine Sciences, Sultan Qaboos University, Oman</p>

16:35	New insights on the nutritional profile of halophytic crops grown in a modular farming system utilizing the reject brine from desalination Dr. Dionysia Lyra, Halophyte Agronomist, ICBA, UAE	16:35	Enhanced animal feeding using agricultural byproducts and innovative technologies in the Arabian Peninsula Dr. Muhi El-Dine Hilali, ICARDA, Amman-Jordan
16:50	Abiotic stress responses in plants: salinity, drought, flooding and extreme temperatures Dr. Eman Musa Kadhum, Agricultural Academy, Bulgaria	16:50	Revitalising salinized degraded lands. Agro-economic analysis focusing on saline agriculture Dr. Katarzyna Negacz, Wadden Academy/IVM-VU – Netherlands
17:05	Chairman's Remarks	17:05	Chairman's Remarks
17:30	Close of Food Security and Innovation Day		

Climate Impact and Sustainability Day

Thursday, 21 November 2019

09:15	Morning Refreshments & Networking
09:40	Welcome From GFIME Chairperson
09:45	Opening Address: Engaging youth, future leaders of climate impact progress Dr. Tarifa Alzaabi, Deputy Director General, ICBA - UAE
09:50	Regional Address: The scary new normal – a climate in crisis Mr. Rachid Serraj, Author of Agriculture and Food Systems to 2050 (2018) and Senior Project Officer/Delivery Manager for the Regional Initiative on Small Scale Family Farming, Regional Office in Near East and North Africa, Food and Agriculture Organization of the United Nations (FAO) – Egypt
10:00 <i>Sustainability</i>	PANEL DISCUSSION: Is it too late to develop a sustainability strategy centered on circularity? <i>How can agri systems be reimagined? How quickly can we mobilize change? How can improved systems better manage resources, waste and carbon?</i> <i>Panelists:</i> <ul style="list-style-type: none">• Dr. Turki Al Rasheed, Chairman, Golden Grass – KSA, and Chairman, Turki Faisal Int'l Corporation (TFIC), and Adjunct Professor, Department of Agricultural and Biosystems Engineering, University of Arizona – USA• Mr. Eduardo Mansur, Director – Land and Water Division, Food and Agriculture Organization of the United Nations (FAO)• Dr. Javier Mateo – Sagasta, Senior Researcher, International Water Management Institute (IWMI) – Sri Lanka• Mr. Mohamed Aissaoui, Founder, My Farm – UAE• Ms. Habiba Al Marashi, CoFounder and Chairperson, Emirates Environmental Group (EEG) - UAE <i>Moderator:</i> Ms. Seta Tutundjian, Director of Programs, ICBA – UAE
10:35 <i>Climate in Crisis</i>	KEYNOTE: Space Farming – Could the Marginal Environments Hold the Key to Out of this World Capabilities? Dr. Jennifer Ngo-Anh, SciSpacE Team Leader - Directorate of Human and Robotic Exploration Programmes (HRE-RS), European Space Agency – The Netherlands

10:55

Climate in Crisis

PANEL DISCUSSION: Giving a Face to the Name – Tracking Climate Impact's Irreversible Consequences

The increasing urgency of marginal environment innovation as we approach the point of no return.

Panelists:

- Ms. Roula Majdalani, Director - Sustainable Development and Productivity Division, **Economic and Social Commission for Western Asia (ESCWA) – Lebanon**
- Prof. R. Quentin Grafton, Chairholder - UNESCO Chair in Water Economics and Transboundary Water Governance, **Australian National University – Australia**
- Dr. Abdelbagi M. Ismail, Principal Scientist and IRRI Representative for Africa, **International Rice Research Institute (IRRI) - Kenya**
- Dr. Asad Qureshi, Senior Scientist – Irrigation and Water Management, **ICBA - UAE**
- Mr. Rashyd Zaaboul, Modeler - Climate Change, **ICBA, UAE**

Moderator:

