



NASA IDS: Seasonal Prediction of Hydro-Climatic Extremes for the Greater Horn of Africa (GHA)

The Third Participatory Research Workshop and Project Meeting



October 24 - 25, 2017

Washington Hotel, Addis Ababa, Ethiopia

ORGANIZED BY: The National Drought Mitigation Center, University of Nebraska-Lincoln (USA), National Aeronautics and Space Administration (NASA), Ethiopian National Meteorology Agency (NMA), Entoto Observatory and Research Center, National Drought Management Authority (NDMA) of Kenya, and Ethiopian Meteorological Society (EtMS).

NASA GHA PROJECT GOAL: *To understand and, where possible, extend the predictive time horizons for extreme drought and flood in the GHA given the challenges of an evolving climate baseline and diverse information needs to support mitigation strategies.*

The Third Participatory Research and Project Meeting Goals and Objectives (rationale):

1. To present the outcomes of the NASA-GHA project that include presenting various seasonal models and experimental drought/vegetation prediction products to the experts and decision makers representing the local (private, governmental, and NGOs), regional, and international organizations in the GHA and collecting their feedback.
2. To discuss how the interpretation and delivery of the seasonal prediction information be improved and identify an implementation strategy through strengthening the Regional Climate Outlook Forums, in which both meteorological services and decision makers (e.g., agricultural end users) participate. This will include building a strong and reliable network and implementation plan to improve information availability on the Internet.
3. To identify human and financial resources that could help in implementing the new prediction tools in the current early warning systems in Africa (i.e., the way forward).

LOCAL ORGANIZERS' EMAIL/TELEPHONE: Mr. Workneh Degefu (ethiopianmetsoc@gmail.com, 251911790703), Mr. Asaminew Teshome (asmin2met@gmail.com), Mr. Tarekgn Abera (tatarish59@gmail.com), Mr. Jemal Seid (jemsethio@gmail.com), Mr. Getachew Tesfaye (sget2006@yahoo.com, +251911336972), and Mr. Bekure Ketema, bekureketema@yahoo.com, +251911883251/+251926839087).

U.S. COORDINATOR'S EMAIL/TELEPHONE: Dr. Tsegaye Tadesse (ttadesse2@unl.edu, +14024723383) and Mrs. Nicole Wall (nwall2@unl.edu, +14024726776).



AGENDA

TUESDAY 24 OCTOBER, 2017

8:00 – 9:00 Registration and networking

Morning Session 1 Welcome and introductions Chairperson: Mr. Workneh Degefu

9:00 – 9:10 **WELCOME:** Mr. Workneh Degefu, manager, Ethiopian Meteorological Society, Addis Ababa, Ethiopia (Organizer and international coordinator of the meeting)

9:10 – 9:20 **PURPOSE OF THE MEETING AND INTRODUCTIONS:** Dr. Tsegaye Tadesse, principal investigator on the project, associate professor, National Drought Mitigation Center/University of Nebraska-Lincoln, USA

9:20 – 9:30 **OPENING REMARKS:** Where to from Here? — Dr. Mark Svoboda, director, National Drought Mitigation Center, University of Nebraska-Lincoln, USA

9:30 – 9:40 **OPENING REMARKS:** Fetene Teshome, director general, National Meteorological Agency (Ethiopia), Addis Ababa, Ethiopia

9:40 – 10:00 **KEYNOTE SPEECH AND OPENING OF THE WORKSHOP:** Representative of the Federal Democratic Republic of Ethiopia

10:00 – 10:20 **BREAK**

Morning Session 2 Overview Presentations Chairperson: Dr. Tsegaye Tadesse

10:20 – 10:50 **INTRODUCTION OF ALL PARTICIPANTS**

10:50 – 11:05 **PROGRESS REPORT ON THE NASA-GHA PROJECT:** Seasonal Prediction of Hydro-Climatic Extremes in the GHA under Evolving Climate Conditions to Support Adaptation Strategies, Dr. Tsegaye Tadesse, associate professor, National Drought Mitigation Center, University of Nebraska-Lincoln, USA

11:05 – 11:20 Ethiopian Space Program and Future Strategies, Dr. Solomon Tessema, director general, Ethiopian Space Science and Technology Institute, Addis Ababa, Ethiopia



