

FOOD ENVIRONMENTS IN TRANSITIONING ECONOMIES (FETE)



WP0 DELIVERABLES

Problem Identification and Shared Understanding of Challenges and Opportunities

FETE PROJECT

December, 2023

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List of Acronyms and Abbreviations

Acronyms	Meaning
AFASA	African Farmers Association of South Africa
ARC	Agricultural Research Council
COSTECH	Tanzania Commission for Science and Technology
COUNSENUTH	Center for Counseling, Nutrition and Health Care
CSIR	Council for Scientific and Industrial Research
EPA	Environmental Protection Agency
FAMA	Federal Agricultural Marketing Authority
FAO	Food and Agriculture Organization
FDA	Food and Drugs Authority
FOMCA	Federation of Malaysian Consumers Associations
GAIN	Global Alliance for Improve Nutrition
GAWU	Ghana Agricultural Workers Union
GNCCI	Ghana National Chamber of Commerce and Industry
GOAN	Ghana Organic Agriculture Network
GPHA	Ghana Public Health Association
GSS	Ghana Statistical Service
HSRC	Human Science Research Council
IITA	International Institute of Tropical Agriculture
ILRI	International Livestock Research institute
IMF	International Monetary Fund
LMICs	Lower and Middle-Income Countries
MOFA	Ministry of Food and Agriculture
MOH	Ministry of Health
NAMAC	National Agricultural Marketing Council
NDPC	National Development Planning Commission
PANITA	Partnership for Nutrition Tanzania
SAGCOT	Southern Agricultural Growth Corridor of Tanzania
SAT	Sustainable Agriculture Tanzania
SDGs	Sustainable Development Goals
SHEFS	Sustainable Healthy Food Systems
TAFFED	Tanzania Food for Education
TAHA	Tanzania Horticultural Association
TANGO	Tanzania Non-Governmental Organization
UNDP	United Nations Development Programme
UNICEF	United Nations International Children's Emergency Fund
WFP	World Food Programme

1. INTRODUCTION

1.1 Project Background

Food environments, and more broadly the food systems and supply chains with which they are associated, play important roles in shaping diets (Reyes et. al., 2021). Globalisation and development have transformed diets and food value chains to become increasingly characterised by the domination of nutrient-poor and highly processed foods (Clapp, 2021). As a result, lower and middle-income countries (LMICs) face an unprecedented malnutrition burden that includes all sub-forms of undernutrition: wasting, stunting, underweight, and deficiencies in vitamins and minerals, as well as increasing overweight, obesity and diet-related non-communicable diseases (NCDs). The increasing level of malnutrition threatens the achievement of Sustainable Development Goal (SDG) 2 (Zero hunger), SDG 3 (Good health and well-being), SDG 4 (Inclusive and equitable quality education for all), SDG 10 (Reduced inequalities), SDG 12 (Sustainable consumption and production) and SDG 17 (Strengthen implementation and revitalise the global partnerships) (United Nations, 2015).

The overarching aim of the FETE project is to co-develop solutions to shape food environments in transitioning economies to drive food consumption for better nutrition and health outcomes, targeting populations in poor urban communities. Specifically, the purpose of the project is to assess existing policies, food production, consumption practices and behaviours to facilitate the transition to sustainable and healthy diets. The project has seven work packages (WP0-WP6) to deliver outputs in the partner countries (Ghana, Tanzania, Malaysia and South Africa).

1.2 Purpose of the Report

Work Package Zero (WP0) aims at identifying problems and creating a shared understanding of challenges and opportunities among partner countries. The aim is to provide better insights and a common understanding of the stakeholders through engagement to co-identify priorities and the research problem, objectives, challenges and opportunities, and the expected roles of each stakeholder in the project. WP0 also provides an opportunity for the consortium members to understand the commonalities and differences in each country's context, the relationships among work packages, and their contributions to the overall project objectives. The WP0 has the following assigned tasks:

- 1.1. Conduct stakeholder consultation to co-identify common problems, challenges and opportunities.
- 1.2. Identify local partners for each target country.
- 1.3. Identify the sampling population of the targeted group/location (i.e. urban-poor).

This report is divided into three sections. Section 1 presents the project background and purpose of the report. Section 2 focuses on the importance of stakeholder engagement as well as guidelines for organising a stakeholder workshop/engagement. Section 3 provides (a) the list of stakeholders identified for engagement at various stages of the project, (b) a description of the target population for primary data collection, (c) the study areas and justification for their selection and (d) the sampling procedure and sample size determination. Furthermore, section 3 covers the four partner countries with 3.1 focusing on Ghana, 3.2 presenting on Tanzania while sections 3.3 and 3.4 focus on South Africa and Malaysia, respectively.

2.0 Stakeholder Engagement and Guidelines for Organizing a Stakeholders' Workshop

2.1 Stakeholder Engagement

Stakeholders and key players within the food system are important in shaping the food environment for healthy and sustainable diets. To better understand food environment problems and solutions, stakeholders' engagement is crucial. Therefore, the project will engage key stakeholders throughout the project lifespan. The first engagement will seek to identify and understand key food environment problems, challenges and opportunities. These stakeholder categories can collaborate and advocate for policies, best practices, and behaviours that promote sustainable and healthy diets in transitioning economies. Effective engagement and cooperation among these stakeholders are essential to create lasting change in food environments. It is expected that by the end of March 2024, physical meetings with stakeholders will have been completed.

2.2 Guidelines for Organizing a Stakeholders' Workshop for the FETE Project

Organizing a stakeholders' workshop for the FETE project requires careful planning to ensure that the objectives are met effectively. Here are guidelines for organizing such a workshop:

Pre-Workshop Planning

1. Define Workshop Objectives

Clearly articulate the workshop objectives based on the project's main goals. Ensure that the objectives align with the questions posed for the consortium.

2. Identify and Invite Key Stakeholders

- Compile a comprehensive list of potential stakeholders relevant to each research question and invite them to participate.
- Ensure representation from government bodies, NGOs, academic institutions, industry, community groups, and international organizations.

3. Develop a Workshop Agenda

- Structure the agenda to address each research question systematically.
- Allocate sufficient time for group discussions, presentations, and interactive sessions.
- Include breaks to foster networking and informal discussions.

Workshop Execution

4. Introduction and Icebreaker:

- Start with an overview of the FETE project and its goals.
- Conduct an icebreaker activity to foster a collaborative atmosphere.

5. Present Project Overview and Objectives:

- Clearly present the five main research questions the consortium aims to answer.
- Emphasize the importance of collaboration and information sharing.

6. Expert Presentations:

- Invite subject matter experts to provide insights into each question.
- Allow time for Q&A sessions after each presentation.

7. Breakout Sessions

- Divide participants into groups corresponding to the questions.

- Facilitate discussions within each group to identify other key stakeholders, drivers, challenges, and opportunities.
- 8. Reporting Back and Plenary Discussions**
 - Each group presents their findings to the whole workshop participants.
 - Facilitate plenary discussions to identify common themes, differences, and potential synergies.
- 9. Recommendations for policy and practice Sessions:**
 - a. Engage participants in brainstorming sessions to develop suitable dietary and policy recommendations.
 - b. Identify key players and uptake pathways for implementing these recommendations.
- 10. Scaling Out Strategies**
 - Facilitate discussions on how the methods and results obtained can be scaled out more widely in the Global South.
 - Encourage participants to share insights and strategies for scalability.
- 11. Role of stakeholders in the project.**
 - Discuss and confirm the expected role of each stakeholder in the project. For example, some can provide secondary data, policy documents, and support in dissemination and implementation recommendations.
 - During the dissemination workshop, encourage stakeholders to identify future activities for their institutions based on the project recommendation
 - Stakeholders should draw up a roadmap or a simple action plan for implementing the activities identified.

NB: The number of stakeholders invited to the physical meetings depends on the budget available. Other methods of engagements such as virtual meetings, small group meetings, one-on-one meetings, discussions over the phone, use of questionnaires and online discussions platforms e.g. D-groups and Community of Practice can also be used as applicable.

Stakeholder mapping

This exercise is effective when conducted with stakeholders during the consultation workshop. Net-Map Analysis shows interactions among different stakeholders in terms of (a) Who they are, (b) How they are linked, (c) What their constraints are, and (d) What they can do better. The net mapping exercise is useful as follows:

- Visualising implicit knowledge and understanding of the interplay of networks, power relations and stakeholders' goals
- Uncovering sources of conflicts as well as potentials for cooperation
- Facilitating knowledge exchange and learning processes, and
- Developing visions and strategies to achieve common goals

The key steps in net mapping analysis are:

- Step 1: Identify which stakeholders can influence any activity related to the project objectives, food environments and food choices
- Step 2: Identify goals/tasks of stakeholders regarding the project objectives & activities (during & after the project)
- Step 3: Characterise how these stakeholders are linked within the food environment

- Step 4: Indicate the influence of these stakeholders (power assessment) e.g. by voting
- Step 5: Identify constraints compromising healthy and sustainable food environments
- Step 6: Identify solutions to tackle the constraints
- Step 7: Construct the map

Post-Workshop Follow-Up

12. Documentation

- Document key findings, recommendations, and action points from each session.
- Share the documentation with participants for feedback and corrections.

13. Follow-up on the roadmap or action plan developed

- Based on the action plans developed, collaborate with the stakeholders in developing project proposals based on the activities identified and the action plans.

