Climate and Displacement Workshop

A Climate and Displacement Workshop was held on 4–5 November 2025 at the Intergovernmental Authority on Development (IGAD) Climate Prediction and Applications Centre (ICPAC) in Nairobi, Kenya. Participants included representatives from the governments of Kenya, Ethiopia, Somalia, and Chad; staff from UN agencies including UNHCR, IOM, UNEP, UN-Habitat, and UNICEF; researchers from the Luxembourg Institute of Science and Technology (LIST), IGAD, and the Alliance for Biodiversity–CIAT; and representatives from the German Agency for International Cooperation (GIZ).

Day 1: Research and development of data driven systems on climate change and human mobility

Following opening remarks from UNHCR Senior Data Scientist Andrea Pellandra, Andrew Wells, Associate Data Scientist at UNHCR, presented the CRAF'd-funded CLIFDEW-GRID project led by UNHCR's Data Science team. The session introduced the project's objective—predicting forced displacement at the grid-cell level in East and West Africa under climate-change scenarios—described the machine-learning models underpinning these forecasts, and demonstrated the dashboard developed to visualize predictions and related data.

Yu Li, Senior R&D Scientist at the Luxembourg Institute of Science and Technology (LIST), then presented the project *Forecasting Internal Displacement to Enable Anticipatory Humanitarian Response in Somalia*. This initiative forms part of the Early Warning and Effective Response System (EWERS) programme, funded by the Luxembourg Ministry of Foreign Affairs and implemented jointly by UNHCR's Innovation Service, the Global Data Service, and LIST. The project aims to strengthen real-time data collection, analysis, and alert dissemination to enhance preparedness and anticipatory action for climate-related displacement. Yu Li highlighted advances in impact-based forecasting for flood-induced internal displacement. Using IDP data from UNHCR's PSMN project in Somalia, the forecasting model demonstrated promising performance with potential for regional scale-up. Plans for the next phase include expanding data collection to additional African countries such as Chad and the Central African Republic, improving flood-forecasting accuracy through the new version of GLOFAS, and adapting the methodology to additional displacement drivers including drought, cyclones, and conflict.

Jully Ouma, Thematic Lead for Early Warning Systems at ICPAC, provided an overview of IGAD and the role of ICPAC, established in 2007. ICPAC's six technical units cover climate diagnostics and prediction; climate applications; data management, remote sensing, and geospatial analysis; disaster risk management; climate change; and food security. ICPAC integrates data from weather stations and satellites to produce short-, medium-, and long-term climate forecasts and analyses, which are disseminated to government partners and stakeholders across the East African region. ICPAC also facilitates coordination among regional actors to support the implementation of climate-risk mitigation activities.

Mohamed Omar, Thematic Lead for Human Mobility in the Context of Climate Change at ICPAC, presented ongoing efforts to develop climate-mobility modelling approaches, including flood- and drought-related displacement modelling, machine-learning applications, and agent-based modelling. He highlighted progress in integrating displacement-risk information into regional early warning platforms such as the East Africa Hazards Watch, the development of displacement-risk profiles, ongoing data-integration efforts, and an early prototype of the Human Mobility Watch platform.

Dr. Nishad Kalladath, Data Science and Machine Learning Expert at ICPAC, outlined the CRAF'd-funded project *Hazard Modelling, Impact Estimation, and Event-Based Climate Storylines for Drought and Flood Disasters in Eastern Africa*. The project aims to enhance the East Africa Hazards Watch Portal through impact-based forecasting supported by ensemble prediction systems (EPS), cloud-

optimized datasets, parsimonious hazard and impact models, and co-produced storylines developed using Bayesian Networks and story maps. The presentation demonstrated how linking observation-derived thresholds with ensemble forecasts and forecast-to-impact modelling can generate actionable probabilistic early warnings for the region.

Day 2: Applications of data driven systems for improving services for people on the move in the context of climate change

Atinkut Mezgebu Wubneh, Senior Development Officer at UNHCR Ethiopia, and Ato Ashenafi, Director of Refugee and Returnee Services for the Government of Ethiopia, presented an overview of refugee services and initiatives in Ethiopia. They described the country's displacement dynamics, noting Ethiopia's long-standing role as host to more than 1.1 million refugees, many living in climate-vulnerable border areas. The presentation outlined national policy and institutional frameworks, including the government-led Makatet Roadmap, which supports the inclusion of refugees in national systems.

The presenters also highlighted environmental protection and climate-resilience initiatives such as watershed rehabilitation, reforestation, clean-cooking solutions, off-grid energy expansion, and climate-finance mobilization. They introduced an innovative proposal on artificial intelligence–based predictive modelling for forced displacement, intended to support anticipatory action, contingency planning, and resource allocation. Key takeaways included the need for integrated humanitarian–development–peace (HDP) programming, strengthened preparedness for climate shocks, improved local capacities, and long-term financing to build resilience in refugee-hosting areas.

Harry Cook, Regional Specialist for Data and Research at the IOM, presented the IOM's work on internal displacement in Mozambique; specifically, how data is being used to prepare and inform anticipatory action to support those displaced. Based on data involving displaced community locations and vulnerability levels, IOM is using further data on drought and flood conditions to anticipate displaced people who will be effected by the climatic hazards.

Claus Bech Hansen, Head of the IOM Climate Mobility Innovation Lab, Africa, presented the work of IOM's Climate Mobility Innovation Lab (CMIL). CMIL incubates and scales innovative solutions linking climate change and human mobility, while it catalyzes policy, financing, and cross-sector collaboration. It does this by cultivating and testing scalable, context-sensitive solutions; sharing knowledge through peer-to-peer learning and exchanges; and connects actors to foster ideas and change. CMIL hosts the Risk Index for Climate Displacement, which quantifies national-level climate risk by combining hazard, exposure, and vulnerability data, including hazard maps, population density, and socioeconomic indicators. Additionally, CMIL's Climate Catalytic Fund delivers match-funded grants to priority displacement hotspots identified by the Risk Index.

