MIASA Thematic Conference 2022

African Cities: Climate Change and the Search for Resilience

University Eduardo Mondlane Maputo

Faculty of Arts and Social Sciences

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Introduction

Whilst there is compelling evidence to prove that urbanization in Africa has significantly boosted development, the urbanization experience is largely a story of increasing urban poverty, poor land use planning, and inadequate socio-economic infrastructure. The urbanization pressure faced by African countries is exacerbated by the changing climate and also contributes to it. It is a challenge that concerns the entire urban environment, including conflicting imaginations of how African cities of the future should look like. While the issue of how African cities can adapt to their environment has a long history, the frequency and intensity of weather-related hazards in the last decades have increased posing a threat to African cities and a realization of meaningful progress toward the United Nations Sustainable Development Goals (SDGs) in the Sub-Saharan region. Global warming is making cities warmer and the urbanization process is intensifying. Coastal erosion due to rising sea levels is threatening several coastal cities in Africa, exposing them to episodic floods. Extreme weather events such as drought are forcing rural farmers to migrate to urban centers whiles perennial floods are displacing poorly planned neighborhoods and poor urbanists. As per the report led by Funke (2018), the dramatic situation brought by natural disasters has increased Internally Displaced Persons. Hence, population mobility is increasingly driven by climate change, particularly mobility toward the cities contributing to worsening living conditions.

Many urban dwellers in Africa today live in areas vulnerable to environmental hazards. The poor state of sanitation, ground sealing, the cutting of trees, built-up of green spaces, and agricultural lands with structures, air pollution from waste and fumes from automobiles, the use of air-conditioning systems, fuel-generators, and pollution of water bodies and wetlands are all contributing to harming the environment and the vulnerability of city dwellers (Addae & Oppelt, 2019). The poor land-use practices, more and more tarred roads with no or only a few trees, and non-adapted building materials have increased land surface temperature and contributed to the urban heat island effect. The consequences of the connections between climate change and the urban heat island effect are expected to increase the risk of poor health in cities (Kumar, 2021), while those who have the necessary revenues use more and more climate-unfriendly devices. Climate change could also affect the economic and political stability of cities in addition to negative effects on public health (Raimundo, 2021), thus the need to ascertain the linkages in these areas, its impact on lives, and the gendered implications.

However, recent urbanization and development models have sidelined discussions and development of models and strategies for this triad of urbanization, development, and climate nexus which has set Africa under insurmountable pressure and efforts at building resilience.

This conference thus seeks to open an interdisciplinary dialogue and solicit models, strategies, and prescriptions for dealing with Africa's urbanization, development, and climate pressure. It also seeks to highlight local initiatives aimed at building climate resilient cities in Africa. The key questions that the conference seeks to address include:

- To what extent is the nexus between the urbanization process and climate change impacting the lives and livelihoods of urban residents in Africa?
- Which sustainable urbanization initiatives/ indigenous knowledge/strategies exist in building climate resilient urban communities?

- What lessons could be learned from these strategies/initiatives to build sustainable cities in Africa?

Plenary Themes:

a. Existing climate change models and the implications for African Cities
b. Urbanization and climate change impact on vulnerable populations in Africa -rural vs urban.
c. Building sustainable cities in Africa – method and strategies

Axis and Sub-themes:

1. Population, Urbanisation and Climate Change Nexus
   Issues:
   - Urbanisation and extreme weather events/Climate change and urban vulnerability
   - Urbanisation, migration, and climate change
   - Urbanisation, gender, and climate change

2. Urbanisation, Climate Change, and Societal Responses
   Issues:
   - Climate change, urban vulnerabilities, and institutional response
   - Indigenous/local knowledge in building climate-resilient society
   - Resilience to climate change: Gender perspectives

3. Building Climate-Resilient Urban Societies
   Issues:
   - Building climate smart /sustainable cities
   - Climate-smart agriculture (in cities)
   - Gender and climate

Conveners:

Prof Ines Macamo Raimundo, Department of Geography, University Eduardo Mondlane, Maputo Mozambique

Prof Charlotte Wrigley-Asante, Department of Geography and Resource Management, University of Ghana, Legon, Ghana

Prof Alex Barimah Owusu, Department of Geography and Resource Management, University of Ghana, Legon, Ghana

The conference takes place in the framework of the Merian Institute for Advanced Studies in Africa (MIASA) which was funded in 2018 at the University of Ghana in Legon/Accra. The conference is part of the outreach program of MIASA in collaboration with the University Eduardo Mondlane in Maputo and the Goethe University in Frankfurt/Main in Germany. MIASA is funded by the German Federal Ministry for Education and Research. For more information, please consult: https://www.ug.edu.gh/mias-africa/node/1

Program

Day 1, 24 October 2022, Axis 1: Population, Urbanisation and Climate Change Nexus

9:00-10:00	Welcome Addresses and Introduction by:
	Samuel Quive, Prof and Dean of the Faculty of Social Sciences and Humanities, University Eduardo Mondlane, Maputo
	Susann Baller and Grace Diabah, Directors of MIASA, University of Ghana, Accra (online)
	Marko Scholze, Coordinator for the MIASA outreach program, Goethe University Frankfurt/Main
	Conveners: Ines Macamo Raimundo, University Eduardo Mondlane, Maputo; Charlotte Wrigley Asante and Alex Barimah Owusu, both University of Ghana, Legon/Accra
	Morning Sessions, Chair: Ines Macamo Raimundo
10:00-11:00	Keynote 1: Amy Stambach: *African Cities: Climate Change and the Need for Accountability*
11:00-11:30	Coffee Break
11:30-13:00	Panel 1, Axis 1 Gracsious Maviza: *Differential Vulnerabilities of Female Street Entrepreneurs in Cities in the Face of Urbanization and Climate Change*
	Serigne Momar Sarr: *Urban Modernization: When Dakar Makes its Floods*
	Henrique Cau and Patricio Langa: *Family Farming and Climate Change Resilience: Understanding the Urban through the Rural*
13:00-14:00	Lunch Break
	Afternoon Sessions, Chair: Alex Barimah Owusu
14:00-15:30	Panel 2, Axis 1 Ambe J. Njoh: *Impact of Urbanization, Forests and Elevation on Climate Change in Africa*
	Ratsaramiafara Mamie Albertine: *Climate Change and Cities: Human Behavior Towards Urbanization, Vulnerability and Resilience Concepts in Developing Countries (Madagascar)*
	Joram Tarusarira: *Centering Sacred Worldviews against Climate-Induced Rural to Urban Migration*
15:30-16:00	Coffee Break
16:00-17:00	General Plenary Discussion on Axis 1
19:00	Welcome Dinner