14. Communication and Dissemination

- Communicate the workshop outcomes to all participants and stakeholders.
- Consider organising a post-workshop webinar or report to disseminate findings more widely.

15. Feedback Mechanism

- Establish a feedback mechanism for continuous improvement.
- Collect feedback from participants on the workshop structure, content, and overall effectiveness.

16. Follow-up Meetings

Schedule follow-up meetings to track progress on action items and maintain momentum. By following these guidelines, you can create a collaborative and productive stakeholders' workshop that addresses the FETE project's objectives and fosters a shared understanding of challenges and opportunities in shaping food environments for healthy and sustainable diets.

3.0 Stakeholder Identification, Target Population and Sampling

3.1 GHANA

3.1.1 National Stakeholders

Through desk research, document review and experiences from past stakeholders' engagement activities, the Ghana team has identified a list of stakeholders to be engaged at various stages of the project. The stakeholders have been categorised into groups as follows and Table 1 provides the specific stakeholder institutions in each category.

- Government and policymaking institutions
- Academic and Research Institutions and research groups
- Food Industry and Trade Associations
- International Organizations
- Civil Society and Non-Governmental Organizations (NGOs)
- Financial institutions
- Healthcare Professionals
- Media and communication outlets
- Trade Associations
- Women groups
- Youth groups

- Religious organisations
- Politicians

Table 1: List of Stakeholders-Ghana

Stakeholder group	Stakeholder name	Their role in the project
Government institutions including regulators	<ul style="list-style-type: none"> ● Ministry of Food and Agriculture (MOFA) ● Food and Drugs Authority (FDA) ● Environmental Protection Agency (EPA) ● Ministry of Health (MOH) ● National Development Planning Commission (NDPC) ● MMDAs (Environmental Health and Sanitation Unit) ● Ghana Tourism Authority ● Ghana Education Service-School Feeding Programme, School Health Education Programme ● Ministry of Fisheries and Aquaculture Development ● Parliamentary Select Committee on Health ● Ghana Health Service (Nutrition Unit) 	<ul style="list-style-type: none"> ● Support and create an enabling environment for the uptake of the project's research findings for sustainable and healthy diets in the food sector in Ghana. ● Regulation of food safety and labelling recommendations from the project to ensure compliance with health standards. ● Ensuring the project's recommendations influence the environmental aspects of food production and distribution. ● Collaboration on public health policies, especially those related to nutrition and dietary guidelines. ● Providing strategic planning and coordination to align the project with national development goals. ● Create the enabling environment and influence the local implementation and enforcement of health and sanitation regulations at the community level. ● Integrating sustainable and healthy food options in the tourism sector, promoting culinary tourism. ● Incorporating nutritional education and guidelines into school feeding programs. ● Supporting sustainable fisheries practices. ● Legislative support and advocacy for policies

Stakeholder group	Stakeholder name	Their role in the project
		<p>promoting sustainable and healthy diets.</p> <ul style="list-style-type: none"> ● Providing health expertise and support for the development and implementation of nutrition-focused initiatives.
Academic, research Institutions and research groups	<ul style="list-style-type: none"> ● University of Ghana - Department of Nutrition and Food Science ● Council for Scientific and Industrial Research (CSIR) ● Kwame Nkrumah University of Science and Technology (KNUST) - College of Agriculture and Natural Resources ● Institute of Statistical, Social and Economic Research (ISSER) ● Ghana Academy of Arts and Sciences ● University for Development (UDS) ● University of Health and Allied Sciences (UHAS) ● Health Colleges 	<ul style="list-style-type: none"> ● Providing scientific expertise, and contribute to the development of evidence-based policies. ● Research and academic input on agriculture, nutrition, and sustainable practices. ● Providing statistical information to support secondary data collection and analysis. ● Contributing interdisciplinary expertise and promoting collaboration between academia and policy-makers. ● Research and academic input on sustainable development and nutrition. ● Providing expertise on health-related aspects of nutrition and promoting interdisciplinary collaboration. ● Contributing to health education initiatives related to nutrition.
Food Industry and Trade Associations	<ul style="list-style-type: none"> ● Association of Ghana Industries (AGI) ● Ghana Chamber of Commerce and Industry (GCCI) ● Food and Beverage Association of Ghana (FABAG) ● Ghana Agribusiness Chamber ● Ghana Employers' Association (GEA) - Agribusiness Sector ● Ghana National Chamber of Commerce and Industry (GNCCI). ● Ghana Agricultural Workers Union (GAWU) 	<ul style="list-style-type: none"> ● Advocating for business interests and promoting sustainable and healthy practices within the food industry. ● Representing the interests of food and beverage producers, ensuring adherence to quality and sustainability standards. ● Promoting agribusiness interests and facilitating collaboration between the government and the private sector.

Stakeholder group	Stakeholder name	Their role in the project
	<ul style="list-style-type: none"> ● Peasant Farmers Association of Ghana ● Ghana Cocoa Board (COCOBOD) ● Agri-Impact Consult ● Ghana National Association of Farmers and Fishermen (GNAFF) ● Poultry Farmers Association ● Vegetable Farmers Association 	<ul style="list-style-type: none"> ● Advocating for initiatives that promote sustainability. ● Representing the broader business community and advocating for policies that support sustainable and healthy diets.
International Organizations	<ul style="list-style-type: none"> ● World Health Organization (WHO) - Ghana Country Office ● Food and Agriculture Organization (FAO) - Ghana Representation ● United Nations Development Programme (UNDP)-Ghana ● International Fund for Agricultural Development (IFAD) - Ghana ● World Bank-Ghana Office ● World Food Programme (WFP) ● UNICEF, African Development Bank 	<ul style="list-style-type: none"> ● Providing global health expertise, technical support, and aligning the project with international health standards. ● Offering expertise in agriculture, food security, and promoting sustainable practices within the food sector. ● Facilitating development initiatives, providing technical assistance, and aligning the project with sustainable development goals. ● Providing financial support, technical expertise, and promoting policies that align with sustainable and healthy diets. ● Supporting food security initiatives, providing humanitarian aid, and aligning with the project's goals on sustainable diets. ● Supporting child-focused initiatives, providing financial and technical assistance, and promoting sustainable development.
Civil Society and Non-Governmental Organizations (NGOs)	<ul style="list-style-type: none"> ● Ghana Coalition of NGOs in Health (GCNH) ● EatSafe International Star Ghana ● Food Sovereignty Ghana ● Friends of the Earth-Ghana ● Consumer Advocacy Centre 	<ul style="list-style-type: none"> ● Advocating for health-related issues, mobilizing resources, and promoting community engagement in the project. ● Promoting food safety and hygiene practices, and advocating for the inclusion of

Stakeholder group	Stakeholder name	Their role in the project
	<ul style="list-style-type: none"> ● Plan Ghana ● Food Aid ● Ghana Urban Agriculture Network (GUAN) ● Community Water and Sanitation Agency (CWSA) ● Centre for Indigenous Knowledge and Organizational Development (CIKOD) ● Rural Environmental Care Association (RECA) ● Ghana Federation of Forest and Farm Producers (GhaFFaP) ● Green Advocacy Ghana ● Friends of the Earth-Ghana - Green Food Campaign ● Consumer Protection Agency (CPA) – Ghana. ● Consumer Protection Agency (CPA) – Ghana ● Ghana Organic Agriculture Network (GOAN) ● Sustainable West Africa Palm Oil Programme (SWAPP) ● Ghana Food Movement 	<p>safe food practices in the project.</p> <ul style="list-style-type: none"> ● Advocating for sustainable and locally controlled food systems, contributing to policy discussions on food sovereignty. ● Advocating for environmentally sustainable food systems and contributing to awareness campaigns on sustainable diets. ● Advocating for consumer rights, ensuring transparency in food labelling, and promoting awareness of healthy food choices. ● Implementing community-based projects, focusing on nutrition education, and contributing to the project's community impact. ● Providing food assistance in emergencies and supporting initiatives that address food insecurity and malnutrition. ● Promoting urban agriculture, contributing to sustainable food production, and engaging communities in the project. ● Contributing to water and sanitation initiatives that support healthy diet.
Financial institutions	<ul style="list-style-type: none"> ● Agricultural Development Bank (ADB) ● Fidelity Bank Ghana ● Stanbic Bank-Sustainability and Social Impact Banking ● Social Impact Investment Foundation (SIIF) ● Ecobank Ghana ● Ghana Commercial Bank 	<ul style="list-style-type: none"> ● Providing financial and technical support to sustain the project after funding has ended. ● Support for upscaling or commercialization.
Healthcare Professionals	<ul style="list-style-type: none"> ● Ghana Medical Association (GMA) 	<ul style="list-style-type: none"> ● Provide expert advice to inform evidence-based policy in the food sector.

