


Ahmed Jemal S.


PhD Candidate,
Climatology & Geospatial
Analytic


Expertise


Climate, Crop Modeling
Climate/Weather Prediction
Drought Monitoring and Prediction
Climate Smart Agriculture
Climate Risk Management
BigDATA and Geospatial Analytics
Develop Decision Support System


Skills


 BigData, Geospatial Analytics





 Models: RegCM, WRF, DSSAT, GLAM





 CDO, NCO, GrADS/5.5





 C, C++, Bash



 HPC, Cloud computing



 MATLAB, R, Python



Languages

 Amharic



 English



 Italian



Working Experience

Since 2018	Climate Smart Agriculture Consultant CIAT, CIMMYT, and CCAFS - CGIAR Research Program on Climate Change, Agriculture and Food Security, East Africa Regional Office, <i>Leading the development of EDACaP-Ethiopian Digital Agroclimate Advisory Platform to support smallholder farmers and policymaker decision.</i>	Addis Ababa, Ethiopia
2021	Remote Sensing for Agriculture Specialist Consultant Food and Agriculture Organization (FAO) Office of Climate Change, Biodiversity and Environment Division <i>Leading the development of country level Agricultural Drought Monitoring and Prediction System (NextGEN ASIS).</i>	Rome, Italy
2020 – 2022	ACToday Project Country Focal International Research Institute for Climate and Society, Earth Institute, Columbia University <i>ACToday: Adapting Agriculture Today for Tomorrow Columbia World Project Team Member and country focal for Ethiopia</i>	New York, USA
2019 – 2020	Staff Associate International Research Institute for Climate and Society, Earth Institute, Columbia University	New York, USA
2017-2019	Senior Researcher Climate and Geospatial Research Program, Ethiopian Institute of Agricultural Research	Addis Ababa, ET
2015-2017	Director Climate and Geospatial Research Program, Ethiopian Institute of Agricultural Research	Addis Ababa, ET
2013-2015	Associate Researcher Climate and Geospatial Research Program, Melkasa Agricultural Research Center	Melkasa, ET
2007-2013	Lecturer Department of Physics, Haramaya University	Dire Dawa, ET

Education

Since – 2019	Ph.D. candidate in AgroBiodiversity Sant'Anna School of Advanced studies-Pisa Institute of Life Science <i>In-depth studies on the improvement and integration of Seasonal to Sub-seasonal Climate forecast with the agricultural models to predict agricultural yield.</i>	Pisa, Italy
2010 – 2012	M.Sc. Atmospheric Physics Addis Ababa University <i>Thesis Title: Simulation of crop yields in the Amhara Region using a large area crop model as driven by output from regional climate model. (http://etd.aau.edu.et/handle/123456789/3916) ; Supervisor: Prof. Gizaw Mengistu</i>	Addis Ababa, ET
2004 – 2007	B.Sc. Applied Physics University of Gondar	Gondar, ET

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About Me

A young researcher with more than ten years of expertise at the national and international levels in seasonal climate prediction, drought and vegetation monitoring, remote sensing, agricultural development, and climate change/variability. My research focuses on promoting crop system efficiency by minimizing risk and utilizing climate information services by enhancing the use of meteorological and seasonal climate predictions and climate change projections. I manage this by establishing user-friendly, scientifically sound climate-crop simulation models and decision support tools to optimize crop and soil management. 1) I evaluate and downscale global models for seasonal forecasting using a statistical and dynamical modeling approach. 2) Tailoring weather prediction information to the requirements of the farming community 3) Developing decision-making tools to boost agricultural productivity. 4) exploring methodologies to link/couple climate models and crop models to enhance stakeholder decision-making. I work with a multidisciplinary team with experts in meteorology, climatology, remote sensing and GIS, physiology, irrigation engineering, soil science, weed science, breeding and genetics, plant pathology, entomology, and agricultural economics. To ensure the common benefit extrapolation of results, I employ an integrated systems approach research by combining field research, simulation modeling, and validation.

