



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

## ***The First Participatory Research Workshop and Project Meeting***



**August 11 - 12, 2014**  
***Sheraton Hotel, Addis Ababa, Ethiopia***

**Organized by:** The National Aeronautics and Space Administration (NASA), National Drought Mitigation Center, University of Nebraska-Lincoln (USA), National Meteorological Agency (NMA) of Ethiopia, Ethiopian Meteorological Society (EtMS), and Addis Ababa University (AAU), Ethiopia.

**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 First Participatory Research and Project Meeting Goals and Objectives (rationale):**

1. To present/review the scope of the project and engage the decision makers in our assessment of information requirements and use their feedback to reorient the prediction models to address their needs. This includes learning about existing forecasting methods and decision-making processes in various sectors within the GHA.
2. To find out what hydro-climatic information could feed into decision-making and design a participatory plan to develop a framework that uses dialogue between managers and scientists on how to enhance the use of models' outputs and prediction products in the GHA as well as improve the delivery of this information in ways that can be easily utilized by managers.
3. To identify stakeholders that would use the information we produce and work with us over the next 2-3 years. This includes recruiting at least 20 decision makers and/or their advisors representing the local (private, governmental, and NGOs), regional, and international organizations in the GHA.

**Local Organizers' email/telephone:** Mr. Workneh Degefu ([ethiopianmetsoc@gmail.com](mailto:ethiopianmetsoc@gmail.com), 251-911-790703), Dr. Diriba Koricha ([dkorecha@yahoo.com](mailto:dkorecha@yahoo.com), 251-913-673352), and Dr. Getachew Berhan ([getachewb1@yahoo.com](mailto:getachewb1@yahoo.com), 251-911-638408)

**US coordinator's email/telephone:** Dr. Tsegaye Tadesse ([ttadesse2@unl.edu](mailto:ttadesse2@unl.edu), 402-472-3383).

## **AGENDA**

### ***Monday 11 August, 2014***

8:00 – 9:00                      Registration and networking

#### ***Morning Session 1 (9:00 – 10:50): Welcome and introductions***

9:00 – 9:10                      Mr. Workneh Degefu, Manager, Ethiopian Meteorological Society, Addis Ababa, Ethiopia (Local organizer of the meeting).

9:10 – 9:20                      Purpose of the meeting and introductions, Dr. Tsegaye Tadesse, Project PI, National Drought Mitigation Center (NDMC)/University of Nebraska-Lincoln (UNL), USA.

9:20 – 9:30                      Opening Remarks: Representative of the University of Nebraska-Lincoln (UNL), USA.

9:30 – 9:40                      Opening Remarks: Representative of the United States in Addis Ababa, Ethiopia.

9:50 – 10:00                      Introduction: Fetene Teshome, Director General, National Meteorological Agency (Ethiopia), Addis Ababa, Ethiopia.

9:40 – 10:10                      Keynote Speech: Representative of the Federal Democratic Republic of Ethiopia.

10:10 – 10:30                      Break

10:30 – 11:00                      Introduction of all participants

#### ***Morning Session 2 (11:00 – 12:10): Overview Presentations (Chair: Dr. Tsegaye Tadesse)***

11:00 – 11:20                      An overview of NASA Research Programs, Remote sensing application on water resources, and importance of users engagement, Dr. Shahid Habib, Chief, Office of Applied Sciences, Earth Sciences Division, NASA Goddard Space Flight Center (GSFC), USA.

11:20 - 11:40                      Introduction to the NASA-GHA project: Seasonal Prediction of Hydro-Climatic Extremes in the GHA under Evolving Climate Conditions to Support Adaptation Strategies, Dr. Tsegaye Tadesse, Research A/Professor, NDMC/UNL, USA.

11:40 – 12:00 Participatory research and the role of stakeholder engagement in applied sciences, Dr. Shimelis Beyene, Lecturer, Institute for Ethnic Studies, Department of Anthropology, University of Nebraska-Lincoln, USA.

12:00 – 12:10 Participatory Research: Pre-participation survey

**12:10 – 1:10 Lunch**

### **Afternoon Session 1**

#### ***Existing Knowledge and Past Experiences (Chair: Dr. Shahid Habib)***

1:10 – 1:30 Remote sensing and Agro-hydrologic modeling for operational drought monitoring and early warning applications in FEWS NET, Dr. Gabriel Senay, USGS, USA.

1:30 – 1:50 The current methods and techniques on short-, medium, and long-range climate prediction in Ethiopia, Dr. Diriba Korecha, Director, Meteorological Forecast and Early Warning Directorate, National Meteorological Agency, Addis Ababa, Ethiopia.

1:50 – 2:10 RCMRD/NASA SERVIR: activities and experiences, Dr. Tesfaye Korme, Director, Remote Sensing and GIS, Regional Center for Mapping of Resources for Development, Nairobi, Kenya.

2:10 – 2:30 IGAD Climate Prediction and Application Centre (ICPAC): overview and vision, Dr. Guleid Artan, Director, ICPAC, Nairobi, Kenya.

2:30 – 2:50 An overview of drought occurrence, impacts and strategies/policies in the Horn of Africa, Mr. Abebe Tadege, Knowledge sharing officer at ICPAC, Nairobi, Kenya.

2:50 – 3:05 Break

3:05 – 3:35 Impacts of climate change on desertification in the Greater Horn of Africa (GHA), Global Aid Against Poverty (GAAP), Mr. Noor M. Abanoor, Nairobi, Kenya.

