

The Partners



Methodist Ministries Centre, Block B
second floor,
Oloitokitok Rd., Lavington
Nairobi – KENYA
mnu@majinaufanisi.org

Maji na Ufanisi is a Kenyan NGO renowned for innovative water management practices has worked in the WASH sector for 16 years and is known in the Kenyan NGO sector for providing sustainable solutions to challenges of Water and Environmental Sanitation (WES) in urban informal settlements and marginalized arid lands. Maji na Ufanisi uses an entrepreneurial, participatory and integrated approach in identifying project sites, participants and beneficiaries. The model ensures that communities managing these projects are able to improve their socio-economic livelihoods through the financial proceeds they generate from the projects. The youth and women in particular benefit from this innovative approach as they are hardest hit with unemployment and lack of education.



African Collaborative Centre for
Earth System Science (ACCESS),
College of Physical and Biological
Sciences, University of Nairobi
Email: access@uonbi.ac.ke

ACCESS was established as a scientific organization to identify and address the needs for regional cooperation amongst African scientists in global change research. It is currently funded through competitive grants from science foundations and international funding organizations. Its primary functions are:

- To foster global change research on a regional scale, including the impacts of climate change on water resources, food security, ecosystem, health and sustainable development in Africa
- To develop human resources and enhance regional scientific capacity.
- To provide support for policy formulation and institutional development in Africa.

As a result, the interests and capabilities of African global change researchers have both broadened and deepened substantially across the continent.



Institute for Climate Change and
Adaptation (ICCA), College of
Physical and Biological Sciences,
University of Nairobi
Email: ICCA@uonbi.ac.ke

ICCA was constituted at the University of Nairobi in 2011 with the mission of building human capacity to address climate change and adaptation through teaching, action-oriented research, development of innovative technologies and community participation. The Institute provides expert advice for national and regional policy formulation and implementation. Its diversified team of researchers drawn from across the University of Nairobi, the capacity to deal with climate change and offers formal training on climate science and adaptation at postgraduate level; professional short courses for adaptation actors in the public and private sectors including NGOs; climate change and adaptation research and knowledge exchange; policy advice and action-oriented community outreach programmes for implementation of practical climate change and adaptation options.

Climate Resilience for Nairobi's Informal Settlements



**Sustaining livelihoods, infrastructure and services
with dignity**

Why Slums & Climate?

Exposure to the elements



For historic and social reasons, most slums and informal settlements were created in marginal lands adjacent to rivers and inhospitable places, that have remained outside formal planning and thus subject to the worst of floods, and when rains fail, they have even less water and other essentials

Vulnerability & Right to Life



The majority of city residents live in the slums, which absorb and increasing number of jobseekers. The Constitution of Kenya and the United Nations Human Rights Charter assert the right to life. The combined impacts of extreme events with poor infrastructure and unsanitary conditions deny these rights

Social and Economic Rationale



Slums are the heart of the city, that house the labour force which works in the factories, markets, construction, banking, security. The trickle-down effect from economic growth is inefficient for improved services and infrastructure for the poor, and thus the demand for equity

Nairobi Climate Research Team

Name	Roles and Responsibilities
Prof. Daniel Olago DPhil Oxford,	<u>Project Coordinator</u> : Daniel Olago has carried out research and published on human and ecosystem vulnerability and adaptation to the impacts of climate change in the east Africa region. He has been involved in multi-disciplinary research, training and capacity building activities on global environmental change in sub-Saharan Africa for over 20 years.
Ms. Christine Omuombo Msc Plymouth, PhD finalist (Nairobi)	Biophysical issues/risk assessments; Logistics management; Christine Omuombo has carried out research and published in environmental geology, water resources and hydrogeochemistry, palaeoclimatology and human impact on the environment on the past and present landscapes. She has been involved in multi-disciplinary research and training in Kenya for over 10yrs
Dr. Lydia Olaka PhD Potsdam, Germany	<u>GIS Oversight and Mapping</u> : over 15 years experience working in the field of watershed management and hydrological dynamics with focus on GIS, Remote sensing, modelling and climate change in the East Africa Region. Water Infrastructure Solutions from Ecosystem Services Underpinning Climate Resilient Policies and Programmes WISE-UP to Climate project. – Tana river; Resilience Framework to Climate Change in Mount Elgon, IUCN/USAID project.
Dr. Alfred Opere PhD, Nairobi University	<u>Climate and Hydrology; Risk assessments</u> : Senior Lecturer in the Department of Meteorology, University of Nairobi, Kenya. Research and training experience in meteorology and climate change; Hydrology and water resources as relates to natural resources. He was a Theme Researcher for Flood Frequency Analysis Component for the FRIEND/Nile Basin; Theme Researcher for Hydrologic Modeling
Ms. Eunice Boruru MA Rural Sociology, PhD	<u>Socio-economic issues/adaptation; risk assessments</u> : Eunice Boruru published research on climate change and pastoralist livelihood systems; gender and climate change; impacts and adaptation strategies using indigenous knowledge; resource-based conflicts in Northern Kenya. Biophysical impacts, resources and livelihoods in the ASALs of Kenya.
Three technical officers for GIS	GIS Assistants; Detailed Mapping, survey and topography
Twelve MSc and PhD students from ICCA/ Univ of Nairobi	Research Assistants; Field work and desk top data collection:

Climate Resilience Program Leaders



Prof Eric Odada, PhD Applied Geochemistry Imperial College, Fellow, World Academy of Sciences; World Academy of Art and Science; Director, United Nations University Regional Centre for Integrated Water Resources Management, Directly supervised 50 Africans PhDs and organised hundreds more, is on the UN Secretary Generals Board on Water and Sanitation (member since inception)



Dr. Shem O. Wandiga: Professor of Chemistry. Director, Institute for Climate Change and Adaptation. Professor Wandiga's research interests lie in studying sources and sinks of biogenic gases; Was the Principal Investigator evaluating and adaption to climate-change-induced vulnerability to malaria and cholera in the Lake Victoria Region under the GEF funded, UNEP executed and START and TWAS implemented project: Assessment of Impact and Adaptation to Climate Change.



