



Accra Learning Lab Report



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MENSVIC HOTEL, GHANA

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Executive Summary

The Accra Learning Lab, held on the 24th of September 2024, brought together a diverse group of city actors, researchers, community leaders, and stakeholders under the CASCADE project. The Learning Lab aimed to explore and address the cascading risks of climate change and urban health challenges in Accra. The event featured interactive sessions, including vulnerability mapping, group discussions, and presentations from key institutions such as the National Disaster Management Organization (NADMO) and the Ministry of Food and Agriculture (MoFA).

The Learning Lab focused on critical topics including:

- **Climate-induced food security risks:** MoFA emphasized the threats to urban nutrition and food security in Accra due to rising temperatures, unpredictable rainfall patterns, and increased pest and disease outbreaks. These factors disrupt both internal food production and external supplies, leading to higher food prices and reduced access to nutritious food for Accra's residents.
- **Disaster risk management and health:** NADMO highlighted the role of disaster preparedness and coordination in mitigating the impacts of climate hazards such as floods and coastal erosion. The presentation discussed the need for stronger urban planning, climate adaptation strategies, and cross-institutional collaboration.
- **Vulnerability mapping exercise:** Participants conducted a vulnerability mapping exercise, identifying key areas in Accra prone to climate and health risks such as flooding, food insecurity, and poor waste management. This activity fostered collaboration across sectors and highlighted the need for targeted interventions.
- **Exploring Cascading Climate Risks:** A role-play simulation allowed participants to engage in a scenario-based exercise addressing how multiple stakeholders—including government agencies, healthcare providers, and community leaders—might respond to a severe flood event in Accra. The session underscored the interconnectedness of climate events and urban health challenges.

The workshop concluded with a reflection session where participants shared their experiences, discussed potential responses, and committed to ongoing collaboration. Key priority areas for future action were identified, including water security, urban governance, food security, and health infrastructure. The event successfully fostered an environment of knowledge-sharing and co-creation, emphasising building resilience to climate-health risks in Accra.

Context and Background

The **CASCADE project**, which stands for *Cascading Climate and Health Risks in Cities*, is a transdisciplinary research programme that aims to address and enhance understanding of the complex interactions between climate change, health risks, and urbanisation in African cities. The project focuses on five key cities: Accra, Harare, Cape Town, Kampala, and Johannesburg. By employing an integrated approach to climate and health risks, CASCADE aims to enhance urban resilience, foster capacity building, and generate actionable insights to improve the lives of city dwellers across African cities.

The intersections between climate hazards—such as extreme weather events, rising temperatures, and changing rainfall patterns—and urban health challenges present unique risks to cities like Accra. Rapid urbanization in Accra has led to increased pressure on infrastructure, water resources, sanitation, and food systems, all of which are further stressed by the impacts of climate change. These risks include more frequent flooding, coastal erosion, and heat waves, which exacerbate public health challenges such as the spread of waterborne diseases, malnutrition, and respiratory issues.

The **Accra Learning Lab**, held on 24th September 2024, was organized as part of the CASCADE project's ongoing efforts to engage stakeholders and develop collaborative solutions to these challenges. Learning Labs is a key engagement tool within CASCADE, designed to foster knowledge co-production between researchers, city actors, community leaders, and practitioners. The Accra Learning Lab aimed to identify the key issues facing the city and explore how climate-induced risks intersect with public health outcomes.

Key participants for the Accra Learning Lab included individuals from the **National Disaster Management Organization (NADMO)**, the **Ministry of Food and Agriculture (MoFA)**, academic institutions such as the **University of Ghana**, and individuals from CASCADE's partner institutions. These participants provided critical insights into how climate change is impacting food security, disaster preparedness, and public health systems in Accra. The learning lab was structured to encourage open dialogue, collaborative problem-solving, and the development of priority action areas for possible exploration through CASCADE's research.

In addition to fostering a deeper understanding of Accra's unique issues, the Learning Lab was an opportunity for participants to engage in scenario-based exercises, such as a role-play simulation and a vulnerability mapping exercise. These activities helped contextualize the challenges posed by climate change and its cascading effects on health, while also encouraging participants to think creatively about interventions that could build urban resilience.

The Learning Lab's objectives were:

- To **introduce** participants to the CASCADE project and its goals.
- To **build a transdisciplinary network** of stakeholders focused on addressing climate-health challenges in Accra.
- To **identify and prioritize critical issues** related to climate and health risks in the city.
- To **co-create knowledge and solutions** for mitigating the impacts of climate hazards on urban health systems.

This event was part of CASCADE's broader effort to create a platform for sustained learning, dialogue, and action across African cities. The insights and priorities emerging from the Accra Learning Lab aim to inform ongoing research within the project and the development of policies and interventions to address climate-health risks facing the city.

Learning Lab Preparation and Process

The Accra Learning Lab was designed as a collaborative and participatory event, bringing together diverse individuals from different sectors, including city actors, researchers, community leaders, government representatives, and practitioners. The aim was to create a space for open dialogue, knowledge exchange, and co-creation of solutions to address the complex intersection of climate change and health risks in Accra.

Planning and Coordination

The planning for the Accra Learning Lab was a multi-step process that involved coordination between the University of Ghana, CASCADE core team members, and key local partners such as NADMO and MoFA. Early in the planning phase, a core team was established to develop the programme and ensure that all logistical needs were met. This team worked closely with facilitators, speakers, and participants to design an interactive and meaningful experience.

Several virtual meetings were held in the lead-up to the event to align the objectives, structure, and expected outcomes of the Learning Lab. Participants received an information pack ahead of the event, which included the agenda, background materials on the CASCADE project, and key points of focus for the workshop.

Programme Design

The programme was structured to ensure a balance between expert presentations, interactive group activities, and reflective discussions. It was designed to be inclusive and participatory, encouraging equal contributions from all attendees. The activities were intended to foster collaboration across disciplines and sectors while emphasizing the real-world impacts of climate and health risks.

Key sessions included:

- **Opening remarks and introductions:** Led by Prof. Chris Gordon from the University of Ghana, this session set the tone for the day by welcoming participants and outlining the objectives of the Learning Lab.
- **Overview of the CASCADE project:** This session provided participants with a detailed introduction to CASCADE, its research objectives, and its relevance to Accra's urban climate-health challenges.
- **Role-play simulation:** Participants were divided into groups representing different stakeholders, such as local government, healthcare providers, community leaders, and residents, to engage in a scenario where a severe flood hits Accra. This simulation highlighted the cascading nature of climate risks and their impacts on health systems, infrastructure, and vulnerable communities.
- **Vulnerability mapping exercise:** Participants worked in groups to map areas of Accra that are most vulnerable to climate and health risks. The exercise focused on identifying priority areas for action, including flood-prone regions, food-insecure communities, and areas with inadequate health services.
- **Presentations from key institutions:** Presentations were made by representatives from MoFA and NADMO, who provided expert insights into how climate change is impacting food security and disaster preparedness in Accra.

Participant Engagement

Participants included a range of stakeholders, from local government officials to academic researchers, early career researchers (CASCADE fellows), and representatives from civil society organizations. The diversity of the participants ensured that the discussions were broad, drawing on different perspectives and expertise. The lively and interactive format of the Learning Lab allowed participants to contribute actively to the discussions, share their experiences, and collaborate on identifying solutions.

Each session was designed to encourage participation, with ample opportunities for group discussions, feedback, and reflection. The vulnerability mapping exercise, in particular, allowed participants to visually represent their concerns and ideas, creating a collaborative environment for problem-solving.