Stakeholder group	Stakeholder name	Their role in the project
	<ul style="list-style-type: none"> ● Ghana Nurses and Midwives Association (GNMA) ● Ghana Dietetics Association ● Ghana Public Health Association (GPHA) 	
Media and communication outlets	<ul style="list-style-type: none"> ● Ghana News Agency (GNA) ● Multimedia Group Limited (Joy FM, Adom FM) ● Graphic Communications Group Limited ● Citi FM ● Social Media Influencers for Health and Nutrition 	<ul style="list-style-type: none"> ● Publicity ● Media engagements ● Dissemination strategies
Trade Associations	<ul style="list-style-type: none"> ● Chef Association of Ghana ● Commodity Sellers Association ● Traditional Caterers Association 	<ul style="list-style-type: none"> ● Advocacy, Education
Other groups	<ul style="list-style-type: none"> ● Youth groups, faith community, politicians, Members of Parliament 	<ul style="list-style-type: none"> ● Advocacy, Peer education, Community education, political commitment

Source: Authors, Compilation, 2023

3.1.2 Target Population and their Location in Ghana

An urban area is the region surrounding a city and can be referred to as a town, city and suburb. Most inhabitants of urban areas have non-agricultural jobs. It has a density of human structures such as houses, commercial buildings, roads, bridges, and railways. The most widely used criteria across different countries to distinguish urban from rural localities is the minimum population threshold (MPT) (Deuskar, 2015; United Nations, 2018). In Ghana, a population threshold of 5,000 or more people is classified as an urban area (Ghana Statistical Service, 2021) despite the challenges and difficulties associated with it (Baker & Pedersen, 1992; Songsore, 2009; Ghana Statistical Service, 2014; Deuskar 2015; Akubia & Yankson, 2020). It has therefore been proposed that an analysis is done on the main economic activities of the population and every locality which has more than 60 percent of its residents engaged in nonagricultural activities in addition to having a minimum population size of 5,000 is classified as being an urban locality, area or centre (Ghana Statistical Service, 2014).

Poverty is relative and the most widely used dimension of poverty definition and measurement in the literature is economic well-being. As such, researchers have attempted to define poverty in various quantifiable ways. They include income, consumption and welfare. In addition, these three measures are defined using absolute, relative and subjective concepts. Based on the absolute income approach, the World Bank, International Monetary Fund (IMF) and occasionally the United Nations Development Programme (UNDP) define the poverty line based on one dollar a day of income (World Bank 1999, 2001). Whatever definition is used, people and families who live in poverty may go without proper housing, clean water, healthy food, and medical attention.

Such a category of people belongs to communities described as ‘urban poor’ within the urban centres such as Accra, the national capital.

The urban poor in Accra are largely of two categories. The first category is those described in the literature as the overflow of the rural poor who had migrated to the city in search of alternative employment and livelihood. They are labourers who do a variety of casual jobs and the self-employed who sell a variety of things on roadsides and are engaged in various activities. They live in informal settlements, most of which are affected by: overcrowded housing, risk of forceful eviction, lack of security, unavailability of water supplies, poor provision for sanitation, lack of access to healthcare, location vulnerable to disaster etc. The second category is those indigenes, the custodians of the particular land, who intend to preserve the cultural heritage of their older families (the ancestral roots) and therefore live without selling the lands or redeveloping their structures. Such communities lack planning with individuals, households, families and residents creating their environment with little or without input from the local government.

The two largest urban areas or cities in Ghana are Accra and Kumasi. The former is the national capital located in the southern part of the country with a population of 1,963,264. At the same time, the latter is the second largest city in the middle of the country with a population of 1,468,609 as of 2021 (PHS, 2021). The city of Accra and its residents are governed by a political body known as the Accra Metropolitan Area (AMA), which carries out legislative, deliberative and executive functions. The AMA is operated as a corporate body like other District Assemblies in Ghana (World Bank, 2010). AMA has undergone several restructurings over the years. As of 2010, administratively, the city was subdivided into 11 entities called Sub-Metropolitan District Assemblies popularly referred to as ‘sub-metros’ (World Bank, 2010). The sub-metros were Ablekuma North, Ablekuma Central, Ablekuma South, Ashiedu Keteke, Ayawaso Central, Ayawaso East, Ayawaso West, La, Okaikoi North, Okaikoi South, and Osu Klottey. Due to the upgrade of some of the sub-metros, as of the end of 2016, AMA has 15 Municipalities and Metropolitan Assemblies. There are three sub-metros under Accra Metropolitan Assembly namely Ablekuma South, Ashiedu Keteke and Okaikoi South with the remaining 12 upgraded to Municipal Assemblies.

3.1.3 Study Area and Justification

The FETE project focused on Accra, the national capital because of its proximity to the research team and as the largest urban centre in the country. To ensure total coverage of the Metropolis and maximize representation, the city was demarcated into North, West, Eastern, Southern and Central zones (Table 1 and Figure 1). At each zone, two communities were selected making a total of 10 communities as study sites. The communities were selected from a list of communities identified as urban poor communities in Accra (Norman et al., 2012). These communities are made up of both indigenous and migrant communities, classified as high population density with low income. According to the literature (World Bank 2010; GSS, 2021), they are categorised as 3rd and 4th class residential areas with average annual per capita household income +/-GH 6,509,090 / US\$793 and less than GH 6,509,090 / US\$793 respectively (Norman et al., 2012). Additionally, the communities are unplanned, with poor infrastructure, poor social amenities and lack of security as noted earlier. They are also described as squatter settlements or slums. They are situated in geographically and environmentally hazardous areas.

Table 2: Selected Communities and their Characteristics

Location	Locality	Characteristic	Assembly
North	South Shiashe	Indigens	Ayawaso West Municipal Assembly
	New Fadama	Migrants	Okaikoi South Sub Metropolitan District
South	Agbogbloshie	Migrants	Ashiedu keteke Sub Metropolitan District
	Osu Alata	Indigens	Korle Klottey Municipal Assembly
East	Teshie Old Town	Indigens	Ledzokuku Municipal Assembly
	Nungua Zongo	Migrants	Krowor Municipal Assembly
West	Glefe	Indigens	Ablekuma West Municipal Assembly
	Zabramaline	Migrant	Ablekuma Central Municipal Assembly
Central	Nima	Migrant	Ayawaso North Municipal
	Kotobabi	Indigenous	Ayawaso Central Municipal

Source: Adapted from Norman et al., 2012

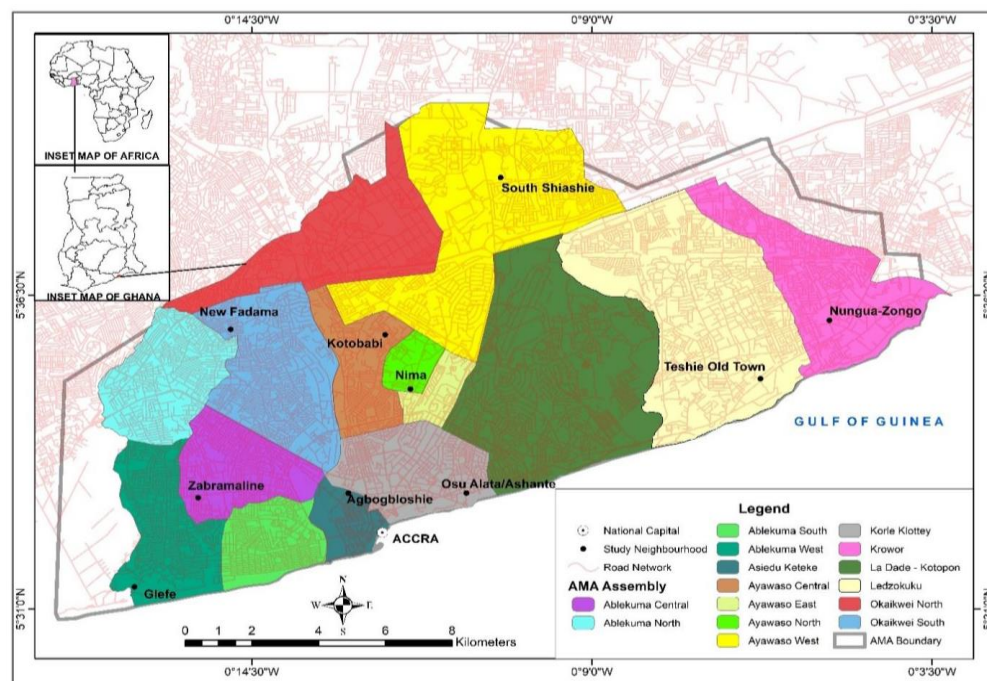


Figure 1: Accra Metropolitan Area Showing Selected Communities

Source: Authors Depiction, 2023

NORTH

a) South Shiashie

South Shiashie is an indigenous community located within the Ayawaso West Municipal Assembly (AWMA) in the Accra Metropolitan Area of the Greater Accra Region of Ghana. The Assembly was created out of the Accra Metropolitan Assembly in 2018 and is bordered by La-Nkwantanang Madina on the North, Ayawaso East on the South, Okaikwei North on the West and Ledzokuku on the East (Norman et al., 2012). The capital of AWMA is Dzorwulu. Though the Municipality is predominantly 1st and 2nd class residential areas such as Airport Residential Area, Dzorwulu and East Legon, a few 3rd Class residential areas including South Shiashie exist in the area.

b) New Fadama

New Fadama is a migrant Muslim community located within the Okaikoi South Sub Metropolitan District Council, one of the three (3) Sub Metropolitan District Councils of the Accra Metropolitan Assembly (A.M.A.). It shares boundaries with Okaikoi North to the North, Osu Klottey to the South, Ablekuma Central to the West and Ayawaso West to the East. It has Abeka as the capital. According to the literature, New Fadama has existed for over 50 years. It was formerly known as Fadama which is a Hausa word which means a water-logged area and originally located near the Konkomba (yam market) and Agboglobloshie markets towards the Accra Central business district in the Asiedu Keteke sub-Metropolitan area. The former location is known as Old Fadama. The current location, New Fadama was justified because the old location (Old Fadama) was waterlogged and development was not forthcoming according to the founder, Chief Sakir Ridwan Abass, they negotiated with the then Kwame Nkrumah government (www.ghanaweb.com). The name "Zongo" in Ghana is a corrupted version of "Zango", which is the proper name for Muslim settlements located within or attached to communities in the country. Many centuries ago, when the Islamic religion was introduced to West Africa, the Hausa people were the most prominent group to convert to Islam. The Hausa called their settlements "Zangos", not "Zongos". They migrated from outside Ghana and settled in their current location, and wherever they sojourned, they named their settlements "Zango".

