

Welcome to Texas and DT 11

Tim D. Davis, Conference Chair

Borlaug Institute for International Agriculture & Department of Horticultural Sciences

Texas A&M University

Over two years have passed since the last DT conference (DT 10) was held in Narita, Japan. The last DT conference to be held in the U.S. was in Reno, Nevada back in 1999. As Conference Chair, I am pleased to welcome participants to DT 11. San Antonio was chosen as the site for DT 11 because it is a city that warmly welcomes guests and is located in an area where water is a major issue. The state of Texas has 11 ecological zones, all of which face serious issues related to water. A significant portion of west Texas is occupied by the vast Chihuahuan Desert. Drought conditions are common and expected in this region, but many other portions of the state face serious challenges related to water and aridity. Indeed, much of the state has been in the grips of severe drought for the past several years. Hence many of the papers that will be presented at this conference are of direct relevance to the host state.

This conference will have about 100 participants with authors/co-authors of papers representing 28 countries. There will be about 65 oral papers and 35-40 poster papers presented during the 2 ½ day conference. This meeting will include a significant number of first-time DT conference participants. We hope this venue will allow for the renewing of old friendships and the fostering of new professional relationships.

I express sincere appreciation to our conference sponsors: Borlaug Institute for International Agriculture, Texas A&M University; Dryland Systems Research Program, Consultative Group for International Agricultural Research; Texas A&M AgriLife Research, Texas A&M University System. We also gratefully acknowledge the Japanese Association for Arid Land Studies who is the founding sponsor of the DT conferences. Indeed, Japanese scientists and leaders have been critical to the success of these conferences since their inception. Appreciation is also expressed to our International Advisory Board members who provided valuable direction and suggestions regarding the conference. This group also serves as members of the Editorial Board for papers submitted to the *Journal of Arid Land Studies*. I am also grateful for the Local Organizing Committee members who provided support and suggestions regarding conference logistics. Several members of this Committee also serve on our Editorial Board.

Special appreciation is expressed to Valerie Weber, our Conference Coordinator. She and her staff at Texas A&M AgriLife Conference Services have done an excellent job handling venue selection, registration, and many other details related to the conference.

The proceedings of this conference will be published as a special issue of the *Journal of Arid Land Studies*. Each manuscript is being peer-reviewed by at least two persons. We thank the many reviewers who are helping with the review process.

Best wishes for an enjoyable and productive conference. Welcome to San Antonio, Texas!

DT 11 International Advisory Committee		
Y. Abe (Japan)	M. Abu-Zreig (Jordan)	T. D. Davis (USA), Chair
H. El-Shemy (Egypt)	H.S. Gehlot (India)	H. Toyoda (Japan)
M. Harrabi (Tunisia)	T. Kojima (Japan)	R. Harper (Australia)
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B. Payne (Ethiopia)	K. Toderich (Uzbekistan)	S. Sinha (India)

DT 11 Local Organizing Committee		
R. Cabrera (Uvalde)	C. Clement (College Station)	B. Davis (San Antonio)
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- Tours
- Wifi Code

DT 11 PROGRAM (DRAFT)

TUESDAY, NOVEMBER 19

9:00 AM: Registration Opens, La Vista Foyer

11:00-11:30 AM: Pre-conference meeting for session moderators with Tim D. Davis, Gabriel Saldana, and Carmen Byce, La Vista

ALL Sessions held in La Vista

OPENING SESSION: Tim D. Davis, Texas A&M University, Moderator

1:00-1:20 PM: Welcome to Texas and DT 11—Tim D. Davis, (Borlaug Institute for International Agriculture and Department of Horticultural Sciences, Texas A&M University, USA), Program Chair (USA)

1:20-1:35 PM: Welcome from Local Leaders—David Lunt (Associate Director, Texas A&M AgriLife Research)

1:35-1:45 PM: Welcome from Elsa A. Murano (Interim Director, Borlaug Institute for International Agriculture and President Emerita Texas A&M University)

