

Andualem S. Shiferaw, MSc.

Graduate Research Assistant/Ph.D. Student
Agrometeorologist and Climate Modeler

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Education

M.Sc. Degree in Meteorology Science, Arba Minch University, June, 2009.

Dissertation title: Evaluation of Climate Change Impact on Stream Flow over Gilgel Abbay River Basin, Ethiopia

B.Sc. Degree in Meteorology Science, Arba Minch University, June, 2005.

Dissertation title: Assessment of Crop Water Requirement over selected districts in Ethiopia

Area of Expertise and Research interest

- Seasonal Climate Prediction
- Climate modeling
- Climate change/variability impact assessment
- Agrometeorology/Climate risk management in agriculture
- Crop Modeling
- Tailoring, communication and dissemination of climate information for farming community
- Leadership
- Project management

Positions Held and Key Activities undertaken

1st Jan, 2015 – Present: Graduate Research Assistant, National Drought Mitigation Center (NDMC), University of Nebraska-Lincoln

- Evaluation of gridded climate products over Greater Horn of Africa (GHA)
- Analyze climate data sets for input to drought monitoring systems
- Assess the skill of state-of-the-art seasonal climate forecasts over GHA
- Organize stakeholder workshops as part of NASA funded Drought Monitoring and Early Warning project
- Lead grass root level focused group discussion to assess climate information needs for agricultural decision making

1st Jul, 2012 - 31st Dec 2014: Director (& researcher), Climate and Geo-spatial Research Program, Ethiopian Institute of Agricultural Research

- Coordinate, monitor and lead different research project in the program

- Coordinate GIS and Biometry related supports to users from EIAR and the National Agricultural Research system
- Undertake research on projects related to Climate modeling, agroadvisory provision, climate change adaptation and mitigation
- Represent the institute on different climate change related events and assignments
- Work as a climate change focal point for the institute
- Establish partnerships with different National, Regional and International Institutions

1st Oct, 2009–30th Jun 2012: Researcher/Agrometeorologist, Climate and Geospatial Research Team, Melkassa Agricultural Research Center, Ethiopian Institute of Agricultural Research

- Assess climate induced risks in agriculture,
- Generate high resolution climate change projection datasets for impact and adaptation studies
- Assess the impact of climate change, variability and extremes on agricultural production
- Undertake crop simulation modeling for ex-ante assessment of impacts, adaptation and generating agroadvisories
- Tailoring weather forecast information towards the needs of farming community
- Build good quality meteorology data base and analyze meteorological data for various purposes
- Support and train researchers in the institute on climate data analysis and crop simulation modeling
 - Participate on different research projects in the institute

1st Jun 2009–15th Oct 2009: Researcher, Climate change team, Research and studies Division, National Meteorology Agency of Ethiopia-Head Quarter

Undertake different Research activities related to climate change

- Develop climate change projections for different localities in Ethiopia
- Downscale General Circulation Model outputs to finer scale
- Climate change Impact assessment: water and Agricultural sectors, Extreme weather Events

1st Aug 2005–30th Apr 2007: Team Leader /Meteorologist, Forecast and Analysis Team, Jijiga Meteorology Branch Office, National Meteorology Agency of Ethiopia

- Meteorological station establishment, Rehabilitation and inspection
- Processing of meteorological Data for various user groups
- Assist in provision of timely weather forecast and early warning
- Preparation of Hydro meteorological, Agro meteorological and other meteorological bulletins
- Provide weather briefings for key stakeholders

Short Term Trainings (selected)

- Introduction to the Technical Training Program "Agriculture Sector Risk Assessment" by the World Bank
- The Second and Third Regional Climate and Impact Modeling Workshop for Eastern Africa
- International Center for Theoretical Physics (ICTP), Italy and Addis Ababa University
- Using Climate Scenarios and Analogues for designing adaptation strategies in Agriculture
- Climate Change Agriculture and Food Security Program of CGIAR (CCAFs)
- Participatory climate risk mapping University of Queensland and Institute of resource assessment (IRA), University of Dar Es Salaam.
- Modeling Promising Maize and Wheat Technologies CIMMYT, Global Futures Project
- Training on Leadership; Theory U (offered by Presencing Institute, USA) at Addis Ababa, Ethiopia
- Master class Training Workshop on Agricultural Production System Simulator (APSIM) Queensland Alliance for Agriculture, Food and Innovation (QAAFI), The University of Queensland

Publications

- Tadesse, T., T. Haigh, N. Wall, **A. Shiferaw**, B. Zaitchik, S. Beyene, G. Berhan, and J. Petr, 2015: Linking Seasonal Predictions into Decision-making and Disaster Management in the Greater Horn of Africa. Bull. Amer. Meteor. Soc. doi:10.1175/BAMS-D-15-00269.1, in press.
- **A. Shiferaw**, J. Seid, T. Gissela.,G. Jember,A. Aklilu, T.Gebremariam. 2015. Ethiopian panel on Climate Change, First Assessment Report, Working Group I Physical Science Basis. Published by the Ethiopian Academy of Sciences. http://www.eas-et.org/new/images/docs//EPCC_Reports/Physical%20Science%20Basis.pdf
- L. Gizachew and **A. Shiferaw**. 2014. Analysis and Mapping of Climate change risk and vulnerability in Central Rift Valley of Ethiopia. African Journal of Crop Science. <http://www.ajol.info/index.php/acsj/article/view/108463>
- **A. Shiferaw**, R.Takele., J. Seid., G. Mengistu., G. Mamo., T.Mekonen, T. Gebremariam. 2015. Dynamical Downscaling over Ethiopia using RegCM 4.2 regional climate model: under Review
- F. Mequanint., **A. Shiferaw** and. R. Takele. 2013. Observed and Future Climate Variability and Extremes over Ethiopia: Proceeding of the 2nd ASARECA General Assembly and Scientific Conference. <http://asareca.org/~asareca/sites/default/files/publications/Book%20of%20Abstracts%20Eng.pdf>
- L. Gizachew and **A. Shiferaw**. 2014. Mapping Climate Change Vulnerability, a Case Study of Selected Districts in Upper Awash River Basin, **2013**.Ethiopia.Ethiopian Journal of Water Science and Technology
- **A. Shiferaw**. 2009. Evaluating the impact of climate change on stream flow over Gilgel Abbay River Basin of Ethiopia : Master's Thesis