The facilitators played a crucial role in ensuring that the Learning Lab was reflexive and flexible, allowing for spontaneous discussions and deeper exploration of the issues.

Outcomes of the Learning Lab Process

By the end of the Learning Lab, participants had successfully identified some critical climate-health issues affecting Accra, including:

- Flooding and poor waste management systems
- Food insecurity exacerbated by climate change
- Inadequate health services in vulnerable communities
- The need for greater coordination between government agencies, communities, and NGOs in addressing these risks

Participants also emphasized the importance of creating more integrated urban planning strategies, adopting climate-smart agricultural practices, and improving health infrastructure to better manage the cascading impacts of climate risks. The insights and priorities generated during the Learning Lab will feed into the broader CASCADE project, guiding future research and informing the development of practical interventions to enhance urban resilience in Accra.



Plate 1: Stakeholders seated during meeting



Plate 2: A participant sharing insights on climate-health risks

Session Details

Opening and Welcome



Plate 3: Prof Gordon welcoming participants

The Accra Learning Lab commenced with an official opening and welcome led by **Prof. Chris Gordon**, representing the host institution, the **University of Ghana**. Prof. Gordon warmly welcomed all participants, emphasizing the importance of collaborative efforts in addressing the pressing climate and health challenges facing Accra and other African cities.

In his opening remarks, Prof. Gordon outlined the goals of the Learning Lab, which included:

- Fostering collaboration between city actors, researchers, and community members.
- Promoting knowledge exchange and co-production of responses to urban climate-health risks.
- Building a deeper understanding of the intersection between climate extremes and public health concerns in Accra.

Prof. Gordon stressed that climate change is no longer a distant threat but a present reality for the people of Accra, with tangible impacts on food security, water resources, and public health. He highlighted how urbanization has compounded these challenges, necessitating a more integrated and systemic approach to governance, urban planning, and health interventions.

The opening session set the tone for the day, emphasizing the need for transdisciplinary collaboration, evidence-based decision-making, and proactive planning to mitigate the cascading effects of climate change on health. Prof. Gordon encouraged participants to actively engage in the discussions, drawing on their unique experiences and expertise to contribute to the development of actionable solutions.

Introduction of Participants

Eddie Jjemba facilitated an introductory exercise to promote participant engagement and interaction. The exercise aimed to familiarize participants with one another and create a collaborative atmosphere. The participants were paired, and each participant was given a card and required to answer a series of questions such as, "What is your name?," and "What is your background?" "Where would you love to travel to?" and "What do you hope to achieve from this meeting?" Each participant shared their responses with their partner, who, in turn, presented their partner's answers to the larger group. This approach allowed each participant to practice active listening and enhanced mutual understanding in a fun, yet productive way.



Plate 4: Pairs doing introductions



Plate 5: Pairs doing introductions



Plate 6: Pairs doing introductions

The activity also served to reinforce the workshop's theme by encouraging participants to reflect on their professional experiences and expectations related to climate and health risks. The exercise not only facilitated team bonding but also set the stage for deeper discussions throughout the workshop. This engaging simulation helped create an open environment, enabling participants to share ideas freely and establish connections that are essential for the success of transdisciplinary projects like CASCADE.



Plate 7: Tanya and Millie standing by the posted cards by the participants

The participants came from various sectors, including:

- **Government agencies** such as the **National Disaster Management Organization (NADMO)** and the **Ministry of Food and Agriculture (MoFA)**.
- **Academia**, with representatives from the **University of Ghana** and other research institutions within the CASCADE consortium.
- **Local government authorities**, involved in urban planning, public health, and climate adaptation strategies.
- **Non-Governmental Organizations (NGOs)** and civil society organizations focused on disaster preparedness, climate change advocacy, and public health.
- **Community leaders and representatives**, who provided grassroots perspectives on the climate and health challenges faced by local communities in Accra.

The purpose of this session was to ensure that all participants gained an understanding of the range of expertise in the room and the importance of cross-sector collaboration in addressing the complex and interconnected risks posed by climate change and urban health challenges. This diverse group would be essential for generating holistic responses throughout the learning lab.

Participants were also encouraged to share their expectations for the day. Common themes emerged, included:

- **Knowledge exchange:** Many participants expressed interest in learning from others' experiences and gaining insights into best practices for mitigating climate risks in urban settings.
- **Collaboration opportunities:** Several participants emphasized the need for enhanced coordination between government agencies, local communities, and the private sector to effectively manage climate-health risks.

- **Actionable outcomes:** Participants hoped the Learning Lab would result in tangible next steps for addressing the most pressing climate and health issues in Accra, particularly those related to food security, flooding, and public health infrastructure.

Overview of the CASCADE Project

The next session of the Learning Lab provided participants with an overview of the **CASCADE Project**, led by **Romyne Karan** and supported by a video presentation from **Chris Jack**. This session was designed to ensure that all participants had a clear understanding of the project's goals, research focus, and relevance to addressing climate-health risks in Accra and other African cities.

What is CASCADE?

The **CASCADE Project** (*Cascading Climate and Health Risks in Cities*) is a transdisciplinary initiative aimed at exploring the complex relationships between climate hazards and urban health challenges across five African cities: Accra, Harare, Cape Town, Kampala, and Johannesburg. The project is centered on three overarching research questions:

1. **Urban climate-health risk pathways:** What are the multiple risk pathways through which climate variability, extremes, and change lead to health risks in African cities? How do these risks cascade across different sectors and communities?
2. **Urban climate-health interventions:** What interventions can be implemented to reduce mortality and morbidity in African cities due to climate-related health risks, and how can these interventions engage communities more effectively?
3. **Urban climate-health governance:** What governance modes and frameworks are required to support the implementation of priority interventions, particularly in light of developmental vulnerabilities and societal inequalities prevalent in African cities?

This research is designed to be both transdisciplinary and participatory, ensuring that the project incorporates diverse perspectives from city actors, researchers, policymakers, and local communities. The goal is to co-produce knowledge to better understand and inform practical, scalable responses to the pressing climate and health challenges facing urban areas.

Relevance to Accra

The overview highlighted how Accra, like many African cities, is grappling with the dual challenges of rapid urbanization and climate change. These challenges intersect in ways that exacerbate public health issues, from increased disease outbreaks due to flooding to heat-related illnesses in densely populated areas. CASCADE seeks to understand these cascading risks and develop interventions that can be applied across different urban contexts.

The presentation explored some of the key issues facing Accra, such as:

- **Flooding:** Frequent floods in Accra lead to water contamination, increased cases of waterborne diseases like cholera, and the destruction of infrastructure.
- **Food Security:** Climate change is affecting both the production and distribution of food, leading to food insecurity and malnutrition.
- **Urban Heat:** Rising temperatures in the city are contributing to heat stress and exacerbating existing health conditions, particularly in vulnerable populations.

Approach and Methodology

The CASCADE Project adopts a **transdisciplinary** approach, integrating climate science, health research, and urban governance. Some methods include:

- **Participatory systems mapping:** Engaging a diverse group of stakeholders to co-produce an understanding of how climate risks cascade across different sectors and communities.

- **Climate science analysis and modelling:** Using high-resolution climate models to project future climate hazards and their potential health impacts.
- **Cross-city learning:** Facilitating the exchange of knowledge and solutions between the five partner cities to address common challenges and develop tailored interventions.
- **Learning labs:** Providing collaborative spaces for stakeholders to co-create, test, and refine solutions that address climate-health risks. These labs foster innovation through real-world experimentation, cross-sector collaboration, capacity building, and iterative learning to enhance urban resilience across the partner cities.