1:45-2:15 PM: Keynote Address “The CGIAR Research Program on Dryland Systems”—William Payne (ICARDA, Ethiopia)

2:15-2:45 PM: Keynote Address “Climate Change and CO₂—Role of Terrestrial Vegetation”—Toshinori Kojima (Seikei University, Japan)

2:45-3:00 PM: Break, El Mirador

ORAL SESSION: Global Challenges: Examples from Various Geographic Regions of the World (11 papers), Moncef Harrabi (Tunisia), Moderator

3:00-3:20 PM: Sustainable Intensification of Agriculture in Drylands--Dave Harris (Kenya), Mauricio Bellon (Italy), Lieven Claessens (Kenya), Polly Ericksen (Kenya), Fergus Sinclair (Kenya), Katherine Snyder (Ethiopia)

3:20-3:40 PM: Halophytic Production Systems for Marginal Environment: Challenges and Potential-Shoaib Ismail (United Arab Emirates) and Khalil-ur-Rehman (United Arab Emirates)

3:40-4:00 PM: Research Themes and Approaches to Mitigate Land Degradation in Dryland Systems--Geert Sterk (Netherlands), Feras Ziadat (Jordan), Richard Soppe (Jordan), Chandrashekar Biradar (Jordan), Mauricio Bellon (Italy), Bill Payne (Ethiopia)

4:00-4:20 PM: Enhancing Water and Land Productivity of Saline Environments by Promoting Economic Benefits for Rural Communities in Central Asian Deserts--Kristina Toderich (Uzbekistan), Temur Khujanazarov (Japan), Marina Lebedeva (Russia), Ismahane Elouafi (United Arab Emirates), Elena Shuyskaya (Russia) and Laurel Saito (USA)

4:20-4:40 PM: Aeolian Desertification in China—Wang Tao (China)

4:40-5:00 PM: Evaluation, Characterization and Utilization of Bio-resources in the Indian Thar Desert--Hukam S. Gehlot (India), Nisha Tak (India), H.R.Dagla (India), and N.S.Shekhawat (India)

5:00-5:20 PM: Threats to Agriculture in Kuwait: The case of Wafra Agricultural Area, Southern Part of Kuwait-- Raafat Misak (Kuwait) , Hamdy El Gamily (Kuwait), and Wafa Hussein (Egypt)

5:20-5:40 PM: Sustainable Agriculture Production and Food Security in Namibia in the African Context--Martin Schneider (Namibia)

5:40-6:00 PM: Which Institutional Arrangements Can Halt Pastoral Degradation in Uzbekistan? A Political Economy Perspective--Makhmud Shaumarov (Germany)

WELCOME RECEPTION—7:00-8:30 PM, Hors d'ouvers /cash bar, Terrace Garden

WEDNESDAY, NOVEMBER 20

8:00 AM: Poster Setup, El Mirador

8:00-9:00 AM: Continental Breakfast, El Mirador

ORAL SESSION: Afforestation-Related Issues in Arid Environments, Hukam Singh Gehlot (India), Moderator

9:00-9:15 AM, Stand Structure and its Dynamics of Riparian Forest, *Populus euphratica*, in Ejina Oasis, Inner Mongolia, China--Ken Yoshikawa (Japan), Xiaogang Li (China), Guosheng Zhang (China), Linhe Wang (China), and Yuling Li (China)

9:15-9:30 AM, Estimation of Biomass Production Potential for Bio-fuel by Afforestation in Arid Area of Murchison region, Western Australia--Hideki Suganuma (Japan), Hajime Utsugi (Japan), Nobuhide Takahashi (Japan), Kiyotaka Tahara (Japan), Yasuyuki Egashira (Japan), Toshinori Kojima (Japan)

9:30-9:45 AM, Investigation of Appropriate Afforestation Methods for Developing Countermeasures against Global Warming, Saline Problem and Water-logging Problem in Semi-arid Area of Western Australia--Kenyu Kondo (Japan), Hideki Suganuma (Japan), Shin-ichi Aikawa (Japan), Hajime Utsugi (Japan), Hiroyuki Hamano (Japan), Toshinori Kojima (Japan)