3:35 – 3:55 The Current challenges facing the South Sudan Meteorological Department, Mr. Mojawok Monde, Director, South Sudan Meteorological Department, Juba, South Sudan.

3:55 – 4:15 Integrating modern and indigenous drought forecasting approaches, Dr. Masinde Muthoni, Head of Department of Information Technology, Central University of Technology, Bloemfontein, South Africa.

***Afternoon Session 2 (4:15 – 5:10): Participatory Research Discussion (Chair: Dr. Shimelis Beyene)***

4:15 – 5:00 Discussion: Parallel discussion groups

1. Do you use weather and climate information when making decisions in your work? If so, what kind of weather and climate information and for what decisions? What types of climate information and outlooks would you like to see developed in the future? How could you potentially use the information and outlooks?
  - For this question, we would like to break them into two groups related to Ag and Water. 50-55 minutes? Report is expected to be presented the following day by breakout leaders.
  
2. What kind of future scenarios would be realistic to model in the GHA region in general &/or your country (e.g., Ethiopia) in particular? Are any aspects of water or agricultural management likely to change (crop types, land uses, etc.)? Report is expected to be presented the following day by breakout leaders.

5:00 – 5:10 Wrap-up and announcement

**Tuesday 12 August, 2014**

**Morning Session 1 (8:00 – 10:30): Research and Applications on Improved Climate Information  
(Chair: Dr. Gui Baigorria)**

- 8:00 – 8:30            Review of Day 1, reports from discussion groups, Drs. T. Tadesse/B. Zaitchick/S. Beyene
- 8:30 – 8:50            Agro-economic impacts of climate information: some perspectives, Dr. Belaineh Legesse, Assoc. Professor, Haramaya University, Ethiopia.
- 8:50 – 9:10            Research Initiatives on Climate Change and Variability at Ethiopian Institute of Agricultural Research, Andualem Shimelis, Director, Biometrics, GIS and Agrometeorology Research, Ethiopian Institute of Agricultural Research (EIAR).
- 9:10 – 9:30            Building Resilience at community level: Framing Adaptation options in vulnerable ecosystems, Dr. Belay Simane, Assoc. Professor, Institute of Development Studies, Addis Ababa University, Ethiopia.
- 9:30 – 9:50            Seasonal forecasts in Ethiopia and their application to hydropower and agricultural-economic modeling, Dr. Paul Block, A/Professor, University of Wisconsin-Madison, USA.
- 9:50 – 10:10           IDE: Small scale irrigation experiences in Ethiopia, Kebede Ayele, Country Director, International Development Enterprises, Ethiopia
- 10:10 – 10:30           A brief summary of FAO Activities across the Sub regional Office for Eastern Africa, Fantahun Assefa, Field Programme Support and Monitoring Officer, FAO Sub-regional Office for Eastern Africa (SFE).
- 10:30 -10:50           Break

**Morning Session 2 (10:50 – 12:30): Satellite Applications (Chair: Ben Zaitchik)**

- 10:50 – 11:10           The use of satellite rainfall estimates for enhancing national climate services across Africa, Dr. Tufa Dinku, IRI/CU, USA.
- 11:10 – 11:30           Monthly prediction of the vegetation condition: a case for Ethiopia, Dr. Getachew Berhan AAU, Ethiopia, and Dr. Tsegaye Tadesse, NDMC/UNL.
- 11:30 – 11:50           Flood Prediction using remote sensing data, Shahid Habib/Fritz Policelli, NASA Goddard Space Flight Center (GSFC), USA.

11:50 – 12:10 Review: opportunities and challenges for seasonal prediction in the GHA, Dr. Ben Zaitchik, John Hopkins University (JHU), USA

12:10 – 12:30 Evaluation of CHIRP/S Satellite rainfall estimate over Eastern Africa, Dr. Tufa Dinku, IRI/CU, USA.

**12:30 – 1:30 Lunch**

***Afternoon Session 1 (1:30 – 3:05): The Way Forward (Dr. Diriba Korecha)***

1:30 – 1:50 Towards a shock-proof food and energy system in Africa, Dr. Menghestab Haile, Director, WFP Africa Office and Representative to the African Union and UN Economic Commission for Africa, Addis Ababa, Ethiopia.

1:50 – 2:10 Agricultural extension system of Ethiopia: A case of Amhara region - practice, challenges and way forwards, Dr. Belay Demise, Economic affairs officer- Regional land expert, United Nations Economic Commission for Africa (UN ECA).

2:10 – 2:30 Methods on seasonal crop yield forecasting, Dr. Gui Baigorria, A/Professor, SNR/UNL, USA.

2:30 – 2:50 New Frontiers in Seasonal Prediction in Africa, Dr. Chris Funk, USGS/UCSB, USA.

2:50 – 3:05 Break

***Afternoon Session 2 (3:05 – 5:00): General Discussion (Chair: Dr. Tsegaye Tadesse)***

3:05 – 4:30 Discussion of next steps

- Review of preliminary participatory research findings and discussion
- What are the next steps? Who is interested to participate in the following 2 to 3 years?
- What would be the best way to communicate with the researchers/investigators in this project?
- We can also follow up to the couple of discussion questions. We also will want to give some kind of timeline to the groups with next steps. An idea is to have a follow-up by email &/or webinar next spring.

4:30 – 4:50 Participatory Research: Post-participation survey

4:50 – 5:00 Closing Remarks. Mr. Fetene Teshome, Director General, National Meteorological Agency (Ethiopia), Addis Ababa, Ethiopia.