SOUTH

a) Agboglobloshie

Agboglobloshie is situated on the banks of the Korle Lagoon, northwest of Accra's Central Business District (CBD) within the Ashiedu Keteke Sub Metropolitan District. Ashiedu Keteke is one of the three (3) Sub Metropolitan District Councils of Accra Metropolitan Assembly (AMA). The Sub metro is bounded by Osu Klottey Sub Metro to the West, Ablekuma Central to the North and Ablekuma South to the East. The real name is 'Agbloshishie' which translates as "under Agblo". Agblo is the name of a river deity that runs through the railway community in Agboglobloshie into the Odor River and flows to the Korle Lagoon. According to Afenah (2011), roughly 200,000 Ghanaians who inhabit the area are mostly migrants from rural areas. Due to its harsh living conditions and rampant crime, the area is nicknamed "Sodom and Gomorrah". Agboglobloshie is the biggest foodstuffs and vegetables market, electronic waste scraps market, and a part of the south industrial area. It serves as a very strategic economic hub for Ghana, with all the yams exported to Europe coming from there. The steel industry in Ghana also depends on the Agboglobloshie scrap electronic waste market for its raw materials (Hugo, 2011). The inhabitants are mainly migrants from northern Ghana. The local economy of Agboglobloshie is based on an

onion market serving immigrants to Accra from the Northern Region (Dagbani). Unemployed immigrants turned to scrap metal collection, including auto scrap, to supplement their incomes (Monbiot, 2009).

b) Osu Alata

Osu Alata is an indigenous community located about 3 km east of the Central Business District (CBD) of Accra. Administratively it is located within the Korle-Klottey Municipal Assembly. The Municipality was carved out of the Greater Accra Metropolitan Assembly (AMA) in 2019 and has Osu as its capital. It is bounded by Ayawaso Central Municipality to the north, La Dadekotopon to the east, Accra Metropolitan Authority to the west and the Gulf of Guinea to the south (Korle-Klottey Municipal District, 2022). Osu, though noted for its state-of-the-art residences, office towers, hotels, restaurants with local and continental dishes and major landmarks like the Accra Sports Stadium and Christiansburg Castle, has a high-density low-income indigenous community known as Osu Alata (KoKMA, 2020). The people of Osu Alata are associated with the Ga ethnic group. This group traditionally owns the land in the capital city of Accra and some parts of the Greater Accra Region. The Ga communities, though custodians of the land in the capital city, Accra, have poor communities. Many factors contribute to this situation including the land tenure system, historical, political and socioeconomic. The tenure system is historical where the colonial land ordinances and laws of the 19th and 20th century significantly impacted the Ga communities in Accra. Though custodians of the land, they have limited land because being the capital city, the government has taken most of the land for public use especially infrastructural development and office of government. The poor communities have high population density, overcrowding, poor sanitary conditions unemployment and dilapidated housing (Owusu & Afutu-Kotey, 2010). They live in coastal settlements such as Jamestown (Ngleshie), Usher Town (Kinka), Chorkor, Korle Gonno, Akoto Lantey, Labadi, Teshie, Nungua and the town of Osu (Ga Dangme Secretariat, 2002, cited in Ankoma, 2014). Osu Alata is a very old town just like the other Ga communities which in the past thrived or subsisted on fishing, farming, hunting and salt making (Odotei, 1995). It, however, went into trade with the Europeans during their expansion in the Gulf of Guinea and as a result, led to the Danish establishment of the Christianborg Castle, formerly called Fort Christianborg, at Osu. According to Wellington (2011), Osu Alata and other three squatter communities namely Kinkawe, Ashinte Blohum and Anohor were named Danish Osu. This division according to Parker was to fashion the community to mirror their origins (Ankoma, 2014).

EAST

a) Teshie Old Town

Teshie Old Town is a coastal community in the Ledzokuku Municipal Assembly, in the Greater Accra Region. The Municipality was established in 2017 among the 26 new Assemblies created. Geographically, it is bounded on the south by the Gulf of Guinea, to the east by Krowor Municipal Assembly, on the north by Adentan and Ayawaso West Municipal Assemblies and to the west by La Dade-Kotopon Municipal Assembly. Teshie Old Town is a Ga fishing indigenous community.

b) Nungua Zongo

Nungua Zongo is a slum community in the Krowor Municipality and is about 20 km from Accra city centre. It is a multi-ethnic community and the dominant groups migrants mostly from Northern Ghana and even outside Ghana. It is unplanned with untarred roads, densely populated, and lacks social amenities such as proper toilets and portable water. However, it is a fast-

developing area as a result of middle-class and high-income earners building their houses in the area.

WEST

a) Glefe

Glefe is an old fishing community located in the south-western part of Central Accra. Administratively, it is located within Ablekuma West Municipal Assembly (AWMA), one out of the 15 Metropolitan, Municipal and District Assemblies in the Accra Metropolitan Area in the Greater Accra region. The Municipal capital is Dansoman. The assembly was founded in 2017, after a restructuring of the administrative system. Glefe is an informal settlement situated on a 2 km sandbar that runs along the Gulf of Guinea, covering a land area of 139.674 km² (Møller-Jensen et al. 2020). It is enclosed by two lagoons namely Gyatakpo in the west and Gbebu in the East which are connected to the sea. Pambros Salt Production Limited is one of the most prominent industries in West Africa located at the border of the Glefe community (Møller-Jensen et al. 2020). The community is characterized as a marginalized space struggling with poverty and a lack of basic services (Kofie et al., 2023).

b) Zabrama line

Zabrama Line is a migrant settlement in the Ablekuma Central Municipality. The Municipality was carved out of the Accra Metropolis. Its capital is located at Laterbiokorshie, which is a highly urbanized mixed community with residential and commercial functions. The community of Zabrama line is largely unplanned, with poor sanitation and housing units. Zabarma is the Hausa word for the Jeema people, who are related to the Songhay and who presently live near Niamey and Dosso (Niger) and Sokoto in Northern Nigeria. The Zabrama Line community are mainly migrants from outside Ghana and came to settle in the area. Mostly the inhabitants are involved in trading activities such as livestock and food commodities.

CENTRAL

a) Nima

Nima is a densely populated slum community and 7 km north of the city centre of Accra. At the last national census, the population of Nima and its neighboring Maamobi was 340,000 and is estimated to be close to two million inhabitants presently (GSS, 2010). Although at the heart of the City of Accra (Ayawaso North Municipal), Nima is unplanned with poor access to social amenities, poor sanitation and congested housing units. It mainly consisted of migrants especially from Northern Ghana and predominantly a Muslim community. It has the biggest mosque in Ghana. Due to low cost of rents, Nima is also a place for people migrating from rural areas to Accra (Agyei-Mensah and Owusu, 2012). Nima is known for its big market for a variety of cheap food commodities such as grains, cereals, vegetables, spices and livestock.

b) Kotobabi

Kotobabi is an indigenous densely populated Ga community at the heart of Accra, located within Ayawaso Central Municipal Assembly. The Assembly is bounded to the north by Ayawaso West Municipal, to the West by Okaikoi South Municipal, to the south by Korley Klottey Municipal, and to the east by Ayawaso East Municipal Assembly. Kotobabi is fairly planned, has tarred roads and has access to potable water. However, it suffers from poor sanitation, overcrowding and

congestion. Due to its location, it has a lot of commercial, and retail spaces alongside residential buildings. It is closer to major markets in Accra such as Makola and Agbogboloshie.

3.1.4 Sampling Procedure and Sample Size Determination

A multistage sampling approach will be used to select households for this study. Firstly, Accra is demarcated into five zones as noted in the selection of the communities; North, South, West, Eastern and Central zones (clusters). From the list of 3rd and 4th categorized communities referred to as urban poor (Norman et al., 2012), two communities were selected from each zone (Figure 1). In each zone, one indigenous and migrant community were selected. For the second stage, a list of Enumeration areas (EAs) for the ten communities will be sourced from the Ghana Statistical Service (GSS) and with a random sampling, two EAs each will be selected per community. EAs are primary sampling clusters used for surveys by GSS. Finally, for each selected EA and with the source data of households from GSS, a proportionate systematic random sampling will be used to select households for the study.