Day 2, 25 October 2022, Axis 2: Urbanization, Climate Change and Societal Reponses

Morning Session, Chair: Charlotte Wrigley-Asante

9:00-10:00 Keynote 2:

Danny Mulala Simatele: *"Unlocking the Locked": Securing the participation of Marginalized Groups in Climate Change Governance in African urban centres – Lessons from South Africa*

10:00-10:30 Coffee Break

10:30-12:00 Panel 3, Axis 2
Kayode Michael Samuel and Samuel Ayoola Adejube: *Redefining the Resilient Gasping Lagos Megacity: An Eco-musicological Discourse of Selected Works of Lágbájá*

Michaela Meurer and Sara Lüttich: *Towards Multiple Climate Change Conceptions and Diverging Resilience Strategies – Empirical Insights from Malawi and Mozambique*

Moubassiré Sigué: *Sustainable Cities and Communities through the Prism of an Internalization of Gendered Social Logics*

12:00-13:00 Lunch Break

Afternoon Session, Chair: Ines Macamo Raimundo

13:00-14:30 Panel 4, Axis 2
Taku Catherine Arrey-Ngang: *Urbanization And Climate Change: A Gender Perspective Of Resilience*

Etsong A. Mbang: *Fragility of African Middle Classes and Urban Risks*

Alouis Chilunjika and Pulane Mahase: *Building Climate Change Adaptability through Integrating Indigenous and Scientific Knowledge Systems in Lesotho*

14:30-15:00 Coffee Break

15:00-16:00 Poster Session "Research on Climate Change in Mozambique"
Arcelia Elisa Mondlane Antonio, Sonia Cintura, Berta Joaquina Macamo, Rachid Madingue, Remigio Carlos Murela Nloco, Salomao Manuel Nicasse, Evaristo Daimone Saene

16:00-17:00 General Plenary Discussion on Axis 2

Free Evening

Day 3, 26 October 2022, Axis 3: Building Climate Resilient Urban Societies

	Morning Sessions, Chair: Alex Barimah Owusu
9:00-10:00	Keynote 3:
	Nana Ama Klutse Brown: *Building Climate Resilient Cities*
10:00-10:30	Coffee Break
10:30-12:00	Panel 5, Axis 3 Elis Mavie and Simão Manuel Beira Rodrigues Dias: *Participatory Planning and Urban Resilience: Exploring Urban Tools to Address Vulnerabilities in Informal Settlements-The Case of Chamanculo C"*
	Adam Kyomuhendo: *Strategic Litigation as a Tool of Resilience against Climate Change: Some Reflections*
	Clayton Vhumbunu: *Climate-Smart Urban Agriculture in Windhoek, Namibia*
12:00-13:00	Lunch Break
	Afternoon Sessions, Chair: Charlotte Wrigley-Asante
13:00-14:30	Panel 4, Axis 2 Tadey Pirc: *Towards a Post-Rationalist Concept of Development: Hybrid Landscapes and the Future of African Cities*
	Yaw Agyeman Boafo: *Exploring Stakeholders' Perceptions on the Viability and Barriers to the Adoption of Vertical and Rooftop Farming in Accra, Ghana*
	Pauline Mateveke Kazembe: *Gender, Urbanization and Climate Change: Depictions from Selected Zimbabwean Women Creative Writers*
14:30-15:00	Coffee Break
15:00-16:00	General Plenary discussion on Axis 3, Final Remarks and Closing
16:00	City Tour Maputo
19:00	Farewell Dinner

Participants (in alphabetical order)

1. Samuel Ayoola Adejube, PhD-candidate, African Studies, University of Ibadan, Nigeria
2. Arcelia Elisa Mondlane Antonio, PhD-candidate in Population and Development, University Eduardo Mondlane, Maputo, Mozambique
3. Prof Carlos Arnaldo, Centre for African Studies, University Eduardo Mondlane, Maputo, Mozambique
4. Dr Taku Catherine Arrey-Ngang, Literary Studies, Cameroon Women for Peace Movement (CAWOPEM), HIBMAT, University Buea, Cameroon
5. Dr Yaw Agyeman Boafo, Climate Change and Sustainability Studies, University of Ghana, Legon, Ghana
6. Prof Nana Ama Klutse Brown, Physics, University of Ghana, Legon, Ghana
7. Henrique Simione Cau, PhD-candidate in Development and Society, University Eduardo Mondlane, Maputo, Mozambique
8. Angela Chade, Water and Sanitation for the Urban Poor (WSUP), Maputo, Mozambique
9. Dr Alouis Chilunjika, Public Management and Governance, National University of Lesotho, Maseru, Lesotho
10. Sonia Cintura, PhD-candidate, Development Studies, University Eduardo Mondlane, Maputo, Mozambique
11. Simão Manuel Beira Rodrigues Dias, Water and Sanitation for the Urban Poor (WSUP), Maputo, Mozambique
12. Siyaxola Gadu, PhD-candidate, University of the Witwatersrand, Johannesburg, South Africa
13. Dr Rogers J. M. Hansine, Geography, University Eduardo Mondlane, Maputo, Mozambique
14. Omar Khan, Water and Sanitation for the Urban Poor (WSUP), Maputo, Mozambique
15. Dr Pauline Mateveke Kazembe, English Studies, University of Zimbabwe, Harare, Zimbabwe
16. Adam Kyomuhendo, PhD-candidate, Law, Makerere University, Kampala, Uganda
17. Prof Patricio Langa, Sociology / Education, University Eduardo Mondlane, Maputo, Mozambique
18. Sara Lüttich, PhD-candidate, Sociology, Justus Liebig University, Giessen, Germany
19. Dr Gracsious Maviza, Development Studies, National University of Science and Technology, Bulawayo, Zimbabwe / University of Johannesburg, South Africa
20. Prof Ambe Jonathan Njoh, Geoscience/ Planning Studies/ International Affairs, University of South Florida, USA
21. Prof Alex Barimah Owusu, Geography and Resource Management, University of Ghana, Legon, Ghana
22. Berta Joaquina Macamo, PhD-candidate, Technology, University Eduardo Mondlane, Maputo, Mozambique
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24. Sara Márquez Martín, Architects without Borders Spain (ASF-Es), Maputo, Mozambique
25. Elis Mavie, Architect and Urban Planner, WSUP (water and sanitation for the urban poor) Maputo, Mozambique
26. Salomao Manuel Nicasse, PhD-candidate, Anthropology, University Eduardo Mondlane, Maputo, Mozambique
27. Etsong A. Mbang, PhD-candidate, Sociology, University of Coimbra, Portugal
28. Dr Michaela Meurer, Anthropology, Philipps University Marburg, Germany
29. Remigio Carlos Murela Nloco, PhD-candidate, Population and Development, University Eduardo Mondlane, Maputo, Mozambique