Key Goals of CASCADE in Accra

The CASCADE project's work in Accra focuses on several key objectives:

1. **Building capacity** among local researchers and practitioners to better understand and respond to the city's climate-health risks.
2. **Developing interventions** that are practical, scalable, and sustainable, addressing both immediate risks (e.g., flooding) and long-term health risks (e.g., food insecurity).
3. **Supporting governance frameworks** that enable the effective implementation of climate-health policies, taking into account socio-economic and gender inequalities.

The session concluded with a call to action for participants to actively contribute to the project's goals by sharing their expertise, participating in ongoing efforts, and helping to identify areas where CASCADE's work could have the greatest impact.

Exploring Cascading Climate Risks (Role-Play Simulation)

The fourth session of the Learning Lab focused on **Exploring Cascading Climate Risks** through an interactive **role-play simulation** facilitated by **Eddie**. This session was designed to give participants a deeper understanding of how climate hazards, such as floods and heatwaves can trigger cascading impacts on urban health, infrastructure, and governance. The exercise provided a practical illustration of how different actors in the city might respond to such crises and the challenges they face in doing so.

Role-Play Scenario

Participants were divided into small groups, each representing different stakeholder groups, including:

- **Local government officials**, responsible for urban planning and disaster management.
- **Healthcare providers**, tasked with responding to health emergencies caused by climate events.
- **Community leaders** representing vulnerable populations affected by climate-related disasters.
- **NGOs and civil society organizations** working on disaster relief and climate adaptation.
- **Residents** of Accra, including those from informal settlements most vulnerable to flooding.

The scenario introduced to the groups was a **severe flood event** that had hit Accra, leading to widespread infrastructure damage, water contamination, and an increase in waterborne diseases such as cholera. The simulation required each group to respond to the unfolding situation, focusing on their roles, responsibilities, and the decisions they would make to mitigate the impacts of the disaster.

Group Activities

As the simulation unfolded, each group faced escalating challenges, such as:

- **Healthcare providers** had to manage a surge in patients suffering from cholera and other waterborne diseases, with limited resources and overstretched facilities.
- **Government officials** struggled with coordinating disaster relief efforts while dealing with damaged infrastructure, including roads and bridges that hindered access to affected areas.
- **Community leaders** raised concerns about the lack of early warning systems and inadequate evacuation plans for informal settlements.

- **NGOs** worked to provide clean water and sanitation but faced challenges with supply chain disruptions and resource shortages.
- **Residents** expressed frustration over the lack of support and the slow response from authorities, particularly in the most vulnerable areas.

The groups were tasked with making critical decisions, such as where to allocate resources, how to prioritize health interventions, and how to engage with other stakeholders to coordinate their efforts. The simulation allowed participants to experience firsthand the complexity of managing cascading climate risks, where one event (the flood) triggered a series of secondary impacts (health emergencies, infrastructure collapse, and social unrest).

Debrief and Discussion

Following the role-play, the groups came together for a **debrief session**, where they shared their experiences and the decisions they made during the simulation. The debrief highlighted several key lessons:

- **Interconnectedness of risks:** The simulation underscored how a single climate event, such as a flood, can have wide-ranging impacts on health, infrastructure, and governance. Participants noted that managing these risks requires a coordinated, multi-sectoral approach.
- **Challenges of resource allocation:** Many groups faced difficult decisions about where to allocate limited resources, such as healthcare workers or clean water supplies. This highlighted the need for better preparedness and stronger coordination mechanisms between different actors.
- **Importance of early warning systems:** The lack of effective early warning systems and evacuation plans for vulnerable communities was a recurring theme. Participants agreed that improving these systems should be a priority to reduce the impacts of future disasters.
- **Community engagement:** The role of community leaders in advocating for vulnerable populations was emphasized, with participants recognizing the importance of involving local communities in decision-making processes to ensure that their needs are addressed.
- **Governance and coordination gaps:** The simulation revealed significant governance and coordination challenges, particularly between local government, healthcare providers, and NGOs. Participants agreed that better collaboration and communication between these groups is essential for effective disaster management.

Lessons for Accra

The role-play simulation provided valuable insights into how Accra's city actors might respond to real-life climate-health crises and the challenges they face in doing so. It also emphasized the importance of:

- **Proactive planning and resource allocation** to mitigate the impacts of cascading climate risks.
- **Strengthening governance structures** to ensure effective coordination between different sectors.
- **Engaging vulnerable communities** in planning and decision-making processes to improve resilience.

The session concluded with participants reflecting on how the lessons learned during the simulation could be applied to ongoing efforts in Accra to address climate-health risks, particularly in the context of flooding and public health emergencies.

Disaster, Climate Change, and Health in Accra

Presentation by NADMO: Disaster Risks and Climate Change

The first part of the session was led by **Charlotte Norman**, the Director of Climate Change and Disaster Risk at the **National Disaster Management Organization (NADMO)**. Her presentation focused on the **disaster risks associated with climate change in Accra**, including:

- **Rising temperatures** and **sea-level rise**, have increased the frequency and intensity of natural disasters such as **flooding** and **coastal erosion**.
- The **vulnerabilities of urban infrastructure**, often struggle to withstand the impact of extreme weather events. She emphasized that **informal settlements** and low-income communities are particularly at risk, as they typically lack adequate drainage systems and resilient housing structures.
- **Public health implications** of disasters, especially in flood-prone areas where water contamination leads to outbreaks of diseases like **cholera** and **malaria**. The presentation also touched on the challenges of **vector-borne diseases** exacerbated by changing climatic conditions.

Ms. Norman discussed the importance of a **systematic approach to adaptation and mitigation**, highlighting the need for stronger **urban planning** and **disaster preparedness** measures. She emphasized that while many policies exist to address climate risks, there are still gaps in implementation at the **local government level**.

Key Points Raised by NADMO:

- The need for **better coordination** between different institutions, such as NADMO, the **Meteorological Department**, and **local health services** to manage climate-related health risks effectively.
- The role of **community education and sensitization** in preparing for and responding to disasters. NADMO has initiated programs aimed at educating local communities on disaster preparedness, but more needs to be done to improve early warning systems and ensure that **vulnerable populations** are protected.
- Ms. Norman concluded with a call for **greater empathy** in responding to climate change, stressing the need for **inclusive adaptation strategies** that cater to both wealthy and low-income communities in Accra.

Presentation by MoFA: Climate Change, Nutrition, and Food Security

The second part of the session featured a presentation by **Dr. Solomon Gyan Ansah** from the **Ministry of Food and Agriculture (MoFA)**, who discussed the **impact of climate change on nutrition and food security** in Accra and the surrounding regions. Dr. Ansah highlighted several key risks:

- **Erratic rainfall patterns** and **increased temperatures** are leading to **reduced crop yields**, which affects food availability and drives up food prices in both urban and rural areas.
- The increased incidence of **pests** and **crop diseases** due to changing climatic conditions is further straining the agricultural sector. Dr. Ansah emphasized the need for **early warning systems** to help farmers prepare for climate-related agricultural risks.
- The **contamination of water sources**, particularly during flooding events, affects both irrigation and drinking water supplies. This contamination leads to food safety concerns and exacerbates the risk of malnutrition.