Recent Publication

PEER-REVIEWED PAPERS

- Bekele, I., Lulie, B., Habte, M., Boke, S., Hailu, G., Mariam, E., Ahmed, J.S., et al. (2022). Response of maize yield to nitrogen, phosphorus, potassium and sulphur rates on Andosols and Nitisols in Ethiopia. *Experimental Agriculture*, 1-17. doi:10.1017/S0014479722000035
- Abera, W., Tamene, L., Tesfaye, K., Jiménez, D., Dorado, H., Erkossa, T., Ahmed, J.S. et al. (2022). A data-mining approach for developing site-specific fertilizer response functions across the wheat-growing environments in Ethiopia. *Experimental Agriculture*, 1-16.
- Ehsan, M.A., Tippet, M.K., Robertson, A.W., Ahmed, J.S., et al. Seasonal predictability of Ethiopian Kiremt rainfall and forecast skill of ECMWF's SEAS5 model. *Clim Dyn* 57, 3075–3091 (2021).
- Teshome, A. , Zhang, J. , Ma, Q. , Zebiak, S. , Demissie, T. , Dinku, T. , Siebert, A. , Seid, J. and Acharya, N. (2022) Skill Assessment of North American Multi-Models Ensemble (NMME) for June–September (JJAS) Seasonal Rainfall over Ethiopia. *Atmospheric and Climate Sciences*, 12, 54–73.
- Shewangizaw, B., Gurumu, G., Agegnehu, G., Eshetu, M., Assefa, S., Hadgu, F., Seid J., et. al., (2021). Yield response of barley to the application of mineral fertilizers containing major nutrients on Cambisols and Vertisols in Ethiopia. *Experimental Agriculture*, 1-15.
- Woldeyohannes A.B, Iohannes S.D., Miculan M., Caproni L., Ahmed J.S, et al. (2021). Data-driven, participatory characterization of traditional farmer varieties discloses teff (*Eragrostis tef*) adaptive and breeding potential under current and future climates. *bioRxiv* 2021.08.27.457623; doi: doi:10.1101/2021.08.27.457623
- D.T. Degefie, Seid, J., Gessesse, B., Bedada, T. (2019) Chapter 24 - Agricultural drought projection in Ethiopia from 1981 to 2050: Using coordinated regional climate downscaling experiment climate data for Africa.
- Gummadi, S., Rao, K.P.C., Seid, J. et al. Spatio-temporal variability and trends of precipitation and extreme rainfall events in Ethiopia in 1980–2010. *Theor Appl Climatol* 134, 1315–1328 (2018).

TECHNICAL REPORT AND POLICY BRIEF

- Tesfaye K, Desta LT, Demissie T, Seid J, Haile A, Mekonnen K, Solomon D. 2021. A Framework for Bundling Climate-Smart Agriculture (CSA) and Climate Information Services (CIS) in Ethiopia. AICCRA Technical Report. Addis Ababa, Ethiopia: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS).
- Seid J, Demissie T, Tesfaye K, Tamene L, Solomon D. 2020. Ethiopian Digital AgroClimate Advisory Platform (EDACaP) Technical Working Document | Brief version. Addis Ababa, Ethiopia: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). <https://hdl.handle.net/10568/109663>
- Eshete G, Assefa B, Lemma E, Kibret G, Ambaw G, Samuel S, Seid J, Tesfaye K, Tamene L, Haile A, Asnake A, Mengiste A, Hailemariam SN, Ericksen P, Mekonnen K, Amede T, Haileslassie A, Hadgu K, Woldemeskel E, Solomon D. 2020. Ethiopia climate-smart agriculture roadmap. CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). <https://hdl.handle.net/10568/109663>
- Seid J, Tesfaye K, Demissie T, Dawod Y, Tamene L, Traore PCS, Solomon D. 2020. Climate Services amid the Covid-19 Pandemic: Seasonal and sub-seasonal climate advisory and communication to agricultural stakeholders in Ethiopia. Wageningen, the Netherlands: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). <https://hdl.handle.net/10568/111754>
- Seid J, Tesfaye K, Traore PCS. 2019. Launch of the Ethiopian Digital AgroClimate Advisory Platform (EDACaP) Progress Report on EDACaP Development and Hosting. CCAFS Info Note. CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). <https://hdl.handle.net/10568/107770>

Conference and Workshop

Oct 2021	Invited speaker and Trainer Agricultural Drought Monitoring and Prediction System in Launching Workshop and User Training Organizers: FAO, Columbia University IRI, EIAR, EMI, CCAFs	Addis Ababa, ET
Sept 2021	Participant Climate action to transform food systems - Linking the UNFSS and COP26 through initiatives that support greater resilience to climate change United Nation Food System Submit	
Aug 2021	Invited Speaker and Trainer Objective Climate Forecasts for Agriculture and Food Security Sector in Eastern and Southern Africa UN Economic Commission for Africa	Victoria Falls, Zimbabwe
Jan 2021	East African Team member Climate Resilient Food Systems for Africa CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS)	Wageningen, NL
Dec 2020	Invited speaker and Trainer Decision Support Modelling Tools for food security and agricultural development planning in Ethiopia DARPA World Modeller, BMGF and LUMA	Seattle, USA

Research collaboration centers

Since – 2021	Wageningen University & Research PhD Research collaboration with Plant Production Systems Group	Wageningen, Netherlands
Since – 2020	Columbia University ACToday: Adapting Agriculture Today for Tomorrow Columbia World Project East African Team and country focal for Ethiopia	New York, USA
Since – 2020	FAO: Food and Agriculture Organization Collaboration with the customization and implementation of country level Agricultural Stress Index System (ASIS)	Rome, Italy
Since – 2017	CIAT: International Center for Tropical Agriculture Research Project Partner and BigData Team	Cali, Colombia
Since – 2015	CIMMYT: Int'l Maize & Wheat Improv't Center Technical Team Leader Improvement and scaling of EDACaP through AICCRA: Accelerating Impacts of CGIAR Climate Research for Africa Project	Addis Ababa, ET