30. Dr Tadej Pirc, Philosophy, University of Leipzig, Germany
31. Prof Samuel Quive, Dean of the Faculty of social Sciences and Humanities, University Eduardo Mondlane, Maputo
32. Prof Ines Macamo Raimundo, Geography, University Eduardo Mondlane, Maputo Mozambique
33. Dr Mamie N. Albertine Ratsaramiafara, Anthropology, University of Antananarivo, Madagascar
34. Evaristo Daimone Saene, Master Student, Geography, University Eduardo Mondlane, Maputo, Mozambique
35. Dr Kayode Michael Samuel, Musicology, University of Ibadan, Nigeria
36. Dr Serigne Momar Sarr, Sociology, University Assane Seck de Ziguinchor, Senegal
37. Nomfundo Sibiya, PhD-candidate, University of the Witwatersrand, Johannesburg, South Africa
38. Dr Marko Scholze, Anthropology, Goethe University, Frankfurt/Main, Germany
39. Dr Moubassiré Sigué, Anthropology, Sociology, University Norbert Zongo, Ouagadougou, Burkina Faso
40. Prof Danny Mulala Simatele, Environmental Management and Sustainability, University of the Witwatersrand, Johannesburg, South Africa
41. Prof Amy Elizabeth Stambach, Anthropology, University of Wisconsin, Madison, USA
42. Dr Joram Tarusarira, Religious Studies, University of Groningen, Netherlands
43. Dr Clayton Hazvinei Vhumbunu, International Relations, University of Namibia (UNAM), Windhoek, Namibia
44. Prof Charlotte Wrigley-Asante, Geography and Resource Management, University of Ghana, Legon, Ghana

Abstracts

Keynotes

Keynote 1: Amy Stambach, African Cities: Climate Change and the Need for Accountability

This keynote upturns policymakers' argument that urban dwellers are victims of natural disasters that climate-smart technologies can save. It argues that agro-industrial biotechnologies, land grabbing practices, and digital surveillance products create climate change and impoverish some people while enriching others. Since the 2008 severe global financial crisis, furthered by Covid- and conflict-related supply chain disruptions, foreign investors have purchased vast tracts of land on the African continent to produce export agricultural commodities. The Nacala Corridor of northern Mozambique is one area of large-scale foreign agricultural investment. Another area outside Morogoro, Tanzania, involves a U.S.-based group of investors who bought ten thousand-plus hectares to develop agriculture. Large-scale commercial farming fed by chemical fertilizers and insecticides is a primary cause of climate change; digital technologies, produced and profitable to global investors, enable wealth concentration outside the African continent. Yet policy focuses on saving vulnerable urban populations using "climate-smart technologies" and biotechnologies rather than addressing the root causes of climate change and poverty. This paper will focus on the representations of "smartness" and "poverty" embedded in agro-industry marketing and publicity materials. Drawing field research conducted in Tanzania and on research and teaching conducted in South Africa between 2019 and 2022, I will argue that climate-changing agro-industrial practices drive smallholding farmers into urban poverty, where they bear the brunt of industry-created climate change.

Keynote 2: Danny Mulala Simatele, "Unlocking the Locked": Securing the participation of Marginalized Groups in Climate Change Governance in African urban centres – Lessons from South Africa

For many of the world's urban poor people, adaptation to climate change is not a choice, but a reality as they are at risk from the direct and indirect impacts of climate change. Existing evidence suggests that without effective and locally driven adaptation, the urban poor, particularly those living in the world's poor countries, will suffer serious social-economic and health consequences. This is because the poor lack any form of resources to effectively build their adaptive capacity and resilience to both internal and external stressors. It is however, important to note that the poor are not passive actors but they expend tremendous energy and vitality aimed at changing their miserable situations. On the contrary, national governments and local authorities have constantly failed to articulate new visions or provide necessary services and policy frameworks to enable the poor to adapt to the impacts of climate change. At the core of these failures is the lack of political will and poor climate change governance which is marred with high levels of corruption, incompetence and bureaucratic red-tape which combine to harm the development of pro-poor adaptation policies and strategies. Using research methods inspired by the tradition of participatory research, we explore and discuss the potential of local knowledge, local competence and local capacity of the poor urban residents in building the adaptive capacity and resilience of the African city drawing lessons from South African small towns. We examine the myriad ways in which climate change adaptation policies and strategies are developed, and systematically discuss the factors which either facilitate or hamper involvement of all stakeholders, especially

the urban poor in the development of these intervention measures. Of particular interest is to establish whose voices matter in the development of climate change adaptation policies and strategies in South Africa. These themes will be analysed and discussed within the broader framework of the sustainable development goals, particularly goals number 13, 16 and 17.

Keynote 3: Nana Ama Klutse Brown, Building climate-resilient Cities in Africa from past to future scenarios

Cities in Africa are projected to have the fastest growth rate in the world by 2050. This growth is in terms of population, infrastructure, migrants, social amenities, and other policy interventions. While this growth offers opportunities, it also poses significant challenges to our natural and built environment and a demand for a climate-resilient environment. Cities in Africa are under climate threats like sea level rise, increased stress on water resources, migration towards the cities, urban heat, etc. Cities on highlands are particularly vulnerable to drought, and others which are low-lying are vulnerable to floods, erosion, and storm surges. Most cities in Africa have limited adaptive capacity to deal with current and future climate impacts and extreme weather events. In building resilient cities, it is important to consider that the risks of climate change is critical for sustainable development. The Intergovernmental Panel on Climate Change (IPCC) reports the impact of climate change on cities with past evidence and future scenarios. The presentation focuses on the IPCC report as part of its outreach activities and recommends solutions to building climate-resilient cities in Africa.