Sample size determination

The sample size for study was obtained using the Cochran formula for household cross-sectional survey:

$$n = \left(\frac{z^2 \times (p)(q)}{d^2} \right) \times f$$

Where n is the Sample size to be determined, z is the z-score (reliability coefficient) of 1.96 at 95% confidence level, d is the margin of error of 3% (0.03), and q is $1-p$, and f is the design effect assumed to be 2.0 accounting for clustering effect in sampling.

p is the proportion of the urban poor set at 45% based on the proportion of families living in some form of slum housing in Accra (PHC, 2021). Substituting these figures into the formula given above;

$$\begin{aligned} n &= \left(\frac{1.96^2 \times (0.45)(1-0.45)}{0.03^2} \right) \times 2n = \left(\frac{3.8416 \times 0.2475}{0.0009} \right) \times 2n = \\ &\left(\frac{0.950796}{0.0009} \right) \times 2n = 1056.44 \times 2n = 2112.88 \approx 2113 \end{aligned}$$

Accounting for a 10 % non-response rate of the estimated sample size of 211 and, the sample size is adjusted upward and **rounded to 2324 households.**

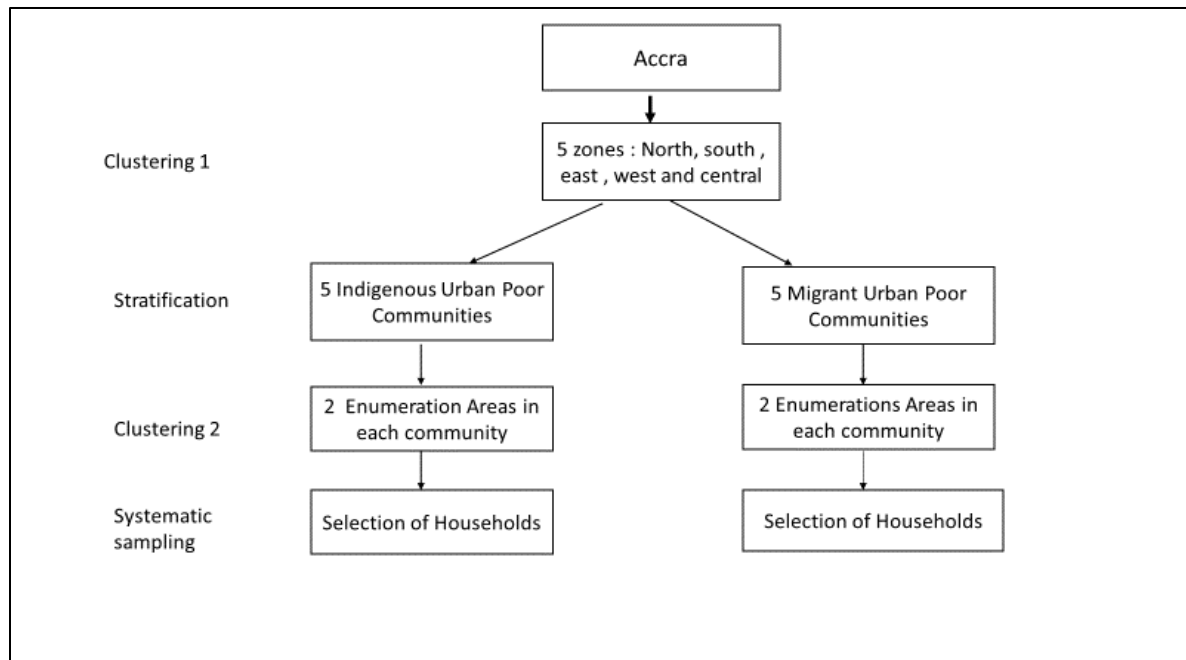


Figure 2: Schematic diagram showing the sampling procedure in Ghana
Source: Authors' Depiction, 2023

3.2 TANZANIA

3.2.1 National Stakeholders

The Team will conduct a physical stakeholder's consultation workshop. The stakeholders to be engaged in the project include local community based organizations (CBOs) and civil society organizations (CSOs). The team will conduct the net mapping exercise together with the stakeholders to ensure everyone is on the same page from the very beginning.

Table 3: List of Stakeholders in Tanzania

S/n	Stakeholder group	List of stakeholders	Their role in the project
1	Ministries	<ol style="list-style-type: none"> 1. Prime Minister's Office 2. Ministry of Livestock and Fisheries 3. Ministry of Education, Science and Technology 4. Ministry of Health 5. Ministry of Trade and Industry 6. Ministry of Planning and Investment 7. Ministry of Agriculture 8. President's Office Regional Administration and Local Government 9. Ministry of Information, Communication and Information Technology 10. Ministry of Lands, Housing and Human Settlements Developments 11. Ministry of Community Development, Gender, Women and Special Groups 12. Ministry of Education, Science, Technology and Vocational Training 	<ol style="list-style-type: none"> 1. Creating enabling environment for implementation of evidence –based policy recommendations intending to shape a healthy food environment 2. Participate in the validation process to discuss findings as part of development of policy recommendations. 3. Share updates on implementation of available/existing policies that support a healthy food environment. 4. Attend stakeholders meeting
2	Institutions	<ol style="list-style-type: none"> 1. Tanzania Food and Nutrition Centre 2. Tanzania Bureau of Standard 3. Tanzania Agriculture Research Institute 4. National Bureau of Statistics 5. International Institute of Tropical Agriculture (IITA) 6. National Institute of Medical Research 	<ol style="list-style-type: none"> 1. Conceptualize identified gaps, challenges and problems affecting food environments to develop intervention that will support provision of healthy diets in the country. 2. Provide technical support whenever needed based on their area of expertise.

		7. Tanzania Commission for Science and Technology (COSTECH)	3. Participate in the validation process to discuss findings as part of development of policy recommendations. 4. Utilise research finding for planning purposes. 5. Attend stakeholders meeting
3	Academia	1. University of Dodoma 2. Nelson Mandela African Institution of Science and Technology 3. Muhimbili University of Health and Allied Sciences	1. Conceptualize identified gaps, challenges and problems affecting a healthy food environment to develop interventions that will support the provision of healthy diets in the country. 2. Provide technical support whenever needed based on their area of expertise. 3. Participate in the validation process to discuss findings as part of development of policy recommendations. 4. Utilize research finding for planning purpose 5. Attend stakeholders meeting
4	Non - Governmental organization (NGOs) - Local	1. Southern Agricultural Growth Corridor of Tanzania (SAGCOT) 2. Center for Counseling, Nutrition and Health Care (COUNSENUH) 3. Partnership for Nutrition Tanzania (PANITA) 4. Mtandao wa Vikundi vya Wakulima Tanzania (MVIWATA) 5. Sustainable Agriculture Tanzania (SAT) 6. Nutrition Connect Tanzania (NCT) 7. Environmental and agricultural Watch (EWA) 8. Tanzania Social Economic and Environment Wellbeing 9. Tanzania Food for Education (TAFED)	1. Utilize research findings to enhance knowledge on shaping healthy food environments. 2. Participate in the validation process to discuss findings as part of development of policy recommendations. 3. Utilize research findings for planning purpose 4. Attend stakeholders meeting

5	International organizations and UN Agencies	<ol style="list-style-type: none"> 1. Nutrition International (NI) 2. Global Alliance for Improve Nutrition (GAIN) 3. HELVETAS (Switzerland organization dealing with agriculture and nutrition) 4. Save the Children 5. World Vision 6. CARE International 7. Hellen Keller International (HKI) 8. International Livestock Research institute (ILRI) 9. Aspires 10. Catholic Relief Services (CRS) 11. Action Aid 12. World Food Programme (WFP) 13. United Nations International Children's Emergency Fund (UNICEF) 14. Food and Agriculture Organization (FAO) 15. UN Habitat 16. 	<ol style="list-style-type: none"> 1. Participate in the validation process to discuss findings as part of development of policy recommendations. 2. Provide technical support whenever needed based on their area of expertise. 3. Support scaling up of the project 4. Attend stakeholders meeting 5. Support research and development component. 6. Participate in the validation process to discuss findings as part of development of policy recommendations. 7. Provide technical support whenever needed based on their area of expertise.
6	Associations	<ol style="list-style-type: none"> 1. Tanzania Non-Governmental Organization (TANGO) 2. Tanzania Horticultural Association (TAHA) 3. Tanzania Education Network 4. Tanzania Council for Social Development (TACOSODE) 5. Consumer Association 6. Traders Association 7. Community Empowerment Initiative Association 8. Manufactures Association 	<ol style="list-style-type: none"> 1. Conceptualize identified gaps, challenges and problems affecting healthy food environments to develop intervention/solutions that will support provision of healthy diets in the country. 2. Participate in the validation process to discuss findings as part of development of policy recommendations. 3. Attend stakeholders meeting
7	Faith Based Organizations (FBOs)	<ol style="list-style-type: none"> 1. Tanzania Catholic Church 2. National Muslim Council of Tanzania (BAKWATA) 3. Christian Council of Tanzania (CCT) 4. CARITAS International 	<ol style="list-style-type: none"> 1. Conceptualize identified gaps, challenges and problems affecting healthy food environments to develop intervention/solutions that will support provision of healthy diets in the country.