- 11:20 – 11:35 Drought Risk Management: The Three Pillars of Drought Preparedness, Dr. Mike Hayes, professor, School of Natural Resources, University of Nebraska-Lincoln, USA
- 11:35 – 11:50 The US National Integrated Drought Information System (NIDIS): Sharing Experience to Africa, Dr. Mark Svoboda, director, National Drought Mitigation Center, University of Nebraska-Lincoln, USA
- 11:50 – 12:05 Drought Monitoring in the United States, Dr. Deborah Bathke, National Drought Mitigation Center/ University of Nebraska-Lincoln, USA
- 12:05 – 12:20 The National Drought Management Agency of Kenya: Sharing National Experience, Hon. Agnes Ndeti, Nairobi, Kenya
- 12:20 – 12:40 Participatory research group discussion: Updates (on previous evaluations, stakeholder engagement, and case studies and introduction of the purpose of the breakout group discussion for this workshop (Creating groups, parallel group discussion, and pre-participation survey), Mrs. Nicole Wall and Dr. Deborah Bathke, National Drought Mitigation Center/University of Nebraska-Lincoln, USA
- 12:40 – 1:50 Lunch

Afternoon Session 1
Participatory Research Discussion
Discussion facilitators: Dr. Mike Hayes, Dr. Deborah Bathke, and Mrs. Nicole Wall

- 1:50 – 3:15 Discussion: Parallel discussion groups (General questions will be provided for breakout groups)
- 3:15 – 3:30 Break

Afternoon Session 2
Existing Knowledge and Past Experiences: Regional and National
Chairpersons: Dr. Mark Svoboda and Dr. Mike Hayes

- 3:30 – 3:45 Climate Change and the Horn of Africa: Responses, Opportunities and Challenges, Mr. Abebe Tadege, climate change adaptation specialist, IGAD Climate Prediction and Application Centre, Nairobi, Kenya
- 3:45 – 4:00 Hazard Risk and Vulnerability Assessment Using Community Participatory Mapping Approach, Mr. Degelo Sendabo, remote sensing officer, remote sensing and GIS, the Regional Centre for Mapping of Resources for Development/NASA SERVIR, Nairobi, Kenya
- 4:00 – 4:15 Climate Modeling and Seasonal Prediction of User-Tailored Weather and Climate Products for the Greater



Horn of Africa at the IGAD Climate Prediction and Applications Centre, Dr. Zewdu T. Segele, climate modeling and diagnostics expert for the GFCS Programme over Eastern Africa at ICPAC, Nairobi, Kenya

- 4:15 – 4:30 Land-based Food Security on Resilience and Climate Change Mitigation and Adaptation Benefits in Sub-Saharan Africa, Dr. Dawit Solomon, regional program leader, CGIAR Research Program on Climate Change, Agriculture and Food Security
- 4:30 – 4:45 Tree Rings to Infer Historical Local Climates: The Periodicity of Drought in East Africa, Dr. Aster Gebrekirstos, scientist on climate change and landscape restoration, The World Agroforestry Centre, Nairobi, Kenya
- 4:45 – 5:00 Climate Smart Villages as Epicenter of Green Growth in Ethiopia, Dr. Belay Simane, associate professor, Institute of Development Studies, Addis Ababa University, Ethiopia, and Dr. Benjamin Zaitchik, Johns Hopkins University
- 5:00 – 5:10 Wrap-up and announcement



WEDNESDAY 25 OCTOBER 2017

Morning Session 1
Research and Applications on Improved Climate Information: GHA countries experiences
Chairperson: Dr. Zewdu T. Segele

- 8:00 – 8:15 Review of day 1, reports from discussion groups, (TBD)
- 8:15 – 8:30 The Methods and Techniques of Seasonal Forecast, Short and Medium Weather Predictions in Ethiopia, Asaminew Teshome, coordinator of Numerical Weather Prediction and Climate Modeling Case Team, National Meteorological Agency, Addis Ababa, Ethiopia
- 8:30 – 8:45 Monitoring and Mitigation of Drought and Flood Hazards in Sudan, Hafsa Ahmed, head of Risk Management Section & GIS officer, technical focal point for DRM Sector, Early Warning Center, Humanitarian Aid Commission (HAC), Khartoum, Sudan.
- 8:45 – 9:00 Agricultural Research and the Use of Seasonal Climate Information in Ethiopia, Dr. Degefie Tibebe, director, Climate & Geospatial Research Program, Ethiopian Institute of Agricultural Research, Addis Ababa, Ethiopia
- 9:00 – 9:15 Rebuilding Somalia’s Climate Services: Current Status and Future Prospects, Global Aid Against Poverty, Mr. Noor M. Abanoor, Mogadishu, Somalia
- 9:15 – 9:30 Assessing Weather Forecasting Needs of Smallholder Farmers for Climate Change Adaptation in the Central Rift Valley of Ethiopia, Dr. Kindie Tesfaye, International Maize and Wheat Improvement Center, Addis Ababa, Ethiopia, with Hirut Getachew
- 9:30 – 9:45 Impact of Climate Variability on Irish Potato Production Volumes in the Northwestern Part of Rwanda, Mr. Didace Musoni, division manager, METEO Rwanda, Kigali, Rwanda
- 9:45 – 10:00 ATA’s Experience in Capacity Building to Enhance Climate Information Use by Smallholder Farmers for Climate Change Resilience, Dr. Wagayehu Bekele, director, Climate Change Adaptation & Mitigation, Ethiopian Agricultural Transformation Agency, Addis Ababa, Ethiopia
- 10:00 – 10:30 Break