Dr. Ansah also discussed possible solutions to improve the resilience of the agricultural sector, including the promotion of **climate-smart agricultural practices** such as:

- The use of **climate-resilient seeds** that are better suited to withstand extreme weather conditions.
- Strengthening **urban planning** to protect agricultural land from urban encroachment, is a growing problem in the Greater Accra region.
- Encouraging the adoption of **sustainable agricultural practices** among farmers, particularly those involved in **urban farming**, which is critical for food security in densely populated areas.

Questions and Responses

During the Learning Lab, a range of questions were raised in relation to climate change, disaster risk management, urban planning, and health impacts. Below is a structured overview of the key questions asked during the presentations by NADMO and MoFA, along with the responses provided.

1. What is being done to address the encroachment of agricultural lands by estate developers?

- **Question from Prof. Benedicta:** Estate developers are encroaching on agricultural areas, especially in regions like Ashaiman. What is being done to protect these lands, and what role does agricultural planning play in promoting **urban agriculture**?
- **Response (MoFA):** While this is recognized as a significant issue, the problem often falls **beyond the scope** of agricultural institutions, as real estate development is heavily driven by private sector interests. However, MoFA continues to advocate for better **urban planning and policy enforcement** to protect agricultural land from being lost to development.

2. How does climate change cause flooding, and what is the role of urban planning in mitigating these risks?

- **Question from Prof. Gordon:** Climate change is causing increasingly severe flooding in Accra, which affects both **infrastructure** and **public health**. What role does urban planning play in mitigating these risks, and how can we ensure a better response to flooding events?
- **Response (NADMO):** Accra is highly vulnerable to climate change impacts such as **sea-level rise** and **rising temperatures**, which contribute to recurrent flooding. **Flood control** and **climate adaptation strategies** are being developed in collaboration with multiple institutions, including the **Meteorological Service, Fire Service, and Hydro Department**. However, much of the challenge lies in implementing these strategies effectively across all levels of governance.

3. What role is NADMO playing in building resilience at the district level, and how can capacity be built in local assemblies?

- **Question from Accra Metropolitan Assembly (AMA):** What is NADMO's role in building the capacity of local organizations and assemblies to ensure resilience at the district level?
- **Response (NADMO):** NADMO has faced difficulties in coordinating efforts at the district level due to limitations in resources and institutional capacity. However, NADMO is working to integrate **Disaster Risk Reduction (DRR) strategies** at local levels, although progress has been slow. There was also mention of the **GALI project**, which supports resilience-building, but as it was funded through a loan, sustainability remains a concern.

4. How do we promote engagement and sensitization among communities, particularly farmers?

- **Question from Gordon K Nikoi:** **Climate-Smart Agriculture (CSA)** is critical for protecting farmers, but there seems to be a disconnect between early warnings provided to farmers and their response. What can be done to encourage farmers to take climate information seriously and adopt **CSA practices**?
- **Response (MoFA):** While **early warning systems** are in place to inform farmers about potential climate impacts, there is often resistance to change. Farmers are hesitant to adopt new methods or practices, leading to vulnerability. The solution lies in **engagement and sensitization**, ensuring that farmers understand the importance of early warnings and how CSA can benefit their livelihoods.

5. What measures are being taken to ensure early warning systems and preparedness for climate-induced risks?

- **Question from a local planning officer (Ashaiman):** The **buffer zones** in Ashaiman are being encroached upon, and this is affecting local communities. What is being done to maintain and protect these areas, and how do agricultural planners promote **urban agriculture** in response to this challenge?
- **Response (MoFA):** The **siltation of canals** is of concern, and efforts are being made to ensure that those responsible for maintaining these canals fulfil their responsibilities. In addition, MoFA continues to promote **urban agriculture** as a solution to balance urban development with agricultural needs. However, this requires closer collaboration between urban planners and agricultural departments.

6. What are the health implications of climate change, and what is NADMO doing to address these challenges?

- **Question from a participant:** How does climate change impact **public health** in Accra, and what specific actions are being taken by NADMO to mitigate these risks?
- **Response (NADMO):** Climate change has significant health impacts, including an increase in **waterborne diseases** like cholera, as well as the exacerbation of **heat-related illnesses**. NADMO is working with local health authorities to ensure that disaster preparedness plans account for these risks, but **coordinated action** between health services and disaster management teams remains crucial. Government initiatives are also looking into **disaster insurance** to cover health-related costs during climate-induced disasters.

7. What are the main barriers to implementing effective disaster risk reduction (DRR) strategies?

- **Comment by a participant:** There are many **plans** and **policies** for addressing climate risks, but implementation remains a challenge. What are the main barriers to ensuring that these strategies are effectively applied at the local level?
- **Response (NADMO):** One of the primary barriers is the **lack of institutional capacity** and resources. While the plans exist, there is often a disconnect between **national directives** and their implementation at the **municipal level**. Additionally, many disasters are **man-made** due to poor planning and inadequate enforcement of existing regulations. Strengthening governance structures and ensuring that local governments are equipped to implement DRR strategies is key.

8. What is being done to address the encroachment of agricultural lands by estate developers?

- **Question from Prof. Benedicta:** Estate developers are encroaching on agricultural areas, especially in regions like Ashaiman. What is being done to protect these lands, and what role does agricultural planning play in promoting **urban agriculture**?
- **Response (MoFA):** While this is recognized as a significant issue, the problem often falls **beyond the scope** of agricultural institutions, as real estate development is heavily driven by private sector interests. However, MoFA continues to advocate for better **urban planning and policy enforcement** to protect agricultural land from being lost to development.

9. How does climate change cause flooding, and what is the role of urban planning in mitigating these risks?

- **Question from Prof. Gordon:** Climate change is causing increasingly severe flooding in Accra, which affects both **infrastructure** and **public health**. What role does urban planning play in mitigating these risks, and how can we ensure a better response to flooding events?
- **Response (NADMO):** Accra is highly vulnerable to climate change impacts such as **sea-level rise** and **rising temperatures**, which contribute to recurrent flooding. **Flood control** and **climate adaptation strategies** are being developed in collaboration with multiple institutions, including the **Meteorological Service, Fire Service, and Hydro Department**. However, much of the challenge lies in implementing these strategies effectively across all levels of governance.

10. What role is NADMO playing in building resilience at the district level, and how can capacity be built in local assemblies?

- **Question from AMA (Accra Metropolitan Assembly):** What is NADMO's role in building the capacity of local organizations and assemblies to ensure resilience at the district level?
- **Response (NADMO):** NADMO has faced difficulties in coordinating efforts at the district level due to limitations in resources and institutional capacity. However, NADMO is working to integrate **Disaster Risk Reduction (DRR) strategies** at local levels, although progress has been slow. There was also mention of the **GALI project**, which supports resilience-building, but as it was funded through a loan, sustainability remains a concern.

11. What measures are being taken to ensure early warning systems and preparedness for climate-induced risks?

- **Question from a local planning officer (Ashaiman):** The **buffer zones** in Ashaiman are being encroached upon, and this is affecting local communities. What is being done to maintain and protect these areas, and how do agricultural planners promote **urban agriculture** in response to this challenge?
- **Response (MoFA):** The **siltation of canals** is of concern, and efforts are being made to ensure that those responsible for maintaining these canals fulfil their responsibilities. In addition, MoFA continues to promote **urban agriculture** as a solution to balance urban development with agricultural needs. However, this requires closer collaboration between urban planners and agricultural departments.

12. What are the health implications of climate change, and what is NADMO doing to address these challenges?

- **Question from a participant:** How does climate change impact **public health** in Accra, and what specific actions are being taken by NADMO to mitigate these risks?