			<ol style="list-style-type: none"> Utilize research findings to enhance knowledge on shaping healthy food environments. Participate in the validation process to discuss findings as part of development of policy recommendations. Attend stakeholders meeting
8	Community Based Organizations (CBO)	<ol style="list-style-type: none"> Village Community Bank (Vicoba) Foundation for International Community Assistance (FINCA) Building Resources Across Community (BRAC) Microfinance Tanzania People Development Organization (TADEPO) 	<ol style="list-style-type: none"> Utilise research findings to enhance knowledge on shaping healthy food environments. Participate in the validation process to discuss findings as part of development of policy recommendations. Attend stakeholders meeting
9	Civil Society Organizations (CSO)	<ol style="list-style-type: none"> Community Support Initiative (CSI) Community Development and Environment Care Tanzania 	<ol style="list-style-type: none"> Utilize research findings to enhance knowledge on shaping healthy food environments. Participate in the validation process to discuss findings as part of development of policy recommendations. Attend stakeholders meeting
10	Networks	<ol style="list-style-type: none"> Tanzania Gender Network Programme (TGNP) Tanzania Education Network Tanzania Community Development Network 	<ol style="list-style-type: none"> Utilize research findings to enhance knowledge on shaping a healthy food environment. Participate in the validation process to discuss findings as part of development of policy recommendations. Attend stakeholders meeting
11	Private sectors	<ol style="list-style-type: none"> Coca Cola Tanzania Bakhresa Group of Companies Mohamed Enterprises 	<ol style="list-style-type: none"> Support research and development component. Participate in the validation process to discuss findings as part of development of policy recommendations. Attend stakeholders meeting
12	Others	<ol style="list-style-type: none"> Tanzania Social Action Fund 	<ol style="list-style-type: none"> Utilize research findings to enhance knowledge on shaping healthy food environments.

			2. Participate in the validation process to discuss findings as part of development of policy recommendations. 3. Attend stakeholders meetings.
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Source: Authors compilation, 2023

3.2.2 Target Population and their Location

Dar es Salaam region is one of the highly populated regions in Tanzania with a population of 5,383,728 people (8.7% of the total National population) (National Bureau of Statistics, 2022). In addition, it has a diverse food environment, various economic activities and diverse demographics (age, ethnicity, and cultural backgrounds). According to the Household Budget Survey (HBS) 2017/18, the proportion of households living below the poverty line was 2.6%. Extreme poverty increased from 1.0% in 2011/12 to 2.3% in 2017/18; similarly, basic needs poverty increased from 4.1% to 8.0% in 2012/18 (HBS, 2017/18). In 2017/18, extreme food poverty among children of age between 0-17 years was 2.8% and basic needs poverty was 9.6% (HBS, 2017/18). The total number of poor people in Dar es Salaam was 410,127 (HBS, 2017/18). Per Capita GDP at Current Market Prices for Dar es Salaam, increased by 24% from 3,771,149 TZS in 2016 to 4,678,751 in 2020.

About 75% of the population in Dar es Salaam region live in informal settlements, and 50% of this proportion have an average daily income of less than USD 1, use charcoal for cooking (59%), use water from non-improved water sources (4.6% rainy season and 6.6% dry season). In 2018, Dar es Salaam region scored 0.631 (medium category) on the Human Development Index (HDI). The city's HDI has increased every year since 1992, and it ranked higher than any other region in the country.

The proposed study population is described by following attributes:

1. **Poor livelihood activities:** Some of the household members depend on casual or non-permanent jobs, unskilled labour, and wage labour which offer low pay. They face challenges of low skills, low wages, unemployment and under-employment, a lack of health insurance and unsatisfactory working conditions.
2. **Low income:** The majority of households living in the proposed areas fall in the category of low-income level, which is defined by the nature of livelihood activities engaged.
3. **Poor living conditions:** The majority of the population located in the proposed study area live in poor conditions in terms of; -
 - Overcrowding of houses, there is insufficient space between houses.
 - High population density, the number of people living in the area exceeded the recommended per kilometer square.
 - Poor infrastructure, inadequate or limited access to essential services such as roads, health facilities, schools and markets.
 - Higher dependency burden, households face an economic burden to support and provide social services needed by children and other persons who are often economically dependent.
4. **High-risk areas:** Areas are exposed to high risk of disasters that have adverse effects on community and the infrastructure. Disasters such as epidemics and floods which particularly can affect the population.

5. **Poor availability of sanitation drainage and solid waste collection:** Lack of sewerage systems, standing water, overflowing or blocked drains, absence of waste collection services, illegal dumping sites and visible litter.

Table 4: List of Communities in the Study Area

S/N	District	Total number of wards in the District	Proposed Ward	Current total population
1	Temeke	23	Keko	26,427
			Miburani	29,351
2	Kinondoni	20	Kigogo	45,291
			Tandale	43,374
3	Ilala	36	Vingunguti	66,342
			Buguruni	47,278
4	Ubungo	14	Manzese	62,251
			Mabibo	74,887

Source: Authors' compilation, 2023

3.2.3 Study Area and Justification

Temeke Municipal Council is located in the south of Dar es Salaam, it covers an area of 656 km² with a coastal line of 70 km length and lies between 39°12' - 39°33' east and 6°48' -7°33' south. Temeke is the largest Municipality among all the five Municipalities of Dar es Salaam. It consists of twenty-three (23) wards with a total population of 1,346,674 and 384,046 households (NBS, 2022). Ratio of the population below the food poverty line was 2.6% and the majority being female headed households (DMDP, 2015). The impact of higher population densities is associated with high demand of social services, economic infrastructures, elaborated food environment and social security measures.

Agriculture is an important economic activity, especially in the peri-urban area of the Municipality, 14.5% of the population is engaged in agriculture and livestock keeping. It is estimated that the contribution of the sector to food production is 28% within the district; the remaining is obtained from outside the Municipality. The major cash crop in the district and Municipality is cashew nuts. Vegetable, coconut and fruit production has grown steadily from 2017 to date. Tomato is leading followed by coconuts and mangoes. The Municipality is also home to brewing industries, fish processing, cereal processing and timber industries. Temeke has 14 formal markets with the capacity to accommodate food and non-food traders. Other markets operating informally include Yombo Limboka, Bulyanga, Mbagala Mangaya, Mbagala Nyoka, and Yombo Machimbo.

1. Kinondoni Municipal Council

Kinondoni Municipal Council is bordered to the north by Bagamoyo District and Kibaha of Pwani Region, to the east by the Indian Ocean, to the west by Ubungo District, and the south by the Ilala District. The district covers an area of 269.5 km² at the latitude -6.77424 and the longitude of 39.112735. (lat:-6.795, lng:39.266;lat:6°47'42\S, lng:39°15'57.6\E). Kinondoni Municipality consists of twenty (20) wards. It has a total population of 982,328 and has a total of 299,184 households (NBS, 2022). About 61% of the labour force is engaged in the private sector, 35% are

self-employed and 4% are employed in the public sector. The activities include private companies, institutions, businesses, petty traders, fishing, livestock keeping and agricultural activities.

Kinondoni Municipality experiences a modified type of equatorial climate. It is generally hot and humid throughout the year with an average temperature of 29°C. The hottest season is from October to March while it is relatively cool between May and August with temperatures around 25°C. There are two rain seasons: short rains from October to December and a long rain season between March and May. The average annual rainfall is 1300 mm.

2. Ilala Municipal Council

Ilala District is one of five districts of the Dar es Salaam Region of Tanzania. It covers an area of 364.9 km² (140.9 sq meter), it consists of thirty-six (36) wards. The 2022 National Tanzania Census states the population for Ilala as 1,649,912 and 458,614 households. The Municipality is bordered to the north and northeast by Kinondoni Municipality and Ubungo Municipality, to the east by the Zanzibar Channel, to the west by Pwani Region, and to the south by the Temeke Municipality. It covers an area of 364.9 km².

Ilala Municipal Council's main economic activities include retailing businesses such as small and medium-sized shops, hotels, bars, and restaurants, transportation services, clearing and forwarding, agro businesses, medical businesses, handcraft businesses, banking businesses, and construction businesses. These activities employ around 45% of Ilala Municipality's total population.

Farming and livestock are another key economic activity in Ilala Municipality, employing 13% of the population. Cattle, goats, sheep, donkeys, pigs, and chickens are among the livestock kept in the municipality. Fishing in the Indian Ocean also employs a significant number of people in the municipality. Cassava, sweet potatoes, paddy, maize, and cowpeas are among the principal food crops farmed.

3. Ubungo Municipal Council

Ubungo municipal council is one of five districts of the Dar es Salaam Region of Tanzania. The municipal council covers an area of 269.4 km² (104.0 sq mi). The district is home to the University of Dar es Salaam, the Magufuli Bus Terminal (the largest bus stand in the country), and Pande Game Reserve the largest protected land area in Dar es Salaam Region. It consists of fourteen (14) wards with 317,087 households and a total population of 1,086,912 of whom 701,317 are of working age. The remaining population is made up of elderly people (20,626) and children (309,404). About 61% of the workforce works in the private sector, 35% is self-employed, and 4% is working in government. Private businesses, institutions, businesses, petty traders, fishing, livestock rearing, and agricultural pursuits are among the economic activities involved in the district.