Paper Presentations

Taku Catherine Arrey-Ngang: Urbanization And Climate Change: A Gender Perspective Of Resilience

Even though it is true that the entire planet and all humanity is adversely affected by climate change, its impact is unevenly disseminated, with the most vulnerable victims being the poor, those living in urban suburbs, and other less-privileged persons including women. With very few women found at decision-making tables, decisions on urbanization like building factories are arrived at without taking into consideration the plight of the suffering masses. Such suburbanization is often accompanied with water and environmental pollution, loss of farm lands, destruction of biodiversity and sometimes displacement of an entire populace. All these bring about untold miseries to women who are among those affected most by climate change. Research has however shown that women's participation in the drive towards climate solutions leads to better resolutions taken. This is what makes environmental damage and climate change a feminist issue to be discussed in this paper. Using two African novels, this paper uses the ecofeminist approach to expose women's resilience to climate change.

Yaw Agyeman Boafo: Exploring Stakeholders' Perceptions on the Viability and Barriers to the Adoption of Vertical and Rooftop Farming in Accra, Ghana

In an era of rapid urbanization in Ghana, Accra's drive towards mitigating global warming and climate crises and the need to create 'sustainable cities' for all calls for innovation in the use and management of spaces within the urban landscape. The objective of this study is to assess relevant stakeholders' perceptions of the viability and opportunities for uptake of vertical and rooftop farming systems in urban Accra. The study also explores barriers to adoption and implementation among different stakeholders. In addition to reviewing the literature, a semistructured questionnaire was used to interview relevant stakeholders, including peasant vegetable farmers (n= 20), households (n=30), policy and decision-makers (n= 8) and professional consultants (n= 10). The data collected from the questionnaires were quantitatively and qualitatively analyzed to understand stakeholders' perceptions. The study findings indicate that stakeholders possessed moderate to advanced knowledge and understanding of what vertical farming is and what it sets to achieve in the context of food security, urbanization, as well as maintaining ecological balance. Stakeholders perceived vertical and rooftop gardening as an innovative urban agricultural strategy centred around growing food and flowers in vertically stacked layers. Barriers to the uptake of vertical and rooftop farming from the study included lack of policy direction, technical know-how, information, knowledge and awareness, space, and cost among others. Whilst stakeholders' perception of the viability of vertical and rooftop farming is high, there is a need for formal integration of it into urban infrastructural development systems.

Henrique Cau and Patricio Langa: Family Farming and Climate Change Resilience: Understanding the Urban through the Rural

Family farming in Mozambique constitutes the economic activity that occupies about 75% of the productive activity of the Mozambican rural population. However, it is experiencing a downward trend due to the rural exodus, where among the various reasons, climate change stands out.
Climate change is associated with urbanization problems due to the lack of programs to accompany the rural exodus. The deficit in increasing production and productivity to meet the demand for food in urban areas and the unsustainable management of urban spaces have become the most visible face of the effects of climate change in the urban environment.

This article results from an ongoing mixed approach study that addresses the relationship between rural family farming and resilience to climate change in a context marked by precarious living conditions in urban areas. In a preliminary way, the study reveals the existence of a positive correlation between the degradation of living conditions in rural areas, climate change, and precarious living conditions in urban areas. The result of the study suggests the need for understanding the effects of climate change in urban areas in the context of its interconnection with the degradation of family farming in rural areas.

Alouis Chilunjika and Pulane Mahase: Building Climate Change Adaptability through Integrating Indigenous and Scientific Knowledge Systems in Lesotho

Climate change as a human security threat has weakened the ability of states to deal with severe weather patterns, droughts, land degradation, flooding, and other climate-related changes. This has significantly affected poor communities in developing countries as they are prone to low precipitation, high temperatures, and high poverty levels. In light of this, urban communities in Lesotho have for generations been adapting to climate induced hazards and risks by developing situation specific livelihood practices and building resilience of their households and communities. Nonetheless, in recent years, the increasing intensity and frequencies of climate extremes have revealed the limitations of indigenous and local knowledge in dealing with the scourge of climate change. As such, the need for the integration of indigenous and scientific knowledge systems in coping and adapting to climate change. The study being qualitative in nature will rely on the extensive review of purposively selected written sources which include journal articles, books, book chapters, Government publications, newspapers, magazines to collect data which will then be analysed using thematic and content analysis techniques. The study establishes that, integrating traditional and scientific knowledge systems in dealing with climate change vulnerability and impacts in Lesotho's urban areas is critical for policy makers to develop multi-level, multi-dimensional, multi-hazard and multi-disciplinary adaptation and resilience-building strategies and solutions that are sustainable, cost-effective and participatory. The integration of the scientific and indigenous knowledge and practices will help in proactively identifying current and future risks and hazards thus enabling the better implementation of climate-change policies in Lesotho.

Pauline Mateveke Kazembe: Gender, Urbanization and Climate Change: Depictions from Selected Zimbabwean Women Creative Writers

The study foregrounds the important but often overlooked interconnection of gender, urbanisation and the climate crisis in contemporary Zimbabwe. Specifically, the study situates this important discussion within the marginalised humanistic discourses by exploring the ways in which selected Zimbabwean women creative writers represent Zimbabwean women's experiences with urbanisation and how they adopt to the environmental effects of increased urbanisation. The study seeks to unpack the ways in which Zimbabwean women's fictional writing increases knowledge on environmental issues and to find out how that knowledge can, in reality, be used to influence people's responses to urbanisation and climate change. The assumption is that fictional literature not only represents human creativity, but, it is also a manifestation of humanity's everyday lived experiences. Yet, Zimbabwean women writers' voices on the subject of urbanisation and the climate crisis have always been placed on the margins. The toxic effect of this marginalization cannot be overstated because Zimbabwean women constitute the most vulnerable group of people who have to face the difficult reality of forging a life in urban contexts that are increasingly vulnerable to climate change induced environmental hazards. Thus, through an ecocritical theoretical lense, the study reads selected Zimbabwean women's fictional writings in order to re-

tell alternative ways of thinking about urbanisation and its effects on the environment. The overall aim is generate holistic knowledge through arts based discussions and to show the ways in which creative arts may be used to develop effective models and strategies for smart urbanisation, development and the climate crisis.