Response (NADMO): Climate change has significant health impacts, including an increase in **waterborne diseases** like cholera, as well as the exacerbation of **heat-related illnesses**. NADMO is working with local health authorities to ensure that disaster preparedness plans account for these risks, but **coordinated action** between health services and disaster management teams remains crucial. Government initiatives are also looking into **disaster insurance** to cover health-related costs during climate-induced disasters.

13. What are the main barriers to implementing effective disaster risk reduction (DRR) strategies?

- **Comment by a participant:** There are many **plans** and **policies** for addressing climate risks, but implementation remains a challenge. What are the main barriers to ensuring that these strategies are effectively applied at the local level?
- **Response (NADMO):** One of the primary barriers is the **lack of institutional capacity** and resources. While the plans exist, there is often a disconnect between **national directives** and their implementation at the **municipal level**. Additionally, many disasters are **man-made** due to poor planning and inadequate enforcement of existing regulations. Strengthening governance structures and ensuring that local governments are equipped to implement DRR strategies is key.

14. What is the role of policy in addressing health risks related to climate change?

- **Question from the group:** What role do **health policies** play in addressing the **health risks** associated with climate change, especially in vulnerable areas?
- **Response (NADMO):** Policies related to **disaster preparedness** and health are critical in managing the health impacts of climate change. NADMO works in conjunction with local health services to ensure that disaster risk management is integrated into **health sector planning**. However, a **lack of resources** and **data coordination** remains a challenge, especially at the municipal level.

Vulnerability Mapping Exercise

Following the role-play simulation and with the insights gained from the presentations & Q&A, participants engaged in a hands-on **vulnerability mapping exercise**, led by **Mary** and **Mzime**. This activity was designed to help participants identify and analyze the geographic areas in Accra that are most vulnerable to climate-related health risks. The goal was to understand how different climate hazards, such as flooding, drought, and heat, intersect with urban health challenges, and to highlight the most at-risk populations.

Mapping Climate-Health Risks in Accra

Participants were divided into groups and tasked with mapping out key areas in Accra where climate-induced risks—such as flooding, heat stress, food insecurity, and any other climate-health issue—were most severe.



Plate 8: Participants marking vulnerable areas on the GAMA map

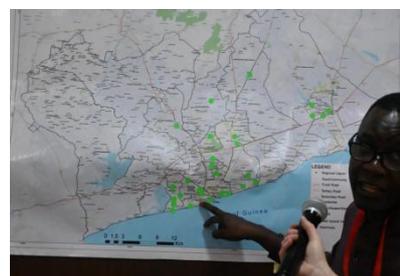


Plate 9: Cluster of vulnerable areas on the GAMA map

Large maps of the Greater Accra Metropolitan Area (GAMA) were placed around the room, and participants used coloured stickers to mark locations they perceived as vulnerable based on their expertise and local knowledge.

The key steps in this exercise included:

1. **Identifying vulnerable areas:** Participants placed stickers on areas that they believed interlinked climate and health challenges were most pronounced. These areas were often associated with informal settlements, flood-prone zones, and regions experiencing food insecurity.
2. **Clustering issues:** After placing the stickers, participants worked in their groups to cluster the issues according to common themes, such as water insecurity, urban flooding, and poor sanitation. This clustering exercise allowed participants to visualize how different risks are geographically concentrated across Accra.
3. **Group analysis and discussion:** Each group then analyzed their chosen clusters, considering factors such as the types of climate hazards affecting each area, the populations most impacted, and the available resources or local capacities to address these challenges.

Key Vulnerabilities Identified

The exercise revealed several critical areas of vulnerability in Accra, including:

- **Flood-prone areas:** Coastal regions and low-lying areas like **Ablekuma West** and **Ashaiman** were identified as highly vulnerable to flooding. These areas are frequently inundated during the rainy season, leading to water contamination, infrastructure damage, and increased cases of cholera and malaria.
- **Informal settlements:** Areas with high concentrations of informal settlements, such as **Nima** and **Old Fadama**, were identified as particularly vulnerable due to inadequate drainage systems, overcrowding, and poor access to healthcare. These settlements are at heightened risk of waterborne diseases and heat-related illnesses.
- **Water insecurity:** Participants noted that certain parts of Accra, particularly the **Ashaiman** municipal area, face severe water scarcity. This scarcity is exacerbated by climate change, leading to competition for water resources and affecting food production, public health, and overall well-being.
- **Food security challenges:** Agricultural areas around the outskirts of Accra, such as **Weija** and **Michel Camp**, are under threat from erratic rainfall patterns and rising temperatures. These areas are critical for food production, and their vulnerability poses significant risks to Accra's food supply.

Group Case Studies

During the vulnerability mapping exercise, each group developed a detailed **case study** focusing on an individual or household residing in the vulnerable areas they identified on the maps. These case studies provided a human perspective on the cascading climate-health risks affecting Accra's most vulnerable populations. Below are the detailed profiles of the individuals and families highlighted by the groups:

Cluster 1: Ablekuma West - Naa Adoley Okine

Naa Adoley Okine, a 24-year-old married woman with two children, was the focus of the first case study. She is a student living in **Ablekuma West**, a flood-prone area in Accra. Her case highlighted several intersecting challenges:

- **Flooding:** Regular flooding during the rainy season leads to water contamination, property damage, and health risks, particularly for her young children.
- **Poor waste management:** Naa lives in a neighbourhood where waste disposal systems are inadequate, contributing to the spread of diseases such as cholera during flood events.
- **Air pollution:** Proximity to informal waste burning sites results in significant air quality issues, increasing respiratory health risks for her family.
- **Coastal erosion:** Living near the coast, Naa's home is also threatened by erosion, which could lead to displacement if left unchecked.

Naa's case illustrated the cascading risks faced by women and young children in vulnerable communities, where a combination of environmental and infrastructural challenges exacerbates their vulnerability to climate change. The NADMO and local government are actively engaged in educating the community and identifying safe havens, but more is needed in terms of infrastructure and long-term solutions.

Cluster 2: Korle-Klottey - The Fisherman's Family

The second case study focused on a **42-year-old fisherman** residing in the Korle-Klottey, a coastal community prone to high sea levels and windstorms. The fisherman supports a large household, including three wives and seven children, and faces several challenges:

- **High sea level rise:** The family's home is frequently threatened by coastal flooding, which affects their livelihood and safety.
- **Windstorms:** Severe weather events damage homes and disrupt fishing activities, leading to economic instability.
- **Access to premix fuel:** Limited access to subsidized fuel makes it difficult for the fisherman to maintain his livelihood, which is crucial for feeding his large family.
- **Waste management crisis:** Like many coastal areas, poor waste disposal contributes to health risks such as diarrhoea, especially among children.
- **Health issues:** The family struggles with diseases linked to poor sanitation and water contamination, such as cholera and diarrhoea.

This case emphasized the vulnerability of coastal communities in Accra and the need for improved waste management and disaster preparedness. It also highlighted the interconnectedness of economic, environmental, and health challenges in these areas.

Cluster 3: Street Hawker - Mr. Nii

Mr. Nii, a **street hawker** in Accra, was the subject of the third case study. He sells sachet water to support his family, but his occupation exposes him to several climate and health risks:

- **Exposure to heat:** As he works long hours under the hot sun, Mr. Nii is at risk of heat stress and dehydration, particularly during the hottest months of the year.
- **Vehicle emissions:** Working in congested areas, he is exposed to air pollution from cars, which increases his risk of respiratory diseases.
- **Accidents:** Moving through traffic, he is at constant risk of road accidents, adding physical danger to his daily struggles.