9:45-10:00 AM, Estimation of Water Sources of Invasive Tree Species in Arid Environments by Oxygen Stable Isotope Analysis--Tadaomi Saito (Japan), Mohamed. A. Elbasit (Sudan), Mayu Tsukumo (Japan), Hiroshi Yasuda (Japan), Takayuki Kawai (Japan), Naoko Matsuo (Japan), Koji Inosako (Japan), Kumud Acharya (USA), Amir E. Babiker (Sudan), Abu Baker A. Wahab (Sudan), and Hiroshi Nawata (Japan)

10:00-10:15 AM, Clonal Multiplication of Multipurpose Desert Tree *Azadirachta indica*, Neem--Ashok Gehlot (India), I.D. Arya (India), R.K. Gupta (India), and Sarita Arya (India)

10:15-10:30 AM, Rapid and Mass Propagation of Economically Important Desert Plant *Capparis decidua* for its Afforestation Programme-- Namita Vijay (India), Sarita Arya (India) and I.D. Arya (India)

POSTER SESSION: Authors present from 10:30-11:45 AM, El Mirador, Posters should remain up for the entire conference (take down by Thursday, 5:00 PM)

Crops, Flora, Wildlife, and Animals in Arid Zones

1--The Database of the Flora of Uzbekistan-- Tojibaev Komil (Uzbekistan), Beshko Natalya (Uzbekistan), Karimov Farhod (Uzbekistan), Batoshov Avazbek (Uzbekistan), Turginov Orzimat (Uzbekistan), Azimova Dilnoza (Uzbekistan)

2--Important Plants Areas in Fergana Valley (Middle Asia)-- Naralieva Nasibakhon (Uzbekistan)

3--Biodiversity of Southern Part of the Plateau of Ustyurt (Karakalpakistan)-- Tajetdinova Dilarom Mnajatdinovna (Uzbekistan)

4--The Morphological Indexes of *Tulipa buhseana* Boiss. in Different Cenopopulations-- Ozodbek Abduraimov (Uzbekistan)

5--Biology of *Astragalus turbinatus* Bunge. Seed Germination-- Shakhnoza Saribaeva Usanovna (Uzbekistan)

6--Reproductive Biology of some Climacoptera species towards germplasm conservation and sustainable utilization--Dilovar Khamraeva (Uzbekistan)

7--Revitalizing Rural Area used by Modernized Sericulture - A Case Study in Fergana Region, Uzbekistan-- Makoto Iikubo (Japan), Yoshiko Kawabata (Japan), Masaaki Yamada (Japan), Siaw Onwona-Agyeman (Japan), and Vyacheslav Aparin (Uzbekistan)

8--Subsurface Water Retention Technology Provides Drought Mitigation in Dryland Cotton-- R. Scott Van Pelt (USA) and Ted M. Zobeck (USA)

9--Salinity Tolerance Evaluation of Asian Barley Accessions (*Hordeum vulgare* L.) at Early Vegetative Stage-- Hanen Sbei (Japan), Tariq Shehzad (Japan), Okuno Kazutoshi (Japan)

10--Grazing Behavior of Livestock in Settled and Nomadic Herders Households in Mongolian Plateau--Suriga (Japan), Miki Hashimoto (Japan), Buho Hoshino (Japan), Sumiya Ganzorig (Japan), Saixialt (China), Yong Hai (Japan), Tsedendamba Purevsuren (Japan)

11--Studies on Long-term Changes in Herders Household and Land Use in Inner Mongolia, China-- Yong Hai (Japan), Buho Hoshino (Japan), Sumiya Ganzorig (Japan), Suriga (Japan), Tsedendamba Purevsuren (Japan)

12--Study on Production and Properties of Kumiss of Herders in Mongolian Dry Steppe-- Satomi Ishii (Japan), Buho Hosino (Japan), Hiroshi Komiyama (Japan), Aritune Uehara (Japan), Sabyr Nurtazin (Kazakhstan)