Adam Kyomuhendo: Strategic Litigation as a Tool of Resilience against Climate Change: Some Reflections

Climate change and unmitigated environmental degradation present an existential threat to all humanity. Indigenous populations of Africa (and the world) are the most extremely affected by this dangerous phenomenon since their existence is inextricably tied to nature and its resources. Yet their agency and knowledge systems have largely been sidelined in discourses and efforts towards building resilience against climate change. This disregard for indigenous knowledge systems is not completely innocent of the power dynamics in the political economy which seek to assert dominant or totalitarizing logics of what development and human progress should be.
Foregrounding the recent path-breaking judgment of the African Court of Human and Peoples Rights in African Commission on Human and Peoples Rights v. Republic of Kenya (Otherwise called the *Ogiek Peoples* case. Application No. 006 of 2012, delivered on 23rd June, 2022). as evidence of emerging climate change activism, the paper proposes to argue that; first, despite exclusion, indigenous people have taken brave steps to assert their agency and defend the vitality of their ways of life and knowledge systems through strategic litigation; secondly, that howsoever they have tried, they are limited by Eurocentric frameworks within which judicial systems operate; thirdly, that there is need to problematize Westphalian conceptions of statehood if indigenous knowledge systems are to make meaningful contributions to the fight against climate change, more so in city contexts. Simply put, the nation state's logic is to other those who are different.

Elis Mavie and Simão Manuel Beira Rodrigues Dias: Participatory Planning and Urban Resilience: Exploring Urban Tools to Address Vulnerabilities in Informal Settlements-The Case of Chamanculo C"

Chamanculo C is an unbuilt settlement in the city of Maputo that encompasses characteristics typical of, locally called, informal settlements: high population density, precarious housing, on the one hand, a strong sense of belonging and identity, and a strong connection to the wooded area, on the other hand, a strong sense of belonging and identity, and a strong connection to the wooded area. In this context, and following the Partial Urbanization Plan, the Chamanculo C Residential Areas Detailed Plan (PPARC) was elaborated. This instrument aims to operationalize the neighborhood's urbanization plan, taking it as an opportunity to firm up approaches to climate change, while at the same time providing space for urban space to flourish.
This article aims to describe the elaboration process based on two methodological approaches: local community participation-inclusion and economic, social and environmental feasibility. It also aims to analyze the objectives and results defined in order to have a future basis for measuring the real impact of these fronts on redevelopment once the plan is implemented. Finally, it is based on opening the debate about approaches for future urban tools that can meet the challenges of neighborhood redevelopment. In this framework, public space is central given its positive multiplier effects in the context of climate change adaptation. However, the challenge of collaborative design remains considering the integration into the urban fabric of Maputo, still at a nascent stage of inclusive resilient solutions.

Gracsious Maviza: Differential vulnerabilities of female street entrepreneurs in cities in the face of urbanization and climate change

Climate change has led to rapid urbanisation as rural populations move to cities partly in response to increased extreme weather events that negatively impact agricultural production. Although considered to have better resilience and options, cities have been noted to be epicentres of climate risk. This is partly because extreme weather events such as floods, storms and droughts and the associated spread of diseases significantly impact livelihoods, the provision of primary health and other public amenities. The impacts vary for different population groups. Women, for instance, are exposed to gendered formal and/or informal systems and settings exhibiting cleavages of inequality. In the informal sector, which is a fundamental component of urban economies in the Global South, they experience differential vulnerabilities linked to their resilience and adaptive capacity to different shocks and hazards. Some vulnerabilities can be attributed to colonial legacies of patriarchal structures and laws limiting women's access to fundamental services and/ opportunities such as employment and lines of credit. This research aims to evaluate the lived realities of female street entrepreneurs in Bulawayo in connection to climate risks and shocks, taking into account that most African cities are perceived as socio-culturally and (infra)structurally discriminatory, and frequently gendered environments. It will identify women's vulnerabilities and how they build resilience or adaptive capacity to deal with differential vulnerabilities to climate risks and shocks. Data will be collected using in-depth interviews and focus group discussions from female street entrepreneurs and key informants. Findings will contribute to the scholarship on the gendered nexus between climate change and urbanisation, bringing the urban environment into the climate-urbanisation-gender discussions.

Etsong A. Mbang: Fragility of African Middle Classes and Urban Risks

The Concept of the Middle Class in Africa has gained prominence as a driver of development in the discourse of development partners and international financial institutions. In the economic theory, it represents that part of the population that benefits sufficiently from growth by having access to a level of income allowing it to emerge from poverty. But in Africa, those who have succeeded often show solidarity with the less well-off, by participating in solidarity with the burdens and needs of the most needy. In crisis situations (food crises, pandemics, conflicts, extreme weather events), this capacity for mutual aid tends to become rare, and it's coupled with other vulnerabilities cause sporadic outbreaks of violence. In contexts of strong crisis and multiplication of extreme weather event, the link between climate change, middle class and political risks in Africa's urban cities however, has rarely been questioned. Starting from a rereading of the so-called hunger crises of 2008 in Cameroon and Senegal, to the Cyclone Idai in Beira-Mozambique and their impact on the middle class, this article intends to explore the possible links between the three concepts listed above and the appearance of political risk in the major african metropolises.

Michaela Meurer and Sara Lüttich: Towards Multiple Climate Change Conceptions and Diverging Resilience Strategies – Empirical Insights from Malawi and Mozambique

Our sociological and anthropological research on local conceptions and medial representations of climate change in the Dedza, Phalombe, Karonga and Blantyre districts (Malawi) and the Province of Nampula (Mozambique) points to some factors to consider for the construction of resilient cities. First of all, it shows multiplicity: in local perspectives, both conceptions of climate change and definitions of causes diverge significantly. This multiplicity is further reflected in diverging imaginations of and strategies for resilience. Furthermore, it is evident that, in practice, urban and rural spaces are linked in multiple ways and, accordingly, urban resilience cannot be thought of without rural resilience. Finally, the case studies show the specificity of cities or spaces

in the national margins and thus, point to the need to think of sustainable, resilient urbanization also in terms of the specific conditions beyond national centres. In our contribution, we will present initial findings from our surveys conducted as part of the interdisciplinary research project Nisansa (www.nisansa.org), which we collected from November 2021 to July 2022 using a variety of empirical methods, such as essay and painting competitions, media analysis, participant observation with informal conversations and interviews. Based on this, we will discuss the implications of these insights for considerations of climate-resilient cities. What are the consequences for sustainable urban development strategies and for stakeholders seeking to design and implement them?

Ambe Njoh: Impact of Urbanization, Forests and Elevation on Climate Change in Africa

Ongoing efforts to render urban areas in Africa climate-change resilient cannot succeed without adequate knowledge of factors affecting temperature behavior. Cognizant of this, the proposed study interrogates three theories linking average annual temperature change, respectively to urbanization forests, and elevation. The first posits that urbanization increases temperatures. Most industrial activities and fossil burning occur in urban areas, thereby, raising greenhouse gas emissions and temperatures. The second views forests as a determinant of annual temperatures. Forests tend to maintain low atmospheric pressures, which cause moist air to flow from ocean to land thereby decreasing land temperatures. The third is premised on the fact that temperatures are inversely related to elevation. These theories have not been adequately tested; consequently, many gaps characterize knowledge of climate change's determinants and impacts.