Olivier Jean March Ouegnin, Information Management Officer at UNHCR Chad, and Arsene Djoula from the Ministry of Environment of the Republic of Chad, presented on the impacts of climate change across Chadian regions, including rising temperatures, irregular rainfall, and increasing drought frequency. National Adaptation Plan surveys found that 91% of households reported significant environmental changes, including water scarcity, flooding, and forest degradation. These factors have contributed to substantial migration and forced displacement.

UNHCR and the Government of Chad have conducted border-area surveys with people leaving the country, many of whom cited conflict and economic hardship—both of which are believed to be exacerbated by climate change—as drivers of movement. The presenters outlined ongoing initiatives, including expanded data collection on mobile populations and risk-mapping activities to

support early warning systems, which aim to better understand displacement drivers and improve protection outcomes.

Waweru Ndungu, Senior Shelter Cluster Coordination Officer for UNHCR Somalia, presented the Protection and Solutions Monitoring Network (PSMN), a key system for tracking population movements and protection risks. Managed by UNHCR in collaboration with NRC and ten national NGOs, the PSMN operates through 60 trained monitors across 15 regions, collecting near real-time data on displacement drivers, movement patterns, and associated protection concerns. Since 2016, PSMN has recorded more than 10 million displaced individuals and over 250,000 movement incidents, providing essential evidence for humanitarian planning and resource allocation. Climate shocks remain a major displacement driver: the 2022 drought displaced approximately 1.3 million people, while the 2023 floods displaced nearly 2.9 million. PSMN data has significantly contributed to improved early warning, contingency planning, and pre-positioning of emergency supplies in high-risk areas.

Mohamed Hussein Hared, Director General of the Somalia Disaster Management Agency (SoDMA), outlined the agency's mandate and the key hazards facing Somalia, including droughts, floods, epidemics, storms, pests, and conflict. SoDMA collects multi-hazard and underlying-risk data to support national early warning systems and provide timely alerts to government institutions and humanitarian partners.

Carolyne Lumbasi and Hawo Bonaya of the Government of Kenya, Department of Refugee Services, gave an overview of the refugee situation in Kenya; that Kenya is the 5th largest refugee-hosting country in Africa and hosts almost 900,000 registered refugees and asylum seekers. Along with the many laws and policies that Kenya offers to protect, provides for, and integrate refugees, additional initiatives are being taken to help refugees and host communities facing climate change. These include the 'Shirika Plan', which includes reforestation to combat desertification, the adoption of alternative energy like solar power, and sustainable water management strategies. The plan also focuses on environmental sustainability within its broader goal of integrating refugee settlements with host communities and enhancing resilience against climate impacts like droughts and floods. In order to understand the needs of refugees and host communities facing climate change, the Department of Refugee Services engaged in a number of data collection actives, such as surveys, which have built more resilient communities and offered pathways for refugee integration.

Hrayr Wannis, Monitoring Manager at UNICEF, presented an initiative to harmonize global hazard and exposure datasets for children. The project aims to build a unified multi-hazard database that integrates climate, environmental, geophysical, and conflict-related risks with high-resolution (100-metre) population data for children under 18. This resource will support updates to the Children's Climate Risk Index (CCRI), national planning and NDC processes, emergency preparedness, climate-finance proposals, and data-driven targeting for adaptation investments. Multi-hazard exposure scoring illustrated the extent to which children face overlapping risks.

Wandia Riunga, Statistician at UN-Habitat, presented on the global housing and slum crisis and the role of UN-Habitat's Data Unit in promoting standardized, high-quality housing data. Recognizing that displacement is increasingly urban, UN-Habitat works to align and integrate housing and displacement data to support global comparability. The Data Unit collects information on indicators such as housing supply, affordability, tenure security, building quality, and informality. Through the Global Data Coalition, UN-Habitat brings together national statistical offices, cities, academia, the private sector, and civil society to strengthen data governance and facilitate peer learning.

Avery Fiftal, M&E, Communications, and Reporting Officer, and Natalie Hubackova, Programme Management Assistant, UN Environmental Programme (UNEP) presented the work of UNEP's

Disasters and Conflict Branch. The presentation focused on the work being done on the intersection between climate change and security concerns in Somalia. This included a discussion of STRATA, which is a web-based geospatial data platform that identifies and tracks where environmental, climate, and security stresses converge with socio-economic vulnerabilities and instability; and how the platform was used to identify a state in Somalia, Hirshabelle, as one of the highest-risk convergence zones, experiencing climate stress, fragile livelihoods, and governance pressures. These findings motivated the Government of Somalia to partner with UNEP, FAO, IOM, UN-Habitat, UNIDO, and WVI to engage in the Jowhar Offstream Storage Programme, which strengthens water security for communities in the area. The presentation also focused on how the UNEP's Disaster and Conflict Branch is collecting and analyzing data on the environmental impact of conflict, which has led to the development of the Technical Guidance on Environmental Data Collection in Conflict-Affected Areas.

Each of the presentations led to discussions on methodologies being used, communication and outreach strategies, and ways that implementation of models and early warning systems can be improved. Based on the degree of overlap of the projects, there were additional discussions on how those involved could collaborate on data collection, analysis, and dissemination to better provide services to those being impacted by climate change and potentially being forced to move.