Prof Edward Kairu, on obtaining his PhD in Climatology from McGill University in Canada; and taught at Kenyatta and St Paul's Universities. Prof. Kairu has over 20 years of successful development in the nexus between water resources, agriculture/food security, climate change, poverty, and sustainable development. He has over the last 10 years understudied the dynamics and challenges of urban development in Kenya and other African countries



Alice Karuga has an M.A. in Urban Management from Erasmus University in Netherlands. She is the Principal Officer on devolution, governance and social inclusion at MnU, where she provides leadership and guidance to technical, regional managers and partner organisations on project cycle management and inclusive governance. In her previous work she supported women parliamentarians on strategic planning and policy development

The Resilience Program

Lessons from the past

To establish what happens when extreme events (droughts, floods) affect Nairobi, Maji na Ufanisi approached two of Kenya's leading research centres: the African Collaborative Centre for Earth System Sciences (ACCESS) and the Institute of Climate Change Adaptation (ICCA) both at the Chiromo Campus of the University of Nairobi. The two institutions will be assessing collective impacts from population growth on informal settlements, many of which lie within flood plains, challenges and coping mechanisms from previous floods and droughts.

Evidence base for decisions....will improve effective and coordinated actions for Nairobi's resilience.

Learning from the present

While MnU reached out to governments departments and civil society to bring on board insights from how different organizations are contributing to social progress, citizen voice and transformation to governance, ACCESS and ICCA are working with researchers and practitioners from leading scientific institutions involved in hydrology, remote sensing and climate science. All are reaching out to specialized institutions and implementing agencies that are involved in disaster relief as well as longer term development to get a better sense of how improved coordination can enhance societal resilience to impacts from extreme events.

Evidence based decisions

By the end of the present research period, reports will provide decision makers, planners and practitioners with a range of data and information intended to provide crucial and strategic knowledge based from review and analysis of

- the variety of actions being carried out in Kenya aimed at, or that can assist in, improving climate resilience;
- existing limits and barriers to scientific research and practical adaptation measures;
- Development of a multi-stakeholder framework that can improve concomitant action to enhance Nairobi's climate resilience

Engaging with citizen voice: how to include those living at the margin in decisions that affect them

The Nairobi Climate Research Project

Background

Climate change and its impact through the water sector has become the greatest risk to human well-being, economy and livelihoods in the world. Within the Greater Horn of Africa, climate change has intensified floods and deepened droughts, and threatens to reverse decades of hard won gains in social and economic infrastructure.

People living in urban informal and slum settlements are faced with the highest and long lasting impacts. Many of these settlements are located in riverine floodplains with little protection against extreme events; and when disaster strikes, access to provide relief is hindered by lack of infrastructure.....

Nairobi, the capital city, generates more than half of Kenya's GDP, yet 60% of the population resides in these informal and slum settlements. Protecting the lives and assets of this exposed and vulnerable segment is thus not only a moral issue but critical to sustain economic production.

The African Collaborative Centre for Earth System Science (ACCESS) and the Institute for Climate Change and Adaptation at the University of Nairobi are undertaking research to identify the biospherical and socio-economic elements related to climate vulnerability in Mukuru, Mathare and Kibera; and will be supported by public and civil society organisations involved in different aspects of development and disaster relief.

Twelve PhD and MSc students from the University are involved in the climate research project.

Objectives of the dialogue

The major objective of this meeting is to present preliminary findings from scientific research and practitioners from diverse disciplines who are involved in climate change analysis and identification of structural and non-structural measures to enhance resilience.

We expect this will provide a medium-term framework for fruitful dialogue between civil society, public administration, economists, social scientists, development partners and the private sector...

"to contribute to the body of knowledge on climate change in Nairobi's informal settlements and opportunities, provide knowledge on climate change adaptation strategies that have worked elsewhere and create awareness that informs policy", while the specific objectives of the consultancy are stated as follows:

Specific Objectives:

1. Identify the Climate Change indicators in Nairobi. Undertake a contextual analysis of Climate Change trends in Nairobi, identifying the challenges for implementing different adaptation actions currently being undertaken and opportunities for climate resilience, with a focus on the livelihood of the poor.
2. Stock-take existing information, including analysis of the climate related impacts as well as main barriers impeding implementation of immediate adaptation strategies and measures.
3. Highlight adaptation opportunities and alternatives should constitute the basis for Maji na Ufanisi's programming.

Further, the assessment will include the following elements in support of the above-mentioned objectives:

Current Vulnerability Assessment, Characterization of current climate conditions and natural hazards Impact of Climate Change in Nairobi County, including impact considerations in National and County Integrated Development Plans and Policies, This comprises a comprehensive description of the main roles, regulatory issues, policies, actors and planning processes relating to Nairobi County.

Others will include:

1. Assessing current vulnerability of development objectives to climate change.
2. Assessment of current socio-economic conditions and vulnerability.
3. Future Climate-Risks Assessment
4. Assessing future climate change risks to development
5. Extrapolations of existing socio-economic trends
6. Expected/potential impacts on development
7. Economic and Financial impacts of climate change/ Climate Risk Analysis