To help fill these gaps, the study will test the theories' tenability in Africa. Average annual temperature is the dependent variable, while urbanization, forest size and average elevation are the independent variables. National average annual temperatures in Africa are hypothesized to differ by levels of urbanization, forest size and average elevation. Regression models using secondary data from web-based sources—the World Bank's Climate Change Portal, UNDP, FAO, and CIA-Factbook—will be employed to test the hypothesized relationship.

As a policy implication, evidence affirming the study's central hypothesis bolsters the case for judicious urban management and the preservation of forests and hills as a strategy for making human settlements more climate-change resilient.

Tadey Pirc: Towards a Post-Rationalist Concept of Development: Hybrid Landscapes and the Future of African Cities

The perils of a GDP-centred perspective on development are becoming increasingly hard to overlook. Climate change, population growth, and rapid urbanisation are impacting all societies in the world, though not in the same way, and certainly not to the same extent. The disparity is especially evident in the Global South which, ironically, joined the race of progress—founded on the ideals of 'faster, higher, stronger'—last.

The post-Rationalist concept of progress and development is eliminating the fundamental onto-epistemological divide between the human and the natural, a separation which has been assumed as a given for millennia, especially in cultures of Greco-Roman origin. After disillusionment with the ideals of constant growth and expansion, and the failure of the concept of 'sanitary city' to redefine urban agglomerations as spaces of social equality, economic opportunity, and sustainable co-habitation, the idea of inviting nature into our cities, neighbourhoods, and homes is gaining more and more attention, recognition, and funding.

The 'hybrid landscapes' that are being rediscovered in the West emerged and evolved organically in Africa centuries ago, and have been at the core of many attempts at urban revitalisation and resilience building across Africa (including the colonial idea of the garden city and post-colonial modernism). For this reason, I intend to argue that African cities need not renounce their rich heritage of traditional social organisation, architecture, and urbanism, for the concepts of

communal living, green infrastructure, and connectedness with nature have played an integral part in African cities throughout the history of urban dwelling on the continent.

Mamie Albertine Ratsaramiafara: Climate change and cities: Human behavior towards urbanization, vulnerability and resilience concepts in developing countries (Madagascar)

Madagascar is among the most vulnerable countries to climate change, global warming both increased and decreased rainfall, cities are suffering mostly to periodic disasters such as droughts and floods. For this reasons, this study aims to explore the role of human behavior facing emerging concepts in climate crisis such as urbanization vulnerability and resilience. This perspective is structured around three axis: how cities agents behave to climate change negative effects; secondly, why they adopt such behavior models; what lessons could learned to behavioral control over risks and disasters to build resilient and sustainable cities. In fact, qualitative method has been adopted to collect empirical data about cities lives, subsistence and organization facing climate impacts. Study object concern mainly cities agents' behavior patterns and manner of how they act to climate change disasters events. Therefore, qualitative analysis indicates relevant results: facing climate risks human has three options of behavior model: leave, abstain or confront; generally to resist, cities agents opt to confront and adopt strategies based mainly on traditional and local knowledge. However cities behavioral tackle show its limits, their action defines their level of vulnerability and resilience; this indicate that behavior change is still required to reach targets for more resilient and more sustainable cities. Nevertheless, this study point out, that cities are also potentially powerful agents to action and change.

Kayode Michael Samuel and Samuel Ayoola Adejube: Redefining the Resilient Gasping Lagos Megacity: An Eco-musicological Discourse of Selected Works of Lágbájá

Musicological conversations around popular music are transcending the normative formal and structural analyses to include its symbiotic relationship with ecocriticism. Understanding the utilitarian nature of popular music, especially deployment of song and drum texts to engage ecocritical issues is a sine qua non for interventions in human search for a socio-ecological transition to less destructive forms of living. Guided by the eco-musicological theory, this paper adopts the interpretive approach to investigate ecocritical-related issues in the music of Lágbájá (Nigeria's famous masked musician). It examines how the artiste explores narratives bordering on urban/rural differentials and environmental pollution in the context of Lagos, a cosmopolitan city. Two music tracks: Eko mega city and Dis no be your village with texts focusing on human activities and environmental degradation nexus were purposively selected for analysis. Using ordinary objects and coded languages, Lágbájá describes the activities and resilience of Lagos residents as well as their everyday experiences. He contends that despite its aura of transformation, the city remains vulnerable, being characterised by inequalities, unhygienic attitudes, and other social deviant behaviours. By stroking the idea that informs the polyrhythmic structures in Lágbájá's diverse musical instruments, the paper articulates the nuanced roles of various stakeholders and human-environment interactions in the negotiation and (re)appropriation of a desirable megacity status. By describing how Lágbájá uses his art to reconstruct and promote environmental theme in the United Nations' Sustainable Development Goals, a major hiatus in literature on the tripartite cord of sound, human and environment is connected.

Serigne Momar Sarr: Urban Modernization: When Dakar Makes its Floods

As soon as he came to power in 2012, the President of the Republic of Senegal, Macky Sall, advocated the "territorialisation" of public policies. However, it is clear that Dakar, the capital, has been the main focus of public programs since independence in 1960. Although it is home to 25%