13--The Result of Vegetation Index Using Satellite Data and Monitoring of Growing Environment of Wild Licorice at Semi-arid Area in Mongolia-- Atsushi Marui (Japan), Akihiko Kotera (Japan), Zentaro Furukawa (Japan), Noriyuki Yasufuku (Japan), Kiyoshi Omime (Japan), Takanori Nagano (Japan), Indree Tuvshintogtokh (Mongolia) and Bayart Mandakh (Mongolia)

14--Root Growth Adaptation to Deficit Irrigation of Melons in Semi-arid Conditions – A Minirhizotron Study --Sat Pal Sharma (USA), Daniel Leskovar (USA), Kevin Crosby (USA), and Astrid Volder (USA)

15--Effects of Water Stress and Salinity Stress on the Growth of Iceplant-- Tatsuya Hirokane (Japan), Makoto Ooba (Japan), Sawahiko Shimada (Japan), and Hiromichi Toyoda (Japan)

16--Monitoring Salt Accumulation Status and Saline Stress of Iceplant Leaves Using Hyperspectral Camera Imagery-- Sawahiko Shimada (Japan), Tatsuya Hirokane (Japan), Makoto Ooba (Japan) and Hiromichi Toyoda (Japan)

17--Physiological Response of Spring Safflower Genotypes of Diverse Origin to Range of Salinity Treatments --Sukhbir Singh (USA), Kulbhushan Grower (USA), Manoj Shukla (USA), Sangu Angadi (USA), Robert Steiner (USA), and Dick Auld (USA)

18--Investigation of Overgrazing Area Distribution using Satellite Remote Sensing and Economic Impact of Drought on Livestock Breeding in Arid and Semi-arid Grasslands-- Ayako Sekiyama (Japan), Wataru Takeuchi (Japan)

19--Variation in Response to Salt Stress at Seedling and Maturity Stages in Durum Wheat–Nejla Turki (Japan), Moncef Harrabi (Tunisia), Tariq Shehzad (Japan), Moktar Tarchi (Tunisia), and Kazutoshi Okuno (Japan)

20--Texas Superstar[®] Program: Using Technology to Promote the Use of Well-Adapted Plants for Landscapes in High Temperature Regions with Limited Water Resources--H. Brent Pemberton (USA), Tim D. Davis (USA), Michael A. Arnold (USA), Cynthia McKenney (USA), Larry Stein (USA), David Rodriguez (USA), and R. Daniel Lineberger (USA)

21--Effects of Saline Irrigation on Four Native Texas Plant Species with Ornamental Potential for Coastal and Arid Climates--Sean T. Carver (USA), Michael A. Arnold (USA), David H. Byrne (USA), Anna R. Armitage (USA), R. Daniel Lineberger (USA), and Andrew R. King (USA)

22--Evaluation of Drought Tolerance of Selected Provenances of *Taxodium*--Geoffrey C. Denny (USA) and Michael A. Arnold (USA)

23--Game Ranching for Meat Production in Marginal African Agricultural Lands --Susan M. Cooper (USA) and M van der Merwe (South Africa)

Soil/Water/Energy/Other Relevant Topics

24--Unusable Halophyte's Biomass as Renewable Source of Alternative Energy in Arid Lands-- Natalya Akinshina (Uzbekistan), Kristina Toderich (United Arab Emirates), Azamat Azizov (Uzbekistan), Laurel Saito (USA)

25--Evaluation of Bioenergy Crop Production with Marginal Quality Irrigation Water on Saline Lands under Extremely Arid Conditions--Girisha K. Ganjegunte (USA), Genhua Niu (USA), Yanqi Wu (USA), April Ulery (USA), and Chengang Wang (USA)

26--Double Slope Solar Distillation – Cotton Guage Top Cover Cooling--R. Jayaprakash (India), P.U. Suneesh (India), Sanjay Kumar (India)

27--Research Progress in Morphological Features of “Big ear” in Lop Nor Region and its Environmental Significance-- Xuncheng Xia (China) and Yuanjie Zhao (China)