This case highlighted the daily risks faced by informal workers in Accra, many of whom lack access to health services or protection from climate-induced hazards. Street hawkers like Mr. Nii are particularly vulnerable to climate-related risks because they often work in open, unregulated environments.

Cluster 4: Nima Market - Fatima Seidu

Fatima Seidu, a **28-year-old single mother of four**, lives and works in **Nima Market** as a head porter. She is a JHS graduate and earns about 1000 cedis per month. Her case study shed light on several challenges:

- **Food and water insecurity:** Fatima struggles to provide enough nutritious food and clean water for her children due to rising costs and limited availability in the market.
- **Health access:** While she is eligible for the **National Health Insurance Scheme (NHIS)**, the coverage is often inadequate for addressing the specific needs of her family, particularly when it comes to preventive care.
- **Lack of shelter:** Living in the market, Fatima's family lacks secure housing, leaving them exposed to extreme weather conditions such as heatwaves and rainstorms.
- **Insecurity:** The lack of proper housing also leaves her and her children vulnerable to physical harm, and there is little to no security in their immediate surroundings.

Fatima's case demonstrated the intersection of socio-economic vulnerabilities with climate risks, particularly for women working in informal sectors. The case also highlighted the limitations of public health systems in providing sufficient coverage for marginalized populations.

Cluster 5: Visually Impaired School Dropout - Kojo Mawonyo

Kojo Mawonyo, a **15-year-old visually impaired boy**, lives in an informal settlement in a flood-prone area of Accra. Kojo's family faces significant challenges:

- **Marginalization:** As a visually impaired individual living in an informal settlement, Kojo is often excluded from educational opportunities and health services.
- **Annual flooding:** The settlement is frequently inundated by floods, which displace Kojo's family and expose them to waterborne diseases such as cholera.
- **Poor sanitation:** The lack of proper sanitation and waste disposal systems in the settlement exacerbates health risks, particularly for individuals like Kojo who are already vulnerable due to their disability.

This case highlighted the unique challenges faced by disabled individuals in informal settlements, where climate-induced risks are compounded by social exclusion and inadequate access to essential services.

Cluster 6: Ashaiman Farmer - Kwaku Gyan Ayini Armah

Kwaku Gyan Ayini Armah, a **47-year-old farmer** in Ashaiman, was the focus of the final case study. His livelihood is directly impacted by climate variability and poor access to agricultural resources:

- **Erratic rainfall patterns:** Unpredictable weather conditions lead to low crop yields, threatening his ability to support his family and contribute to the local food supply.
- **Exposure to agrochemicals:** Without access to adequate protective equipment, Kwaku is frequently exposed to harmful chemicals, affecting his health.
- **Inadequate support:** Farmers like Kwaku face delays in receiving necessary inputs such as seeds, tools, and information on climate patterns, which hampers their productivity.

Kwaku's case demonstrated the vulnerabilities of small-scale farmers to climate risks and underscored the need for better access to climate-smart agricultural practices and support systems.

Discussion of Case Studies

The case studies presented by the groups offered valuable insights into how climate change and its cascading risks affect different segments of Accra's population. Each group provided a unique lens on

the vulnerabilities facing individuals, families, and communities. After the presentation of each case, the participants engaged in a **plenary discussion**, which delved deeper into the causes of these vulnerabilities, the limitations of current interventions, and the necessary steps to address these risks.

Key Themes from the Discussions

1. **Interconnectedness of Risks:** Participants noted that the case studies vividly illustrated how climate hazards, such as floods and heatwaves, have far-reaching impacts across various sectors. For example, **flooding** not only causes immediate physical damage to infrastructure but can trigger secondary health impacts such as the spread of waterborne diseases like cholera. The discussion highlighted that:
 - **Floods** lead to the contamination of water sources, exacerbating the risk of diseases, especially in communities with poor waste management systems like those described in **Naa Adoley's** case.
 - **Heat stress** disproportionately affects informal workers, such as **Mr. Nii**, who work in unsheltered environments and lack access to basic health services.
 - These climate risks are compounded by socio-economic factors, such as poverty and inadequate infrastructure, which reduce the capacity of vulnerable groups to cope with climate shocks.
2. **Governance and Policy Gaps:** A recurring theme in the discussion was the role of governance in managing climate risks. Many participants pointed out the **weak enforcement of policies** and **ineffective urban planning**, particularly in the context of informal settlements and flood-prone areas. For instance:
 - In **Kojo Mawonyo's** case, it was emphasized that informal settlements often exist outside the scope of formal urban planning and disaster preparedness. This leads to recurring problems, such as blocked drainage systems and insufficient flood management infrastructure.
 - Participants also raised concerns about the **slow response of government agencies** in dealing with environmental degradation, such as the **encroachment of farmland in Ashaiman**, which is affecting both food production and local livelihoods.
 - The case of **Fatima Seidu**, a head porter, highlighted the **gaps in public health systems**, particularly in providing adequate healthcare for informal workers. Participants discussed the need for expanding the coverage of the **National Health Insurance Scheme (NHIS)** to ensure that marginalized populations receive proper health services during climate-induced health crises.
3. **Inclusion and Representation of Vulnerable Groups:** The discussion emphasized the need to ensure that **vulnerable populations**, such as women, children, and persons with disabilities, are at the forefront of climate adaptation efforts. Many of the case studies highlighted how these groups are disproportionately affected by climate risks. For example:
 - In **Fatima Seidu's** case, participants discussed the **gendered impact** of climate change, noting that women, particularly those working in informal sectors, face unique challenges. These include limited access to healthcare, increased care burdens during health crises, and exposure to extreme weather conditions.
 - The case of **Kojo Mawonyo**, a visually impaired teenager, sparked a broader conversation about the **exclusion of persons with disabilities** from climate adaptation strategies. Participants discussed how the needs of disabled individuals are often overlooked in disaster preparedness plans, leaving them more vulnerable during emergencies such as floods.
 - There was a consensus that **community-based approaches** are crucial for addressing the needs of vulnerable populations. Engaging local communities in planning and decision-making processes can help ensure that interventions are responsive to the specific challenges faced by different groups.
4. **Community Engagement and Local Solutions:** Participants highlighted the importance of **community engagement** in addressing climate-health risks. Many of the case studies emphasized that communities often have local knowledge and resources that can be leveraged to build resilience. For instance:
 - In **Naa Adoley's** case, it was noted that **NADMO's** community education programs play a key role in raising awareness about disaster risks and identifying safe havens during floods. However, participants suggested that more could be done to **empower**

- communities** to take proactive measures, such as organizing local flood response teams and improving waste management systems.
- In **Kwaku Gyan Ayini Armah's** case, participants discussed how **agricultural extension services** could be expanded to support farmers with **climate-smart practices**, such as using hybrid seeds and adopting early-warning systems for rainfall patterns. The group agreed that strengthening local agricultural knowledge is critical for maintaining food security in the face of climate variability.
5. **Health System Preparedness:** The case studies prompted a significant discussion about the **preparedness of Accra's health system** to respond to climate-induced health crises. Many participants noted that the **existing health infrastructure** is insufficient to cope with the surge in diseases that often follow extreme climate events, such as flooding. In particular:
- **Mr. Nii's** case highlighted the **lack of healthcare access** for informal workers who are frequently exposed to both extreme weather conditions and pollution. The group emphasized the need for mobile health units and **targeted healthcare interventions** for these vulnerable groups.
 - Participants also discussed the importance of **preventive healthcare measures**, such as vaccinations and public health campaigns, particularly in flood-prone areas where diseases like cholera and malaria are rampant.
 - **Kojo Mawonyo's** case led to a conversation about the need for better **inclusive health services**, ensuring that healthcare facilities are accessible to people with disabilities, especially during emergencies when they are most vulnerable.