of the total population and concentrates no less than 80% of the country's economic activities, it represents only 0.28% of the national territory. In addition, Dakar is built on a peninsula with a 90 km long coastline, which makes the soil impermeable and creates water basins in several places within its area. Flooding is a structural problem, exacerbated since 2005. A Ministry of Floods has been created for this purpose, as well as a Ministry of Restructuring and Development of Flood Zones, which has been succeeded by a Ministry of Water with the difficulties of implementing public action known in Africa. The State has put in place a Plan décennal de lutte contre les Inondations (PDLI) (2012-2022) with a budget of CFAF 766.988 billion, including the Projet de Gestion des Eaux pluviales et d'adaptation au changement climatique (PROGEP) launched in 2012. Noting the persistence of urban floods, a parliamentary information mission on floods delivered, on 28 June 2021, conclusions that reflect the laxity in urban management and planning. Indeed, after having travelled through the 14 regions of Senegal, conducted a documentary research and interviewed 7 ministers and 5 general directors, the fifteen deputies of the mission noted, among other things, a rate of 38% implementation one year before the end of the program. The Plan Sénégal Emergent (PSE), the reference for Senegal's development policies since 2014, focuses on infrastructure. Dakar lives at the pace of development problems despite the bet to extend this small city towards Diamniadio, a suburb about thirty kilometers away, by the Diamniadio Lake City project aimed at decongesting the capital, in addition to establishing a hub and a Zone Economique spécialisée (ZES) is not yet bearing fruit. Despite the increasingly confirmed hypothesis of the return of rains in sub-Saharan Africa, flooding in Dakar seems to be the result of the construction of interchanges and overpasses, the implementation of a Train express regional (TER) and a Bus Rapid Transit (BRT). By relativizing the weight of the effects induced by climate change, the objective of this paper is twofold in that it seeks first to document the development projects in the transport sector that disrupt the drainage and evacuation of water during the winter period and in a context of floods prior to these "new" structuring projects, and secondly, to analyze the lack of planning or anticipation in terms of institutional responses to past and current works for obvious ambitions to build a sustainable and climate-smart city. This perspective renews the approaches to (urban) vulnerabilities and calls for a prospective approach to territories in order to prepare for the construction of the sustainable development goals (SDG), particularly in African cities where urban impoverishment is glaring and exponential. Finally, it maintains the hypothesis of states under construction almost everywhere in sub-Saharan Africa.

Moubassire Sigué: Sustainable Cities and Communities through the Prism of an Internalization of Gendered Social Logics

Construction of the sustainable city as an emanation of sustainable development is based on the triple economic, social and environmental pillars. The problems posed by the sanitation of cities can be approached according to several dimensions. On the one hand, political anthropology, which is interested in municipal public sanitation policies and the relationship of municipal technical waste disposal services with citizens. On the other hand, social anthropology which relates to the study of domestic sanitation and cleanliness practices, neighborhood conflicts caused by popular modes of wastewater disposal and the resulting nuisances. While SDGs no. 11 are devoted to sustainable cities and communities, the socio-cultural logics combined with the feminine in the cities of the South augur compromising prospects for the production of cities concerned with intergenerational equity. In this perspective, it is important that reflections be carried out in order to determine the contribution of gender to the issue of urban sustainability. What are the antinomic cultural practices to urban sustainability incorporated by women? Why are they more concerned about domestic urban sanitation practices? To what extent does the use of tools, technologies and equipment by women reflect social relations of domination between the sexes? In a hypothetico-deductive anthropological approach, a documentary perspective as

a secondary source based on gray and academic literature will complete the empirical tools resulting from the semi-structured reflective interview and the direct observation to be carried out.

Joram Tarusarira: Centering Sacred Worldviews Against Climate-Induced Rural to Urban Migration

Climate-induced urban migration creates population density in the urban areas against a background of scant resources, resulting in human security risks and climate-induced violent conflicts. My paper seeks to show how, in efforts to deal with Africa's urbanization, development, and climate pressure, we need not only look at what happens in the cities but also where the migrants come from – the rural areas - with a view to explore possibilities of strengthening the resilience in those contexts as a measure to interrupt unwanted migration to urban areas. The rural contexts are replete with indigenous knowledge systems and sacred worldviews through which the communities read and react to reality. However, most scholars and policymakers in climate security and sustainable development sidestep indigenous knowledge systems and sacred worldviews favouring techno-scientific explanations, solutions and strategies. In some instances, these do not resonate with the local people and hence do not immediately help to mitigate rural to urban migration. I will present some of the results of my Dutch Research Council-funded project titled Invoking the Sacred: Towards Alternative Strategies Against Climate Conflicts, in which I carried out research among indigenous communities in Kenya. I argue that understanding the local rural contexts is fundamental to addressing climate-induced urban migration. It allows investing in local context worldviews, including sacred worldviews, to facilitate mitigation and adaptation measures in the rural areas that can stall movement to the urban areas.

Clayton Vhumbunu: Climate-smart urban agriculture in Windhoek, Namibia

Whilst agriculture continues to contribute almost 5 percent to national Gross Domestic Product (GDP) in Namibia; it is the effects of climate change as manifested in temperature increases, frequent floods, water scarcity, heat waves, et cetera that is increasingly diminishing agricultural production and output. With massive urbanization recorded in recent years, several city residents have resorted to small scale formal and informal urban agriculture in Namibia. Currently, urban and peri-urban agriculture is practised by over 70 percent of residents of Windhoek as a strategy to improve household food security, people's livelihoods and generate income for the largely vulnerable urban residents. Most of these farmers are now utilizing climate-smart agriculture (CSA) to mitigate the impact of climate change. This article investigates the extent to which the adoption of CSA in selected areas of Windhoek is impacting on five variables, namely (a) *productivity of farmers*, (b) *boosting food security*, (c) *resilience or adaptation of urban farmers*, (d) *agricultural income for urban farmers*, and (e) *agricultural sustainability*. The paper makes use of primary data gathered through interviews with urban and peri-urban farmers in Windhoek whilst the CSA concept provides conceptual frames and lenses for analysis. The study findings are critical in empirically understanding the impact of climate change on urban agriculture and identifying areas in need of policy support and interventions to support CSA initiatives and practices in Windhoek and other Namibian cities and towns in order to enhance urban food security and livelihoods of urban residents.

Poster Session: Climate Change Research in Mozambique

Arcelia Elisa Mondlane Antonio: The Implications of Climate Change on Urban Areas in Mozambique

This paper aims to analyze the impacts of climate change on urban areas in Mozambique. To carry out this study a literature review was used, namely scientific articles, monographs and dissertations on climate change and its consequences. Mozambique is located in East Africa and is the fifth most vulnerable country in the world to climate change due to its geographical location, its coastline, the existence of areas with low altitude in relation to sea level. The frequent phenomena in the country are: droughts, cyclones, floods. Aware of the seriousness of these phenomena, the government, through the Ministry of Land and Environment, has taken several actions to mitigate their effects. The occurrence of natural disasters has had a negative impact on the community at various levels, including: economic, agricultural, infrastructural and human. Mozambique has registered in recent years floods in urban areas, remembering that urbanization occurs spontaneously and without modernization.