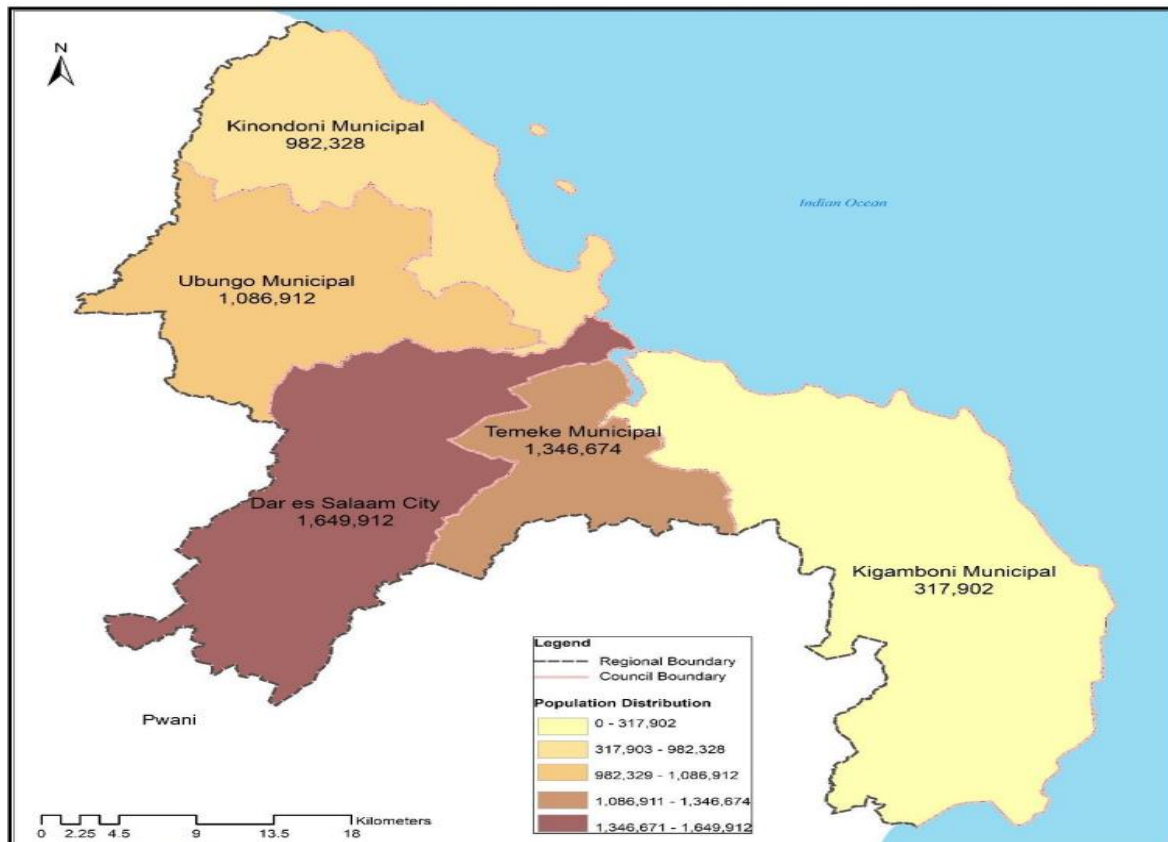


Figure 3: A map of Dar es salaam region showing the location of proposed study areas

3.2.4 Sampling Procedure and Sample Size Determination

Sampling Technique

A multi-stage sampling technique will be used to select households in the study area (see Figure 4) .

- i. Stage 1 – Region to participate in the study will be purposively selected based on the reason of having a high representation of the study group “urban poor”.
- ii. Stage 2 – Two municipalities will randomly be selected out of five municipalities.
- iii. Stage 3 – Two wards from each municipality will be randomly selected.
- iv. Stage 4 – From each ward two streets will be randomly selected. Systematic sampling technique will be used to select households from each street to participate in the study.

Sample size determination

The determination of the required sample size to be included in a research study to represent the urban poor population is determined by using a cross-sectional study formula to obtain the actual sample size. Considering the total population in Dar es Salaam region is 5,383,728, therefore the sample size will be determined using the following cross sectional survey formula; -

$$\text{Proposed formula for cross-sectional studies } n = \frac{Z^2 * p(1-p)}{E^2}$$

Whereby;

n = Require sample size (taking into account design effect of 1.2)

Z = Z – score corresponding to the desired confidence level (1.96)

P = Estimated population proportion of urban poor 30%, based on Tanzania Mainland Poverty assessment Report of 2018.

E = Margin of error (0.03)

Calculation

$$n = \frac{(1.96)^2 * 0.3(1-0.3)}{(0.03)^2}$$

$$n = \frac{3.8416 * 0.21}{0.0009}$$

$$n = 896$$

Therefore, approximately a sample size of 896 respondents will be needed to represent the proportion of urban poor in Dar es Salaam region from a total population of 5,383,728 to achieve a 95% confidence interval and margin of error of 3

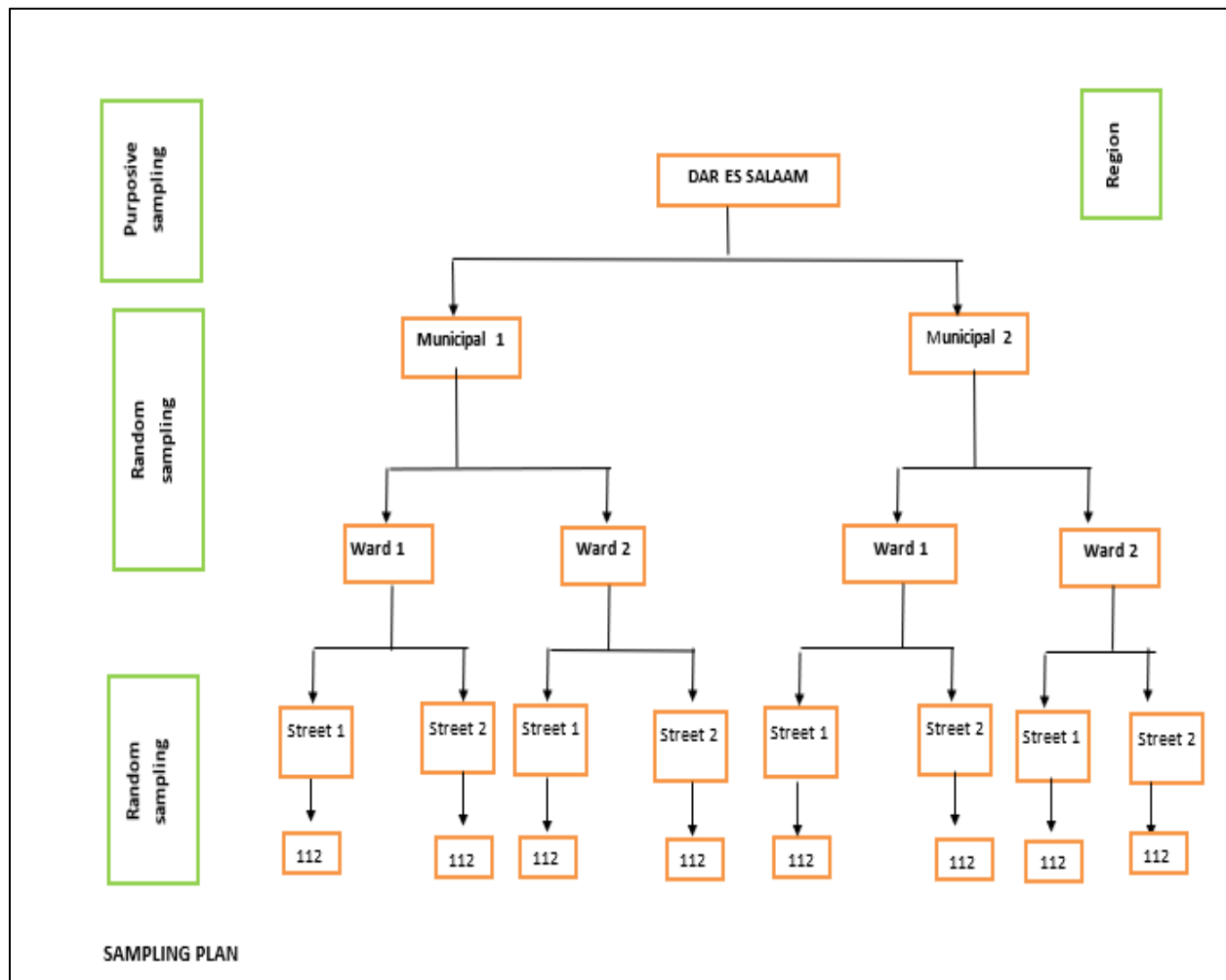


Figure 4: Schematic Diagram showing sampling approach
Source: Authors' depiction, 2023

3.3 SOUTH AFRICA

3.3.1 National Stakeholders

Engaging stakeholders throughout a project is crucial for success; however, as different stakeholders play various roles in shaping the food environment, other stakeholders will be engaged at different project stages. At project inception, a virtual stakeholder workshop will be conducted around February/March 2024, where all stakeholders will be invited. As the project progresses, specific stakeholders may become less actively engaged, especially during implementation, particularly those stakeholders who operate at national and district municipal levels due to varying levels of impact and involvement on the ground. Stakeholders at the local level will be engaged throughout the project phases. A second in-person stakeholder workshop will be conducted with all stakeholders during the second quarter of 2024 in collaboration with the Sustainable Healthy Food Systems (SHEFS) project. There will be two different stakeholder workshops. Table 1 below summarises various stakeholder groups that will be engaged in the project.