Emerging Priorities from the Discussion

The plenary discussions following the case presentations led to several **key priorities** for action, which were agreed upon by participants:

- **Strengthening early warning systems:** Improving disaster preparedness by providing more timely and accurate weather forecasts, particularly in areas like **Ashaiman** and **Ablekuma West**, where flooding is frequent.
- **Building climate-resilient infrastructure:** Enhancing drainage systems, roads, and housing in vulnerable communities, particularly in informal settlements where residents are most exposed to climate risks.
- **Expanding healthcare access:** Addressing the gaps in healthcare coverage for informal workers, women, and persons with disabilities. This includes expanding the reach of the **NHIS** and integrating **climate adaptation strategies** into public health planning.
- **Community-based solutions:** Encouraging **community-led initiatives**, such as waste management programs, local disaster response teams, and agricultural extension services, to build local resilience to climate risks.

These discussions underscored the need for an integrated approach to climate-health resilience, one that combines **top-down governance reforms** with **bottom-up community engagement**. Participants agreed that future interventions must prioritize inclusivity, ensuring that the most vulnerable populations are not only protected but empowered to be part of the solution.

Summary of Priority Areas

Based on the vulnerability mapping and discussions, the following priority areas emerged:

1. **Water Scarcity and Pollution**
 - **Challenge:** Accra faces significant **water scarcity** and **pollution**, particularly in areas like **Ashaiman** where climate change and urban development are straining water resources. Pollution from waste management issues further contaminates water sources, especially during flooding.
 - **Priority:** Improve **water infrastructure**, enhance **water resource management**, and reduce water pollution through **sustainable waste management practices**.
2. **Urban Flooding and Its Health Impacts**
 - **Challenge:** Frequent flooding in low-lying areas like **Ablekuma West**, **Ashaiman**, and **coastal regions** leads to infrastructure damage, water contamination, and increased health risks (e.g., cholera, malaria).
 - **Priority:** Strengthen **early warning systems** and disaster preparedness, improve **drainage systems**, and implement **climate-resilient urban planning** to reduce the health impacts of flooding.
3. **Food Security and Climate-Related Malnutrition**
 - **Challenge:** **Erratic rainfall patterns** and rising temperatures are impacting **food production** in agricultural areas like **Weija** and **Michel Camp**, leading to food shortages and malnutrition in vulnerable populations.
 - **Priority:** Promote **climate-smart agricultural practices**, support local farmers with **drought-resistant crops**, and ensure **food security** through improved agricultural planning and climate adaptation strategies.
4. **Resilience in Urban Infrastructure**
 - **Challenge:** Informal settlements, such as **Nima** and **Old Fadama**, are highly vulnerable due to inadequate drainage, overcrowding, and poorly constructed housing. These areas face heightened risks from climate impacts such as flooding and heat waves.
 - **Priority:** Develop **climate-resilient infrastructure** in informal settlements, focusing on upgrading drainage systems, roads, and housing to withstand the effects of climate change.
5. **Health Preparedness for Climate-Induced Epidemics**
 - **Challenge:** The health system in Accra is under-prepared to manage the **increased frequency of epidemics** caused by climate change, such as outbreaks of cholera, malaria, and respiratory diseases following floods and heatwaves.
 - **Priority:** Expand **public health services** in vulnerable areas, integrate **climate adaptation strategies** into health planning, and improve **disease surveillance** and **healthcare access** for informal workers, women, and persons with disabilities.
6. **Strengthening Early Warning Systems**
 - **Challenge:** There are gaps in providing **timely and accurate weather forecasts** and early warnings, particularly for flooding in areas like **Ashaiman** and **Ablekuma West**.
 - **Priority:** Improve **disaster preparedness** by enhancing **early warning systems** and ensuring that communities receive adequate advance notice of extreme weather events.
7. **Community-Based Solutions**
 - **Challenge:** Local communities are often most affected by climate risks but have limited involvement in decision-making processes, reducing the effectiveness of disaster response and resilience-building efforts.
 - **Priority:** Support **community-led initiatives**, such as **local waste management programs**, **disaster response teams**, and **agricultural extension services**, to build local resilience and ensure that communities are actively involved in planning for climate adaptation.

Reflections and Commitments

In the final session of the Learning Lab, participants were seated in **roundtable groups** with a **researcher** assigned to each table to facilitate discussions and capture key insights. The purpose of

this session was to gather final reflections, questions, and inputs from the participants—particularly from the municipal assembly officials and other institutional representatives. Each table discussed the climate-health challenges they faced, the interventions they had attempted, and the gaps they identified in terms of knowledge or resources. This exercise encouraged participants to reflect on their experiences and express what additional research or support could help them address the issues more effectively.

Key Insights from the Ashaiman Municipal Officials

At one of the tables, the researcher facilitated a discussion with officials from the **Ashaiman Municipal Assembly**. One of the critical concerns raised by the municipal officials was **waste management**, which continues to be a significant issue despite their best efforts. They explained that they had implemented several strategies in collaboration with local communities to improve waste management practices. These strategies included public education campaigns, provision of waste disposal facilities, and enforcement of local bylaws.

However, despite these initiatives, waste management remains a persistent challenge. The officials reflected on how they consistently find themselves asking, **“Why does this problem keep happening?”** They expressed frustration at the lack of sustained improvement, noting that though they have tried multiple approaches, the situation does not seem to improve in the long term. The municipal officials emphasized that the problem was not a lack of effort, but rather the **complexity of waste management in urban settings** like Ashaiman, where rapid urbanization, population growth, and informal settlements exacerbate the issue. They acknowledged that there are deeper underlying factors that they may not fully understand, which are contributing to the problem. As a result, the Ashaiman Municipal officials made a **plea to researchers and students**: rather than developing independent research projects disconnected from the practical challenges faced by the city, they suggested that **researchers collaborate more closely with municipal assemblies**. The officials explained that municipalities often have a long list of pressing issues that need investigation, ranging from waste management to climate adaptation strategies, and researchers could make a significant impact by focusing their work on these real-world challenges. The officials encouraged research institutions to **work in partnership with the municipal assemblies**, using the municipalities’ knowledge and experience to guide their investigations. This collaboration could lead to research that directly addresses the specific problems faced by local governments, providing actionable insights and practical solutions. The Ashaiman officials hoped that this kind of collaboration could help identify the root causes of the persistent waste management issues and ultimately lead to more effective, sustainable solutions.

Potential Research Questions/Comments from Tables

1. What can be done to include disabled and aged people in urban planning?
2. At what levels can we measure air quality/pollution? In terms of accuracy, what can we do to increase the number of sensors and accurately measure air quality in our communities?
3. How can we expand our coverage for measuring air pollutants, particularly for meteorological data?
4. Do we have the right policies to tackle climate-related health crises in Ghana?
5. How many Ghanaians are aware of the Climate Tax?
6. How can we increase climate-smart solutions for people with disabilities?
7. How can we integrate climate change-related issues into the lifestyles and consciousness of people not only in urban areas but everywhere?
8. Does oil in flood-prone areas find its way into the food chain?
9. Why is CASCADE focusing only on Accra and not other regions?
10. The media should be included as a stakeholder in this project.
11. What are the implications of extreme weather conditions?