Sonia Cintura: Climate Change and Impact on Tropical Diseases. A Look at Urban Malaria Transmission in Mozambique

In recent years, climate change is considered one of the greatest threats to public health. Recent research indicates that tropical diseases are being impacted by climate change. In Mozambique, malaria endemicity is variable and has been influenced by climate change due to its geographical location, which is vulnerable to extreme events such as heavy rains, severe droughts, tropical cyclones and depressions.
Using literature research, the paper sought to discuss the effects of climate change on malaria transmission in urban areas in Mozambique. The results point to rural-urban migration as a result of the decrease in cultivated areas in rural areas, which dictates population agglomeration, poor sanitation that provides the development of vectors in accumulated water, the interface between deforestation and urbanization leading to heat island, which influence the success of parasite maturation in the mosquito, are factors that contribute to malaria transmission.
The work allowed us to conclude that urban areas tend to experience socio-environmental vulnerability, creating impacts on malaria transmission, thus embodying what can be called urban malaria.

Berta Joaquina Macamo: Climate Change Impact Mitigation Measures on Xai-Xai City: Women and the Use of Solar Cookers in Mussel Processing on Chongoene Beach

The city of Xai-Xai, capital of Gaza Province is a very hilly urban area, with high and low areas and prone to flooding. Whenever it rains with some intensity, landslides are observed, causing soil erosion, to the alarm of the residents. The departure of the population from the lowlands, vulnerable to floods, to the highlands, with dune relief and poorly consolidated sandy soils also contributes to erosion, by removing vegetation for disorderly construction and precarious materials. A similar phenomenon occurs in the dunes of the Chongoene Beach, 17 km from the city, where the removal of firewood for mussel processing causes landslides, weakening the role of the dunes, considered as shock absorbers of the destructive power of the storms, and as buffer areas for the protection of the constructions in the coastal cities. Thus, this paper aims to analyze the benefits of replacing firewood by solar stoves in mussel processing in Chongoene Beach for reducing the risk of soil erosion in the Xai-Xai Town. From interviewing and testing the use of some solar stoves in Nguzene, in the same district, some positive interim results have been

obtained, which show significant savings in household income in this community, through savings in biomass energy, processing time and amount of food cooked. The acceptance of the use of solar stoves, by the women involved in mussel processing, will be determinant for the development of environmental policies aimed at mitigating the impact of climate change on the city of Xai-Xai, making it resilient.

Rachid Madingue: Vulnerability of Human Settlements to Climate Change and Strategies of Adaption in Maputo

Human settlements are cities, adequate housing, basic service improvement, inclusive and sustainable urbanization, cultural and natural heritage, public spaces, planning, resilience, urban, peri-urban and rural connections, waste management and disaster risk management. On the African continent, rapid urban growth and the peripheries of cities continue to be compounded by migration of peasant households to cities. As a result, about 80% of the populations in Mozambican cities live in informal settlements. Informal settlements are largely observed in the cities of Maputo, Beira, and Nampula. In these cities, informal settlement formation is increasing due to natural population growth exceeding urban infrastructure growth, rural exodus, clandestine migration, and armed conflict. In this perspective, based on a mixed approach supported by bibliographic and documental techniques, semi-structured interviews and questionnaire surveys, the article states that 70% of Maputo's neighborhoods are vulnerable to climate change due to their informal origin which does not obey any population and land use planning policy. Faced with these consequences of climate change, the population creates barriers using concrete, stones and bags containing sand and adopts the construction of resilient housing. In turn, the government has implemented different instruments and programs with initiatives for land-use planning, resettlement, prevention and mitigation of climate events.

Remigio Carlos Murela Nloco: Climate Change Resilience: Religious Contributions

Africa is a bastion of religion, the growth of religious movements is at the speed of light, and those who participate there have the figure of the priest (spiritual leader) as the one who can and must impose himself in their lives. The great construction of mega-churches all over Africa is a result of the religious avalanche, especially the Christian and Islamic movements that move masses of people everywhere. This group of leaders must be called upon to participate in building a resilient Africa that adapts to the climate change it is experiencing, so that in their liturgies they carry the message about resilience and natural events. You cannot ignore this group that has a direct impact on the decision making of the members and followers of their religion, and think that there can be victory and significant change in the African consciousness in building a resilient Africa. A partnership should be established and they should be part of the solution to the problems that Africa is facing and together with local governments design strategies to combat these factors that undermine Africa's economy, development and social good. Religion should be called upon to contribute to Africa's development because through the awareness of its followers they can bring about changes that create visible and worthwhile impacts for everyone. Every religion has social obligations and one of them is to ensure social balance, hence, it should be called upon to assume its role in society as a mobilizing agent for a resilient Africa.

Salomao Manuel Nicasse: Climate Change: Dynamics of Flood Response in Mozambique

This research deals with experiences responses to floods. Therefore, the analysis starts from the concrete experiences of residents interpreted from categories such as risk, vulnerability and adaptation, which help to place these experiences in the context of urbanization considered socioeconomic (Acserald, 2006; Valencio et al., 2004; Machili, 2020; Lima et al., 2011 and Tilio, 2010). On the other hand, there are authors such as (UNDP, 2011-2013; Andersen, 2009;

Hoffmann 2012; Nordgren, 2011; Aparício, 2006; Gonzáles, 2012, Aparício, 2012, Killeen, 2009; Douglas et al. 2008) who look at the impacts of climate change on communities and adaptability to this phenomenon. Following this perspective, Lazrus (2012) argues that the effects and responses to climate change are gaining strength, as the body of research that addresses them see other overviews about them. However, examples from different regions illustrate some of the challenges faced by island communities around the world, and selected research demonstrates the different approaches that social scientists, especially anthropologists, are taking to study them, and their role is to insert peripheral voices. within these processes that occur in the city.

Evaristo Daimone Saene, Climate Change in Mozambique

According to Ribeiro (2018) the urbanization process intensified with the industrial revolution, especially in countries now called developed. The industrial revolution allowed the accumulation of capital which in turn favored the transformation of various cities in terms of size, structure, population growth, among other characteristics. In today's underdeveloped countries, the urbanization process is still in progress, and in many of them without planning for basic infrastructure to meet the needs of the populations. The African continent is the least urbanized with most of the population concentrated in rural areas. In Mozambique the urbanization process is ongoing and according to data from the IV General Census of Population and Housing conducted in 2017, 33% of the Mozambican population resides in the urban area and 66% in the rural area (INE, 2017).

According to the same sources, in Africa, the effects of climate change are visible in various sectors, including in agriculture, mining, energy, tourism and wildlife, manufacturing, among others. The impacts on the economy and society are numerous and evident in most parts of the continent through increased natural disasters, including extreme droughts and floods resulting in food insecurity, increased climate-related internal migration, extreme temperatures, and poor labor productivity, coming mainly from heat stress during the hottest in some parts of the continent.