28--Study of the Response of Tamarix cone Sedimentary Veins to Climate and Environment Elements-- Yuanjie Zhao (China) and Xuncheng Xia (China)

29--Salt and Water Movement after Leaching in Salt-accumulated Soil under the Condition of Existence of a Coarse Textured Layer-- Koji Inosako (Japan) and Tadaomi Saito (Japan)

30--Simple Method of Shallow Groundwater Exploration by Groundwater Aeration Sound in Semi-Arid Grassland-- Takayuki Kawai (Japan), Yasuyuki Tada (Japan), Masato Shinoda (Japan), Ryota Tsuchiya (Japan), Toshihiro Morii (Japan), Tetsuya Suzuki (Japan), and Khuut Tseedulam (Mongolia)

31--A Study on Effective Use of Surface Runoff for Irrigation in Djibouti -Watershed Analysis using GIS and Trial on Runoff Parameters Estimation-- Hiromichi Toyoda (Japan), Sawahiko Shimada (Japan), Tatsuya Hirokane (Japan), Tomoki Hotta (Japan), and Michimasa Menjo (Japan)

32--The Effect of the Vertical Shaft in the Shaft Tillage Cultivation-- Masataka Jitsuno (Japan), Kiyoshi Tajima (Japan), Masayoshi Kato (Japan), Eiichiro Sakaguchi (Japan), and Junya Tatsuno (Japan)

33--Restoration and Preservation of Gaber-Oun Hyper-saline Lake (Sahara, Libya)-- Abslam Mohamed Almathnani (Libya), Mohamed Ali Elssaidi (Libya), Ali Hussain Barka (Libya), Aboubaker Ibrahim Mohamed (Libya), Younis Aboubaker Alkhayali (Libya), Abdulgader Alsanusi Kasem (Libya)

34--Enhancement of Watershed Modeling in Data-Scarce Regions using a Spatially Distributed Rainfall Generator-- Jaehak Jeong (USA), Robin A. Taylor (USA), Thomas Gerik (USA), and Jimmy R. Williams (USA)

35--Water Harvesting System for Rehabilitation of Degraded Lands (the case of Liyah, Northern Kuwait)--Modi M. Ahmed (Kuwait) and Ali M.AL-Dousari (Kuwait)

36--The International Arid Lands Consortium: Promoting Peace through Collaborative Research and Development—Barbara Hutchinson (USA)

37--Literature, the Predecessor of Technology in Desert Areas : an Analysis of the Novel “Voss” —J. Santosh Priya (India) and Shubhra Verma (India)

38-- Agro-ecosystem, Tillage, and Cropping Effects on Extractable Soil Nitrogen and Organic Carbon: Preliminary Results--B. Davies (USA), K. Boa (Ghana), JA. Aitkenhead-Peterson (USA), L. Pitts (USA), and W Payne (Ethiopia)

11:45-1:00 PM: Buffet Lunch, El Mirador

ORAL SESSION: Habitat Change and Ecology in Arid Zones, Rafaat Misak (Kuwait), Moderator

1:00-1:15 PM, Habitat Change and Plants Invasion in Great Engineering Protective System in the Gurbantunggut Desert, China-- Wang Xueqin (China) and Xu Xinwen (China)

1:15-1:30 PM, The Tribe: Platform of Participatory Local Development and Management of Communal Rangeland Resources--Ali Nefzaoui (Tunisia), Mohamed El Mourid (Tunisia) and Mounir Louhaichi (Jordan)

1:30-1:45 PM, Comparative Characteristics of the Home Ranges of Domestic and Wild Animals in Arid and Sub-arid Afro-Eurasia, and Watering Places as Hot Spot for the Pasture Degradation-- Hoshino Buho (Japan), Hiroshi Nawata (Japan), Kenji Kai (Japan), Hiroshi Yasuda (Japan), Kenji Baba (Japan), Sumiya Ganzorig (Japan), Tsendendamba Purevsuren (Japan), Yuta Demura (Japan), Yuki Sofue (Japan), Jun Noda (Japan), Katsuro Hagiwara (Japan), Dashdondog Batdorj (Mongolia)