***Morning Session 2
Satellite Applications
Chairperson: Dr. Tufa Dinku***

- 10:30 – 10:45 Evaluation of Satellite-Derived Rainfall Estimates and Re-analysis Products for Enhancing National Climate Services Across Africa, Dr. Tufa Dinku, IRI/CU, USA
- 10:45 – 11:00 The Vegetation Outlook Model for the Greater Horn of Africa (VegOut-GHA), Dr. Tsegaye Tadesse, NDMC/UNL
- 11:00 – 11:15 Predictability of Corn (Maize) Production in the Greater Horn of Africa, Robel Takele, Climate and Crop Modeler, Climate and Geospatial Research Team, Ethiopian Institute of Agricultural Research, Melkasa, Ethiopia
- 11:15 – 11:30 Validation of New Satellite Rainfall Products over the Upper Blue Nile Basin, Getachew Tesfaye Ayehu, remote sensing research group, Earth Observation Research Division, Entoto Observatory and Research Center, Addis Ababa, Ethiopia
- 11:30 – 12:30 Seasonal Forecasts in Ethiopia and their Application to Hydropower and Agricultural-Economic Modeling, Dr. Paul Block, assistant professor, University of Wisconsin-Madison, USA **(Recording)**
- Remote Sensing and Agro-Hydrologic Modeling for Operational Drought Monitoring and Early Warning Applications in FEWS NET, Dr. Gabriel Senay, U.S. Geological Survey, USA **(Recording)**
- Upper Blue Nile Basin Water Budget from a Multi-Model Perspective, Dr. Hahn Chul JUNG, NASA Goddard Space Flight Center (GSFC), USA **(Recording)**
- Seasonal Prediction in Africa, Shrad Shukla/Chris Funk, University of California-Santa Barbara, USA **(Recording)**
- 12:30 – 1:30 Lunch

Afternoon Session 1 (1:30 – 3:30): The Way Forward

- 1:30 – 3:00 **DISCUSSION: PARALLEL DISCUSSION GROUPS:** Initial discussion points will be provided. Discussion facilitators: Drs. Mark Svoboda, Mike Hayes and Deborah Bathke, and Mrs. Nicole Wall.
- 3:00 – 3:30 Break



Afternoon Session 2
General Discussion
Chairperson: Dr. Tsegaye Tadesse

- 3:30 – 4:30 **DISCUSSION ON NEXT STEPS**
- 4:30 – 4:50 **PARTICIPATORY RESEARCH:** Post-participation survey
- 4:50 – 5:00 **CLOSING REMARKS:** Representative of the Ethiopian Government

POSTERS (TBD)

- TAREKEGN ABERA** Impact of future climate change on the water need of sugarcane at Wonji Shoa Sugar Factory, West Oromia, Central Ethiopia., Mr. Tarekegn Abera, National Meteorology Agency, Addis Ababa, Ethiopia (TBD)
- FEYERA CROP** simulation models and generated weather data evaluation for Ethiopia
- BISRAT KIFLE** Climate change and population growth impacts on surface water supply and demand of Addis Ababa, Ethiopia
- ANDUALEM SHIFERAW** TBD



THURSDAY 26 OCTOBER, 2017

**Field Trip
(for international visitors only)**

We are tentatively planning to visit the Holeta Agricultural Research Center. It is about 40 kilometers west of Addis Ababa (takes about 1.25 hr). We were still processing arrangements when this went to press; actual trip may vary.