Technical Reports

- **A. Shiferaw**, R. Takele, J. Seid, F. Getachew, E. Zewdu, A. Girmay, F. Mequanint, G. Mamo, Y. Kahsai, A. Alemie K.P.C. Rao, G. Sridhar. 2014. A policy brief on Impacts of Climate Change on Agriculture in Ethiopia: what, when, where and how? A joint EIAR-ICRISAT report based on Agricultural Model inter-comparison Project outputs
- Rao K.P.C. et.al. 2013. Assessing the impacts of climate variability and change on agricultural systems in Eastern Africa while enhancing the region's capacity to undertake integrated assessment of vulnerabilities to future changes in climate; Final Technical Report submitted to Columbia University as part of the Global AGMIP Project led by the University. https://ccafsicrisat.files.wordpress.com/2015/02/regional-report_east-africa.pdf

Posters

- **A. Shiferaw, Tadesse, T.** 2015. Evaluation of NCEP CFSV2 Forecast over the Greater Horn of Africa. Presented on NASA IDS: Seasonal Prediction of Hydro-Climatic Extremes in the Greater Horn of Africa : The Second Participatory Research Workshop
- **A. Shiferaw**, J. Seid, G. Mengistu, R. Takele, T. Gebremariam, T. Mekonen. 2015. Dynamical Downscaling of Climate Change Projections Over Ethiopia Using RegCM4 Presented on NASA IDS: Seasonal Prediction of Hydro-Climatic Extremes in the Greater Horn of Africa : The Second Participatory Research Workshop
- R. Takele and **A. Shiferaw**. 2013. Current variability, observed trend and associated risk of intra-seasonal rainfall features in Adama district of Ethiopia: Proceeding of the 2nd ASARECA General Assembly and Scientific Conference

Projects

- Assessing Vulnerability and Exploring Best Adaptation Options for Upper Awash River Basin under the changing Climate; **PI**, \$20,000.00 funded by Ethiopian Government
- Analyzing climate extremes and exploring adaptation options in East and Southern Africa: **PI**; funded by CIMMYT/Climate Change Agriculture and Food Security (CCAFS); \$15,000.00
- Evaluating the impact of climate change on Maize production over selected districts in Ethiopia: part of the Global Agricultural Model Intercomparison and Improvement Project (AgMIP), **Co-PI**, funded by ICRISAT, \$15,000.00
- Making Ethiopian Agriculture climate resilient: towards networking and coordination to mainstream climate change adaptation into food security and sustainable development; **co-PI**; funded by **The Rockefeller Foundation, \$400,000.00**
- Reducing the Vulnerability of Agricultural Production to a Variable and Changing Climate through Application of Seasonal Climate Forecasting and Best Bet Management Practices: **co-PI**; funded by **The Rockefeller Foundation, \$250,000.00**
- Enhancing adaptive capacity of smallholders through response farming technologies: **PI** funded by **ASARECA**
- Agroweather tools for climate smart agriculture in Ethiopia: **PI**; funded by the World Bank under the Bank Netherlands Partnership Program, \$100,000.00

- Scaling up Integrated Agrometeorological Advisory Services for Smallholder Farmers in Ethiopia, submitted to ClimDev Special fund (CDSF) of ClimDev-Africa, Upcoming Grant, **PI**, €300,000.00

Professional Services

- Volunteer in annual Weatherfest festival organized by SNR
- Served as member of committee established by State Minister of Agriculture to develop a joint CGIAR-Research –Ministry of Agriculture program on “Agricultural research for sustainable intensification in the face of climate change”
- Served as a Technical Working Group Member working on the development of Greenhouse Gas Protocol for Agriculture sector (coordinated by World Resource Institute (WRI) and ECNOSERVE Consulting)
- Member of working Group 1-Physical Science basis of Ethiopian Panel of Climate Change at the Ethiopian Academy of Sciences
- Served as Working Group member responsible for developing Ethiopian Agricultural Growth Program, Second Phase document with specific responsibility on leading climate component (\$500,000,000.00 World Bank loan for Agriculture sector of Ethiopian Government)
- Participated and contributed on a workshop aimed at developing a Theory of Change and Impact Pathway for East Africa division of Climate Change Agriculture and Food Security Program (CCAFS)
- Served as member of an ad-Hoc committee established by the State Minister of Agriculture to develop climate informed agricultural planning for 2013 crop growing season

Professional Membership

- Ethiopian Meteorology Society
- Young Earth System Scientist Community (YESS)
- American Geophysical Union (AGU)
- Royal Meteorological Society (RMetS)
- CORDEX Early Career Scientist (ECS) Network
- Climate Exchange Network for Africa (CENA)
- WRF model users and applications
- The Global Resilience Partnership, convened by The Rockefeller Foundation, USAID, and Sida
- Arba Minch University Alumni and Staff

References

Dr. Tsegaye Tadesse

Assistant Professor / Climatologist and Remote Sensing Expert

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