Mr. Ben Deighton, Managing Editor, **SciDev.Net – UK**

11:30

Morning Break

Scientific Programme – Stream B [Adaptation] Novel Biotechnological Approaches (NBA)

Scientific Programme – Stream C [Mitigation] Climate Change Impact on Agriculture (CCIA)

12:00

Chairperson: Dr. Salwa Karboune, Associate Dean (Research) – McGill University and Scientific Director, Consortium for Research, **Innovation and Transformation of Agrifood – Canada**

Rapporteur: Dr. Hifzur Rahman, ICBA

12:00

Chairperson: Ms. Roula Majdalani, Director - Sustainable Development and Productivity Division, **Economic and Social Commission for Western Asia (ESCWA) – Lebanon**

Rapporteur: Dr. Jamaliah Hani Aburabie, ICBA

12:05

KEYNOTE: Practice of Whole Genome Molecular Marker Assisted Breeding in BGI

Dr. Gengyun Zhang, **BGI - China**

12:05

KEYNOTE: The Future and Suitability of Vertical Farming in Arid Region: UAE Case Study

Dr. Mohamed A. Dawoud (Dawoud, MA) **Environment Agency – Abu Dhabi, UAE**

12:30

Genetic Characterization of salinity tolerance traits to increase salinity tolerance in crops

Prof. Mark Tester, **King Abdullah University of Science & Technology, Saudi Arabia**

12:30

Mitigating climate change impacts by applying scientific knowledge to community-based rangeland restoration practices in Jordan

Dr. Alnsour, M Musa, **WADI for Sustainable Ecosystem Development NGO, Jordan**

12:50

Transcriptomic analysis of salt tolerance responsive genes in shoots and roots of two contrasting barley genotypes

Dr. R Nefissi Ouertani, **University of Tunis El Manar, Tunisia**

12:50

The Economic Impact of production Salt-tolerant Crops to Resilience climate change in Egypt (case study New valley Governorate)

Dr. Sherine Fathy Mansour, Associate Professor of Agricultural Economic Socio-Economic Division, **Desert Research Center, Egypt**

13:10

Hunting for the new players for stress tolerance in plants

Prof. Ashwani Pareek, **JNU, India**

13:10

Vulnerability of agricultural ecosystems in Bulgaria to climate change

Dr. Martin Banov, **Agricultural Academy Sofia, Bulgaria**

13:30

Lunch

14:15

Genomics in Precision Agriculture

Dr. Tong Wei, **BGI, China**

14:15

Use of oilfield produced elemental sulphur in agriculture in a water scarce and infertile Iraqi environment

Ms. Teulon C., **RSK environment, Dubai, UAE**

14:35

The date palm genomics project at NYU Abu Dhabi: recent advances and future directions

Dr. Muriel Gros-Balthazard, **NYU Abu Dhabi, UAE**

14:35

Climate-smart programming for Food Security: evidence from Southern Madagascar

Ms. Afia Fosua Agyekum, **Adventist Development and Relief Agency, USA**

14:55

Chairperson's Remarks

14:55

Chairperson's Remarks

15:05

Break

Flash talks

15:20

Adaptation Stream

Chairperson: Dr. Kanayo F. Nwanze, Fifth President, International Fund for Agricultural Development, Chairman & Chief Executive Officer, **FAYODE, Nigeria**

Rapporteur: Dr. Mohammad Shahid, ICBA

Topics:

1. *Diversity of cowpea landraces [Vigna unguiculata (L.) (Walp.)] as potential alternative grain legumes in Bulgaria* Dr. T. Stoilova, Institute of Plant Genetic Resources, Bulgaria
2. *Delivering 'off grid' nutritionally enriched tilapia to low income countries* Mr. P. N. Howes, Swansea University, UK
3. *Adoption and household welfare impacts of high yielding sorghum varieties intensification in semi-arid Zimbabwe* Dr. Joseph P. Musara, Bindura University of Science Education, Zimbabwe
4. *Integrated solutions for saline agriculture using nuclear and isotopic technologies* Mr. Ingelbrecht Ivan, IAEA, Austria
5. *Manganese repairs oxygen evolving complex (OEC) in maize (Zea mays L.) damaged during sea water vulnerability* Dr. Gupta Ramwant, Fiji National University, Lautoka, Fiji Islands
6. *Breeding for drought tolerance in durum wheat in Bulgaria* Dr. Todorovska. E, Agricultural Academy, Bulgaria
7. *Colocynth: a potential biofuel crop for the marginal lands* Dr. Mohammad Shahid, ICBA,
8. *Algacraft: automated bioreactors for optimizing alga production* Dr. Mate Ravasz, Algacraft LTD, UK
9. *Understanding and improving forage yield and quality traits in pearl millet* Drs. Govintharaj Ponnaiah and S.K. Gupta, ICRISAT - India
10. *Implementation of keynote gardens system for family farming and food security in Ibo Island, Northern Mozambique, Africa* Dr. Gelica Eugenio Inteca, Lurio University, Mozambique
11. *Biocontrol of Aflatoxigenic Fungi in Grains using Atoxigenic Strains: Implications for Food Safety and Food Security* Ms. Onyeka Okeke, University of Jos, Nigeria
12. *Breeding for drought tolerance : New insights towards better selection efficiency to deliver climate resilient bread wheat varieties under unpredictable Moroccan environments* Dr. Sahar Bennani, National Institute of Agricultural Research, Morocco

15:20

Mitigation Stream

Chairperson: Dr. Salma Balazadeh, Associate professor, **Leiden University - The Netherlands**

Rapporteur: Ms. Arzoo Malhotra, ICBA

Topics:

1. *Economic assesment, adoption and factors determining adoption of agricultural technologies by smalholders farmers: evidence from analysis in Arabian Penninsula* Dr. Boubaker Dhehibi, ICARDA, Jordan
2. *Irrigation cooling effects to control heat wave in orchard fruit : evaluation of irrigation methods* Dr. Tommaso Letterio, Canale Emiliano Romagnolo irrigation consortium, Italy
3. *Optimizing quinoa cultivation with saline irrigation water: evidences from UAE farms* Dr. Rodriguez J.P., ICBA, UAE
4. *Spatial modeling of the soil salinity variation in the Peanut basin of Senegal* Dr. Macoumba Loum, National Institute of Pedology, Agricultural Ministry and Rural Equipment, Senegal
5. *Enhanced climate change resilience and improved livelihoods of vulnerable rural communities Migori County, Kenya* Mr. Frank Wesonga, Project Manager, African Alliance for Health Research Economic Development, Kenya
6. *Dynamic of salts in the soils of Middle Euphrates basin under conditions of flooding and sprinkler leaching methods* Dr. Ahmad Ghazi Majar, Administration of Natural Resource Research-General Commission for Scientific Agricultural Research, Syria
7. *Effect of sowing techniques on yield and rainfall productivity pearl millet in gardud soil of North Kordofan state* Dr. H.K.Sawsan, Agricultural Research Corporation, Sudan
8. *Capacity Development for Bridging the Digital Divide in Agriculture* Mrs. Foteini Zampati, GODAN, KTBL, Germany
9. *Modeling Current and Future Climate Change in the UAE using Various GCMs in MarksimgCM* Ms. Latifa Saeed Al Blooshi, UAE University - UAE
10. *Pennisetum purpureum (Napier grass) varieties for Animal Fodder Production* Dr. Ramachandran Subramanian, BITS-Pilani, UAE
11. *Automated Drip Irrigation System Modeling for Olive Orchards with EPIC* Dr. Amani Bchir, Institut de l'Olivier, Tunisia

16:30

Comments of Chair from Flash Talk sessions followed by 'Open Session on "Synthesis and Integration" with whole International Scientific Advisory Committee addressing the accomplishments of science (and GFIME) and the gaps remaining; how to fill these gaps?

17:30

Close of GFIME 2019