1:45-2:00 PM, Appropriate Technologies for Drought Mitigation in North Africa--Ali Nefzaoui (Tunisia), Hichem Ben Salem (Tunisia), and Mohamed El Mourid (Tunisia)

2:00-2:15 PM, Livestock smallholders in the state of Rajasthan rely on livestock mobility to cope with global climate change, Mounir Louhaichi (Jordan), Khem Chand (India), Arun Kumar Misra (India), Mahesh Kumar Gaur (India), Sarker Ashutosh (India), and Douglas E. Johnson, and Murai M. Roy (India)

2:15-3:15 PM, PANEL SESSION: Jack Elliot (Moderator), Richard Harper (Australia), Barbara Hutchinson (USA), Toshinori Kojima (Japan), Gary Mullins (USA), Bill Payne (Ethiopia),

3:15-3:30 PM: Break, El Mirador

ORAL SESSION: Solutions to Desertification Issues, Sanjay Kumar (India), Moderator

3:30-3:45 PM: Chinese Experience of Desertification Control and Application in Africa- Jiaqiang Lei (China), Shengyu Li (China), Guijin Mu (China)

3:45-4:00 PM: Solar-desalination Device with Heat Production for Cooking and Sterilization in Rural Area-- Takahisa Jitsuno (Japan), Kaoru Hamabe (Japan), Kiyoshi Sanno (Japan), Yoshiko Nishimura (Japan), Taro Momosaki (Japan), Kotaro Tagawa (Japan)

4:00-4:15 PM: Pathogenic Bacteria and Parasites Removal in Composting Toilet by using Local Matrix-- Seyram K. SOSSOU (Burkina Faso), Arnaud Quenum (Burkina Faso), Mariam Sou (Burkina Faso), Amadou Hamma Maiga (Burkina Faso), Naoyuki Funamizu (Japan)

4:15-4:30 PM: Artificial Rainfall by the Seeding of Liquid Carbon Dioxide near Miyake and Mikura Islands on February in 2012 and March in 2013-- Taichi Maki (Japan), Osamu Morita (Japan), Yoshinori Suzuki (Japan), and Kenji Wakimizu (Japan)

4:30-4:45 PM: Soil Moisture Management of Rainfed Areas in Jordan Using Permeable Gravel Ditch--Majed Abu-Zreig (Jordan)

4:45-5:00 PM: Comparative Study on Higher Education and Innovation for Sustainable Development in North Africa--Takahiro Morio (Japan)

5:00-5:15 PM: Options and Possibilities of Renewable Energy Generation in Arid and Desert Areas—Sanjay Kumar (India) and B. K. Rai (India)

5:15-5:30 PM: Effect of Rural Psychology and Socio-economics on Adoption of Renewable Energy Technology in Arid Areas of Bihar: A case study--Sanjay Kumar (India) and Sanjay Kumar Singh (India)

5:30-5:45 PM: Life Cycle and Cost-Benefit Analysis of Jatropha Plantation in Arid Areas--S.Sinha (India), Sanjay Kumar (India), S. Suzuki (Japan) and Toshinori Kojima (Japan)

5:45-6:00 PM: The effect of Phase Change Material with CuO Nanoparticles as Nano fluids in Solar Still for increasing production rate - An Experimental Approach--R. Jayaprakash (India), M. Karthik (India) D.Srither (India), Sanjay Kumar (India)

6:00 PM- Depart Hilton on River Boat for Dinner, Mexican Manhattan

THURSDAY, NOVEMBER 21

7:30-8:30 AM: Continental Breakfast, El Mirador

ORAL SESSION: Soils in Arid Zones, Richard Harper (Australia), Moderator

8:30-8:45 AM, Hydraulic Properties of Rocky soils for Semi-arid Savannas on the Edwards Plateau, Texas (USA)—Ieyasu Tokumoto (Japan), James L. Heilman (USA), Kevin J. McInnes (USA), and Cristine L.S. Morgan (USA)