Card Session Summary

In the final reflective session of the Learning Lab, participants engaged in a **card-based exercise** aimed at encouraging personal reflections on the day's activities. Each participant selected a card from a set featuring images and descriptions related to **nature, climate change, and resilience**. The purpose of the exercise was to connect the workshop's themes to the participants' personal thoughts and experiences.

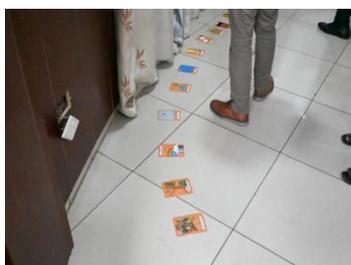


Plate 10: Cards displayed on the floor



Plate 11: Participants choosing their cards



Plate 12: Participants reflecting their thoughts based on the cards selected

Key Themes and Reflections:

1. Connection to Nature and Resilience

- Many participants chose cards that symbolized **resilience in nature**, such as images of thriving ecosystems or strong trees. They linked these images to the **resilience** needed in urban settings to cope with the cascading effects of climate change, especially in vulnerable communities facing frequent floods and heat stress.

2. Personal and Professional Insights

- Several participants reflected on how the images brought to mind the **real-life challenges** they encounter in their work, such as waste management, food insecurity, and public health crises. The cards provided a space for them to connect the **abstract themes of climate change** to the tangible issues they are addressing daily.

3. Commitment to Future Action

- The session also encouraged participants to reflect on how they could apply what they had learned during the workshop. Many emphasized their commitment to **collaborating across sectors** and using the insights from the workshop to guide future interventions, particularly in **community engagement** and **policy implementation**.

4. Diverse Perspectives and Shared Challenges

- The card session underscored the **diversity of perspectives** in the room, with participants from government, academia, and civil society bringing different interpretations to the images. Despite their varied roles, there was a shared recognition of the **urgent need for collective action** in addressing Accra's climate and health risks.

5. Creative and Reflective Closure

- The card exercise provided a **creative, reflective closure** to the workshop. It allowed participants to express their thoughts in a more informal and personal way, offering insights not only into the challenges they face but also into their hopes for **sustainable solutions** and the importance of maintaining the **momentum** created by the Learning Lab.

Evaluation Summary of the Accra Learning Lab

Overall Feedback

Participants in the Accra Learning Lab gave generally positive feedback, with most indicating that the workshop was well-organized, engaging, and informative. The evaluations reflected a strong appreciation for the format, facilitation, and content delivered during the Learning Lab. Below are the key takeaways:

Strengths

- 1. Engagement and Interaction:**
 - Most participants praised the **interactive nature** of the workshop, particularly the **group discussions** and **breakout sessions**. Many noted that these sessions allowed for diverse perspectives and facilitated meaningful exchanges between researchers, local government officials, and community representatives.
 - Participants highlighted the **effective Q&A sessions** and the inclusive facilitation that encouraged all voices to be heard.
- 2. Well-Organized Presentations:**
 - Several participants mentioned that the **presentations** were **clear, well-organized**, and well-supported by visual aids. The structured flow between different sessions was also appreciated, with participants noting the smooth coordination of the workshop.
 - **Visual aids** and **supporting materials** were effective in making complex topics related to climate change and health accessible to all.
- 3. Deeper Understanding of Climate-Health Issues:**
 - Many attendees reported gaining **valuable insights** into the **cascading impacts of climate change** on health systems. In particular, local government officials felt that the workshop helped them understand the **intersection between climate risks and public health** more deeply.
- 4. Diversity and Knowledge Sharing:**
 - The diversity of participants, including local government, NGOs, researchers, and community leaders, was highlighted as a key benefit. Attendees appreciated the opportunity to **learn from different perspectives** and **build networks** with other professionals engaged in climate change and health risk management.
 - Participants from various sectors also emphasized the value of hearing about **climate adaptation strategies** being implemented in different contexts.

Challenges and Areas for Improvement

- 1. Time Constraints:**
 - A common theme in the feedback was that the Learning Lab felt **rushed**, with many participants recommending that future workshops be **extended to two days**. They felt that more time was needed to engage deeply with the topics, especially in the group discussions.
 - Some participants noted that **time management** could be improved, with more time allocated for interactive activities and reflection sessions.
- 2. Need for More Community Involvement:**
 - Some participants, particularly researchers, pointed out that future Learning Labs should include more voices from **affected communities**, particularly those most vulnerable to climate risks. Including community members would provide firsthand insights into the real challenges faced on the ground and ensure that solutions are aligned with their needs.

3. Expanding Collaborative Research:

- Local government officials expressed a desire for **closer collaboration with researchers**, particularly in areas like **waste management** and **urban planning**. They suggested that researchers should focus their efforts on real-world challenges identified by municipal assemblies, rather than independent research projects, to ensure that findings are relevant and actionable.

Suggestions for Future Learning Labs

1. Extend the Workshop Duration:

- Multiple participants recommended that future Learning Labs be **extended to two days** to allow for more in-depth discussions and activities. They felt that this would improve the overall quality of the workshop by giving participants more time to process and engage with the content.

2. Include Community Voices:

- Several attendees suggested that future workshops include more **representatives from affected communities** and marginalized groups. This would ensure that discussions and interventions are grounded in the lived experiences of those most impacted by climate and health risks.

3. Focus on Practical Solutions and Follow-Up Actions:

- There was a call for more focus on **practical, action-oriented outcomes** from the Learning Lab. Participants recommended developing follow-up actions and more collaboration between researchers and local government to ensure that research leads to tangible results on the ground.

Overall, the evaluations from the Accra Learning Lab reflected a positive experience for most participants. The workshop was seen as an effective platform for **knowledge sharing, collaboration, and exploring climate-health challenges**. While the event was well-organized and engaging, future sessions could benefit from **longer durations** and more **community involvement** to ensure that discussions are fully inclusive and actionable.

Next Steps

- Create interactive networks with participants on the three CASCADE themes.
- Explore synergies with other projects such as [HABVIA](#) and [ALBATROSS](#)
- Identify participants/stakeholders who would want further engagement to become a trainer of trainers.

Annexe I: Program Outline

Time	Activity	Facilitator
8:00 a.m. – 10:00 a.m. Opening session		
	Participant registration	Millicent
	Welcome by the Host Institution PI	Chris G
	Introduction of Participants	Eddie
	Overview of the CASCADE Project	Romyne and Chris J
	Delving into CASCADING RISKS 1. Role-Play Simulation 2. Debrief and Discussion 3. Science Fair: an interactive feedback session	Eddie
10:00 a.m. – 10:40 a.m. Setting the scene		
	Exploring disaster, climate change, and health risks in Accra	NADMO
	Climate change and nutrition in Accra	MOFA
	Questions and Clarifications	Blessing
10:40 a.m.	Group Photo Cocoa/Tea/Coffee Break First MPhil and PhD Poster explorations	
10:40 a.m. – 1:00 p.m. Vulnerability Mapping Group Exercise		
	1. Mapping Vulnerabilities 2. Interactive Gallery Walk 3. Presentation of vulnerability maps 4. Feedback and decisions on key issues	Mary & Mzime
1:00 p.m.	Lunch Second MPhil and PhD Poster explorations	
2:15 p.m. – 3:45 p.m. Working Together		
	1. Interactive exercise: exploring working together 2. Way forward? 3. Commitments, 4. Asks and Offers	Benedicta
	Reflections	Eddie/Mary/Millicent
	Closing	Chris G
4:00 pm	Airport Drop off	Mensvic