



AI for Good Lab



Workshop Program: Using Machine Learning to Improve Local-Scale Weather and Extreme Heat Forecasting in Data-Sparse Regions

Day 1 HeatEWS Context and Introduction to AI for Forecasting

Monday 12 October 2026

Time (Eastern African UTC + 3:00 Nairobi)	Meeting	Responsible/Lead
8:30 – 9:00	Registration	KMD
9:00 – 9:30	Opening remarks	PR KMD / WMO Rep. for Eastern & Southern Africa (Hlobsile)
9:30 – 9:40	Group Picture	KMD
9:40 – 10:00	Workshop objectives and expected results	ACMAD (Patrick)
10:00 – 10:15	Project Overview (Project purpose, pilot context and planned outputs)	WMO (Rohail)
10:15 – 10:45	Tea/coffee break	
10:45 – 12:45	Extreme heat forecasting in practice - HeatEWS Case Study (30 min, Alvaro) - Forecast of extreme heat in Mali (30 min, Mali Météo) - Forecast of extreme heat in Kenya (30 min, KMD) Discussion (30 min, Facilitator: Patrick)	Lead: ACMAD (Patrick) Contributors: ACMAD / Mali Météo / KMD / WMO
12:45 – 14:00	Lunch	



14:00 - 15:30	Introduction to AI/ML in weather forecasting - Why AI? What problem are we trying to solve? Strengths and limitations of AI forecasts (30 min, Patrick) - Operational forecasting challenges and priority needs identified (30 min, Amit). Discussion (30 min, Facilitator: Zied)	Lead: Seth Contributors: Zied
15:30 – 16:00	Tea/coffee break	
16:00 – 17:00	Forecast data landscape Observation reanalysis and global forecast products; data availability and suitability for local applications (Amit)	Microsoft (Amit)

Day 2 Data sets used, forecast model and results

Tuesday 13 October 2026

Time (Eastern African UTC + 3:00 Nairobi)	Meeting	Responsible/Lead
9:00 – 10:30	- HeatEWS technical workflow (40 min, Amit) - Data quality control (QC) aspects, what makes a good training/reference dataset (20 min Erkin) Discussion (30 min, Facilitator: Hellen – WMO/WWRP)	Contributors: WMO Erkin / Microsoft (Amit)
10:30 – 11:00	Break	

11:00 – 13:00	Hands-on: Preparing predictor and reference datasets: quality control, missing data, temporal alignment and forecast lead times	(Wessel - Online) Assisted by Seth (ACMAD)
13:00 – 14:00	Lunch	
14:00 - 15:30	Hands-on: Statistical downscaling and local-scale forecast improvement in data-sparse regions	Microsoft (Amit)
15:30 – 16:00	Tea/coffee break	
16:00 – 17:00	Hands-on: comparing raw and machine learning-corrected forecasts using MAE, RMSE, bias, precision, recall and F1 score	Microsoft (Amit)

Day 3 Verification, Visualisation and Interpretation of forecast results

Wednesday 14 October 2026

Time (Eastern African UTC + 3:00 Nairobi)	Meeting	Responsible/Lead
9:00 – 10:30	Summary of previous two days/overview of project (15 min ACMAD & WMO) Forecast verification • Keynote on forecast verification (30 min) • Project forecast verification by lead time, location, season and temperature threshold (40 min) Discussion and recommendations for future work (20 min, Facilitator: Hellen Msemu – WMO/WWRP)	Zied Ben Bouallègue (JWGFVR&ECMWF)

10:30 – 11:00	Break	
11:00 – 13:00	From Forecast to Decision-making: Camp Manager Perspective Identification of weather and climate information currently used and potential for improvement (30 min, UNHCR Mali/Gao) Facilitated exercise with UNHCR camp managers, Mali Météo, KMD and technical partners (90 min, Hellen & Rohail - WMO)	WMO (Hellen)
13:00 – 14:00	Lunch	
14:00 - 15:30	Hands-on: exploring and visualizing temperature observations and forecast data from the HeatEWS case study (Seth)	ACMAD
15:30 – 16:00	Tea/coffee break	
16:00 – 17:00	Co design of heat indicators Fixed thresholds percentile based indicators persistence and user oriented communication products (tbc Armel)	Facilitator: Hlobsile (WMO RO) Contribution: All

Day 4 Operational Application and Follow-Up Planning

Thursday 15 October 2026

Time (Eastern African UTC + 3:00 Nairobi)	Meeting	Responsible/Lead
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9:00 – 9:35	- Welcome remarks to invited UN and humanitarian agencies (10 mins Hlobsile) - Short overview of the project (10 min, Rohail) - Operational heat risk management and current decision-making processes (15 min, UNHCR Mali/Gao)	Hlobsile (WMO Rep.)
9:35 – 10:30	Project perspectives and experiences: from forecast development to operational uptake: - Uptake Perspective of Mali Météo (15 min, Mali Météo) - Uptake Perspective of KMD (15 min, KMD) - Impacts of Extreme Heat in Gao Cité Nata (10 min, UNHCR Mali/Gao) Discussion and Q/A (15 min, Facilitator: Rohail - WMO)	Lead: ACMAD (Patrick) Contributors: Mali Météo, KMD, Microsoft, UNHCR Mali/Gao
10:30 – 11:00	Tea/coffee break (Full Group Photo)	
11:00 – 13:00	Understanding and addressing user needs - WMO Coordination Mechanism for humanitarians (WCM) (15 min, Yi Wang - WCM lead) - From extreme heat forecasts to actionable messages: improving communication (15 min, Arnel) - Why science-based decision-making matters (15 min, Hellen – WMO/WWRP) - AI forecasting – Microsoft Aurora Model (15 min, Amit – Microsoft) - Project results and potential to scale up (15 min, ACMAD) Discussion and Q/A (30 min, Facilitator: Zied-ECMWF)	Lead: Microsoft (Amit) Contributors: WMO, UNHCR Mali/Gao, Microsoft, ACMAD



Microsoft

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13:00 – 14:00	Lunch	
14:00 - 15:30	Round-table • Experiences and feedback from partners and stakeholders (30 min, All) • Open discussion on extreme heat forecast, co-design, community awareness, capacity building, AI technology • Recommendations and way forward	WMO (Hlobsile)
15:30 – 15:45	Closing	KMD – PR