8:45-9:00 AM, Increasing Soil Carbon Storage in Sandy Soils with Clay Amendments—Richard Harper (Australia), Stan Sochacki (Australia), Richard Bell (Australia), David Chittleborough (Australia), Jock Churchman (Australia), Raj Setia (Australia), John Carter (Australia), Pete Smith (UK), Pia Gottschalk (Germany), and Neil George (Australia)

9:00-9:15 AM, Controlling land degradation using environmentally friendly materials (the Case of Kuwait)—R. Misak (Kuwait) and M.Khalil (Kuwait)

9:15-9:30 AM, Evaluation of Salt Transport in Salt-affected Soil Amelioration with Low-Quality Coal Bio-briquette Ash in China—Yuji Sakai (Japan), Hitomi Seto (Japan), and Hidetoshi Nagamoto (Japan)

9:30-9:45 AM, Salts Monitoring and Management for Human Urine Fertilization in sub-Sahel Region—Nowaki Hijikata (Japan), Takahisa Fujii (Japan), Drissa Sangare (Burkina Faso), Mariam Sou (Burkina Faso), Ken Ushijima (Japan) and Naoyuki Funamizu (Japan)

9:45-10:00 AM, Evaluation of Regional Dust Emission with Different Surface Condition by a Convergence/divergence Method at Dunhuang, China—Mingyuan Du (Japan), Wanfu Wang (China), Seiichiro Yonemura (Japan), Yanbo Shen (China), and Taichi Maki (Japan)

10:00-10:30: Break, El Mirador

ORAL SESSION: Water in Arid Zones, Raul Cabrera (USA), Moderator

10:30-10:45 AM, Effect of Difference in Vegetation Type on Runoff Simulation Results in Arid Land—Osamu Yokohagi (Japan), Toshinori Kojima (Japan), Hideki Suganuma (Japan), Tadaomi Saito (Japan)

10:45-11:00 AM, Groundwater Recharge Revealed by Multi-tracers Approach and EMMA in Semi-arid Irrigated village, Heihe River Basin, Northwest China—Yutaka Abe (Japan), Maki Tsujimura (Japan), and Masayoshi Nakawo (Japan)

11:00-11:15 AM, Land and Environment Remediation in Lower Zeravshan River Basin and Adaptation Measures to Address Future Climate Change—Temur Khujanazarov (Japan), Kristina Toderich (Uzbekistan), Kenji Tanaka (Japan)

11:15-11:30 AM, Water Quality in the Lake Issyk-kul and the River Flowing into it—Yoshiko Kawabata (Japan), Tomoko Kurita (Japan), Masahiro Nagai (Japan), Vyacheslav Aparin (Uzbekistan), Yoshikazu Fujii (Japan), Yukio Katayama (Japan)

11:30-11:45 NOON, Land Application of Municipal Wastewater to Desert Ecosystems: Case Studies Identifying Risks and Opportunities—John G. Mexal (USA), Geno A. Picchioni (USA), Manoj K. Shukla (USA), April L. Ulery (USA), and William C. Lindemann (USA)

11:45-12:00 PM, Alternative Water Sources for Urban Landscape Irrigation in Arid Regions —Raul I. Cabrera (USA)

12:00-1:15 PM, Buffet Lunch, El Mirador

Plants and Crop Production in Arid Environments, Daniel Leskovar (USA), Moderator

1:30-1:45 PM, A New Generation of Desert Crops for the Lower Great Plains, USA—Dick Auld (USA), Glen Ritchie (USA), Calvin Trostle (USA), Sangu Angadi (USA), Dariusz Malinowski (USA), Nithya Rajan (USA), David Baltensperger (USA), Robert Imel (USA), Bralíe Hendon (USA), Loren Davis (USA), and Travis Witt (USA)

1:45-2:00 PM, Manipulating Plant Geometry to Improve Microclimate for Dryland Crops—Sushil Thapa (USA), Yuanquan Chen (China), Qingwu Xue (USA), and Bobby Stewart (USA)

