



HEat and HEalth African Transdisciplinary Center

Empowering African Researchers

The HE²AT Centre supports African researchers in addressing climate and health challenges through pilot projects that foster collaboration and build local expertise. These projects focus on developing practical responses that enhance resilience, equity, and health outcomes for vulnerable communities. Together, they help strengthen a network of African research excellence, ensure the continent's needs and perspectives shape global climate and health discussions.



Achiri Elvis Ndikum

Researcher, University of Yaoundé /
Co-Founder & President, Global
Youth Strategy on Air Pollution &
Climate Health.

Investigating Climate Impacts on Cardiopulmonary Health in Yaoundé, Cameroon

This project explores the relationship between seasonal temperature, humidity, and rainfall and emergency hospital admissions for respiratory conditions, such as asthma, and cardiovascular diseases, like stroke, in Yaoundé, Cameroon. It analyzes consultation data from three major hospitals between 2019 and 2022.

Impact

The study provides scientific evidence that can guide climate and health advocacy, supporting efforts to reduce carbon emissions and improve air quality. It highlights the need for better cardiopulmonary health interventions, particularly for children with asthma, while addressing public misinformation about climate change.



Liberty Makacha

Researcher at Midlands State University
(Zimbabwe), Kings College London
(United Kingdom) and Imperial College
London (United Kingdom).

Advancing Spatial Data Science for Environmental Health in Africa

This project focuses on developing advanced data science methodologies to quantify environmental exposures, such as temperature and air pollution, in sub-Saharan Africa. By integrating land use metrics with deep learning models, it aims to fill critical knowledge gaps and build capacity in data science and climate research. Project results further support maternal and newborn health research by accurately capturing real-world spatio-temporal exposure variations.

Impact

Project results further support maternal and newborn health research by accurately capturing real-world spatio-temporal exposure variations.

This research contributes innovative methods for environmental data extrapolation that can enhance heat, pollution, and health research across Africa. It can inform strategies for health interventions by addressing the socio-geographical factors influencing exposure risks, providing essential insights into the exposome in African settings. The project's work strengthens HE²AT's capacity to leverage data science for climate-health research and policy-making for maternal and newborn health.



Olumuyiwa Adegun

Senior Lecturer, Department of
Architecture, Federal University of
Technology, Akure, Nigeria

Assessing Intra-Urban Heat-Health Vulnerabilities in Lagos, Nigeria

This project investigates heat-health vulnerabilities across formal and informal neighborhoods in Lagos, Nigeria, using geospatial data to assess risks and explore differences in adaptation challenges between different communities.

Impact

The study highlights significant heat risks in urban local climate zones, especially in informal settlements, emphasizing the need for targeted interventions. It reveals differences in housing conditions and heat perception,

with informal communities facing greater difficulties in coping with heat-related health problems such as malaria, headaches, and fatigue, as well as limited access to medical care.

Building on these findings, the team secured additional funding from the Global Disaster Preparedness Centre in 2023 to pilot a Community Heat Early Warning System. This initiative raised awareness and promoted early actions to mitigate heat-related health risks, advancing the HE²AT Centre's mission to address climate-health challenges in vulnerable communities.



Dely Iba Dieudonne

Researcher at Centre Suisse de
Recherches Scientifique en Côte
d'Ivoire, Abidjan, Côte d'Ivoire.

Social Media and Public Perceptions of Heat in Abidjan, Côte d'Ivoire

This project explores perceptions of heat waves amongst people in Abidjan by analyzing social media content alongside household survey and climate data. It aims to identify patterns in public awareness and responses to extreme heat and offer insights into how temperature thresholds influence adaptation behaviors.

Impact

This project can support heat Early Warning Systems by aligning public communication with real-world adaptation behaviors, using insights from social media, climate data, and household surveys. It provides community-validated information on temperature thresholds that influence behavior, supporting evidence-based recommendations for organizations like the World Health Organisation and World Meteorological Organization.

Collectively, these pilot projects contribute to building climate-resilient health responses across Africa. By supporting local researchers, these initiatives generate valuable data and inform policies and interventions that address the complex health challenges linked to climate change. Their outcomes will guide efforts to reduce health inequities, strengthen community resilience, and foster a sustainable future for the continent. Together, they reflect the HE²AT Centre's commitment to advancing health and climate research that responds to Africa's needs and priorities, and facilitating the next generation of leaders in climate-health research.