2:00-2:15 PM, Effective Use of Soil Water Contributed to High Yield in Wheat in the U.S. Southern High Plains—Gautam Pradhand (USA), Qingwu Xue (USA), Shuyu Liu (USA), Jackie Rudd (USA), and Kirk Jessup (USA)

2:15-2:30 PM, Application of a Grass Water Uptake Model for Vegetables Grown in Semiarid Environments —Xuejun Dong (USA), Daniel Leskovar (USA), and Kevin Crosby (USA)

2:30-2:45 PM, Crop Yield Function and Evapotranspiration Comparison for Crops near Hatch, New Mexico—Blair L. Stringam (USA) and Kulbhushan Grover (USA)

2:45-3:00 PM, Deficit Irrigation in Winter Wheat – The U.S. Southern High Plains and North China Plain—Baozhen Hao (USA), Qingwu Xue (USA), Yinghua Zhang (China), B. A. Stewart (USA), and Zhimin Wang (China)

3:00-3:15 PM, Irrigation Strategies for Vegetable Crops in Water-Limited Environments –Daniel I. Leskovar (USA), Chenping Xu (USA), Shinsuke Agehara (USA), Sat Pal Sharma (USA), and Kevin Crosby (USA)

3:15-3:30 PM: Break, El Mirador

3:30-3:45 PM, Adaptable Features of Annual Halophytes to the Conditions of the Arid Zone and the Prospects for their using due to Global Warming and Biotechnology–Dilafroz Arifkhanova (Uzbekistan), Tura Rakhimova (Uzbekistan), Sanobar Iliakhunova (Uzbekistan)

3:45-4:00 PM, Relationships between Soil Water/ Calcium Environment and Growth of Licorice (*Glycyrrhiza uralensis*) at Field Cultural Experiment Aimed at Value-added Greening–Zentaro Furukawa (Japan), Noriyuki Yasufuku (Japan), Kiyoshi Omine (Japan), Ren Kameoka (Japan)

4:00-4:15 PM, Effect of Detergents from Grey Water on Irrigated Plants: Case Study of Okra (*Abelmoschus esculentus*) and Lettuce (*Lactuca sativa*)–Boukary Sawadogo (Burkina Faso), Mariam Sou (Burkina Faso), Nowaki Hijikata (Japan), Drissa Sangare (Burkina Faso), Amadou Hamma Maiga (Burkina Faso) and Noayuki Funamizu (Japan)

4:15-4:30 PM, Cactus as a Tool to Mitigate Drought and to Combat Desertification–Ali Nefzaoui (Tunisia), Mounir Louhaichi (Jordan), and Hichem Ben Salem (Tunisia)

4:30-4:45 PM, Anti-leukemic Compounds from Desert Flora as Natural Resources –Hany A. El-Shemy (Egypt)

4:45-5:00 PM, Studies of Anticancer Activities of Plants Grown in Egypt, Identification of Principle Compounds and Mechanisms--Ahmed M. Aboul-Enein (Egypt)

5:00 PM, Special Invitation to DT 12, Hany A. El-Shemy (Egypt)

5:15-6:00 PM, International Advisory Committee Meeting, Primary agenda item: Location for DT 13. La Vista

Evening, Dinner on your own

FRIDAY, NOVEMBER 22

9:00 AM-12:00 NOON, Post-Conference Optional Tours

Behind-the-Scenes Tour of the San Antonio Riverwalk—A two-hour trip over the entire Riverwalk loop will be on a Rio San Antonio Cruises barge. Participants will see not only the tourist areas along the San Antonio River but also other sections of the Riverwalk. The barge will also go through the locks on the River. A technical expert will be on board to help explain history and how it all works.

Tour of the San Antonio Water System (SAWS) Aquifer Storage and Recovery Site—This two to three hour trip will take participants to a brackish water treatment facility, drought simulation site, composting facility, and a native plant garden. An expert from Texas A&M AgriLife Extension will accompany the group to explain the projects.