Table 5: South African stakeholder list in South Africa

Stakeholder group	Stakeholder name	Their role in the project
Government institutions, national organisations, and structures	<ul style="list-style-type: none">● Agribusiness Development Agency● Department of Agriculture, Land Reform and Rural Development● Department of Cooperative Governance and Traditional Affairs● Department of Economic Development, Tourism, and Environmental Affairs● Department of Forestry, Fisheries and the Environment● Department of Higher Education and Training● Department of Public Works and Infrastructure● Department of Small Business Development● Department of Trade Industry and Competition● Department of Women Youth and Persons with Disabilities● National Youth Development Agency● Provincial Disaster Management Centre	<ul style="list-style-type: none">● Providing guidance on strategic planning and coordination to align the project objectives with national objectives and goals.● Provide expertise on the policies and legislative practices that influence the food environment in South Africa.● Support research efforts and create an enabling environment for the uptake of research findings for sustainable and healthy diets in urban poor communities in South Africa.

Stakeholder group	Stakeholder name	Their role in the project
	<ul style="list-style-type: none"> • uMgungundlovu District Municipality • Umngeni Local Municipality • uMshwathi Local Municipality • UMsunduzi Local Municipality 	
Academic, research Institutions and research groups	<ul style="list-style-type: none"> • Agricultural Research Council (ARC) • Farmer Support Group • Human Science Research Council (HSRC) • Institute for Natural Resources (INR) • Sustainable Healthy Food Systems (SHEFS) Project 	<ul style="list-style-type: none"> • Assist with identifying and prioritising issues that could potentially affect the food industry, nutrition, and diets in the immediate and long term. • Contribute to the development of evidence-based policy recommendations and provide technical support based on respective areas of expertise.
Non-Governmental Organisations (NGOs)/ Civil Society/ advocacy groups	<ul style="list-style-type: none"> • African Farmers Association of South Africa (AFASA) • Association for Rural Advancement Land Rights Advocacy • UMngeni Conservation Trust • uMgungundlovu Economic Development Agency 	<ul style="list-style-type: none"> • Engage in dialogue, collaboration and problem-solving in support of local communities. • Advocating for urban poor communities and promoting community engagement in the project. • Disseminating research findings to consumers and informing communities about food purchases and how to practise the necessary safety requirements when handling, preparing, and storing food.
Agricultural Sector and food industry bodies	<ul style="list-style-type: none"> • AFGRI • Agbiz • Agrikool • Grain SA • National Agricultural Marketing Council (NAMAC) • National Emergent Red Meat Producers Organization • Potato SA • South African Poultry Association 	<ul style="list-style-type: none"> • Provide guidance, facilitate conversations, and share expertise on food safety, quality, nutrition, health and wellness and related regulatory matters in Southern Africa. • Facilitate conversations aimed at influencing decisions, change perceptions and behaviour of other key stakeholders to drive innovation.
International Organizations	<ul style="list-style-type: none"> • Food and Agricultural Organization (FAO-ZA) 	<ul style="list-style-type: none"> • Providing global health expertise, technical support,

Stakeholder group	Stakeholder name	Their role in the project
		and aligning the project objectives with international standards for promoting healthy sustainable diets.
Financial Institutions	<ul style="list-style-type: none"> ● ITHALA ● Land Bank ● Standard Bank ● Old Mutual 	<ul style="list-style-type: none"> ● Realign incentives and redirect finance into more sustainable activities and drive a shift to a more equitable, sustainable, and healthier food environment for both people and planet.
Women, youth, and people with disabilities groups	<ul style="list-style-type: none"> ● Deaf Federation of SA ● Disability Chamber of Commerce and Industry ● Disabled People Organisation ● National Movement of Rural Women ● South African Council for the Blind ● South African National Deaf Association ● Women in Agriculture and Rural Development ● Women's Movement of Disabled People South Africa 	<ul style="list-style-type: none"> ● Provide advice and perspective to highlight and correct the social and economic inequalities of marginalized groups in accessing marketplaces for healthy, affordable, safe, and sustainable food products. ● Provide perspective on the challenges and opportunities in the physical food environment.
Consumer protection groups, food regulatory agencies, food distributors, manufactures and retail consortiums	<ul style="list-style-type: none"> ● Unilever ● Pioneer foods ● RCL foods ● Consumer Goods Council of South Africa (CGCSA) ● Durban Chamber of Commerce and Industry (DCCI) ● South African Fruit & Vegetable Canners Association ● South African Nation Consumer Union 	<ul style="list-style-type: none"> ● Provide advice and perspective on the standards, norms, challenges, and opportunities for addressing issues related to consumer protection, consumer information and education to achieve healthy and sustainable diets.
Other	Fresh produce street vendors	<ul style="list-style-type: none"> ● Provide perspective on critical barriers preventing access to healthier food options, consumer buying habits and food preferences. ● Guide entry points for investments to make healthier food widely accessible at

Stakeholder group	Stakeholder name	Their role in the project
		<p>affordable prices for lower-income groups.</p> <ul style="list-style-type: none"> • Contribute to the conversation on urban planning, revising legal frameworks to regulate street vendor operations and adherence to food safety standards.

Source: Authors' compilation, 2023

3.3.2 Target Population and their Location & Justification of Study Area

South Africa's apartheid legislation and spatial laws, such as the Group Areas Act of 1950, were created to segregate the so-called 'white areas' and control the influx of black people in residential and business sections in urban areas. Black people were relocated to townships on the outskirts of urban areas closer to work. This also led to the establishment of informal settlements on marginal land, where people built their own houses from corrugated iron and scraps (Jürgens et al., 2013; Ziervogel, 2019). Some townships in larger cities in South Africa (SA) have benefited from post-apartheid transformation compared to small and medium-sized towns (Jürgens and Donaldson, 2012).

Poverty in SA is measured based on the inability of households to afford the minimum desired lifestyle. It includes multidimensional poverty indicators in various dimensions such as health, education, living standards and economic activity (see example of indicators in the Table 6 below) (Stats SA, 2020). Additionally, the National Poverty Line is structured using the cost-of-basic-needs approach, which associates welfare with the consumption of goods and services. It is measured in three thresholds: food poverty line, lower-bound poverty line and upper-bound poverty line (Stats SA, 2023). Based on the 2023 prices, the food poverty line was measured as individuals having R760 (approximately 39.67 U.S. dollars) a month available for food and categorised as living below the poverty line, the threshold of absolute deprivation. Individuals living with less than R1,058 (approximately 55.22 U.S. dollars) per month were considered poor and part of the lower-bound poverty line, having to choose between food and essential non-food items. Individuals in the upper-bound poverty line had R1558 (approximately 81.32 U.S. dollars) a month. These individuals were at the threshold of relative deprivation and could not afford the minimum desired lifestyle by most South Africans (Stats SA, 2023).

Table 6: Breakdown of the South African Multidimensional Poverty Indicators (SAMPI)

Dimensions of poverty	Indicators
Health	Child mortality (death of a child under 5)
Education	Years of schooling/attendance
Living standards	<ul style="list-style-type: none"> ▪ Lighting (no electricity) ▪ Heating (no electricity) ▪ Cooking (no electricity) ▪ Water (no piped water)

	<ul style="list-style-type: none"> ▪ Sanitation (no flush toilet) ▪ Dwelling (informal settlement/traditional/ caravan/ tent) ▪ Assets (no radio/TV/phone/car)
Economic activity	Unemployment (adults unemployed)

Source: Stats SA, 2020

Townships and informal settlement areas remain modern-day poverty traps characterised by high population density, poor service delivery, and poorly maintained infrastructure. Moreover, informal settlements are vulnerable to environmental risks and hazards such as flooding, fire, pollution and climate variability and are typically located in unauthorised areas not proclaimed for residential use. Therefore, in the South African context, the urban poor can be defined as a group of individuals below the national poverty line residing in formal cities/towns characterised by higher population densities and high economic activity and infrastructure levels. These individuals may also be beneficiaries of the SA government's indigent programme, which is a policy intended to provide free basic services (e.g. water and electricity) to poorer households by their respective municipalities (Stats SA, 2018).

The SA population is estimated at 62 million, and KwaZulu-Natal (KZN) is the second most populated province, with a population of about 12,4 million (Stats SA, 2022). In 2019, almost 18 million South Africans received state support, with the majority (over 4.1 million people) in KZN and eThekweni municipality in KZN had the most significant number of indigent households (Stats SA, 2018). The two selected study sites represent a township (Mpophomeni) and an informal settlement (Quarry Road West). The two areas have different histories and define different categories of marginalised urban dwellers living in urban poverty in SA.

Quarry Road, West Durban

Dense informal settlement in the urban core of Durban, eThekweni metropolitan municipality is located near residential suburbs, major transport routes and Durban's Central Business District. It has an estimated 931 households (on average three persons/household) and 2400 residents. Most Quarry Road West residents come from rural areas of KwaZulu-Natal and the Eastern Cape, the neighbouring province. The settlement has four municipally provided Community Ablution Blocks (CABs) containing showers, toilets and wash basins. Residents can access free basic water through communal standpipes (Williams et al., 2018).

Mpophomeni

Mpophomeni is in uMgungundlovu District Municipality (uMsunduzi local municipality) in KwaZulu-Natal, outside of Howick. It has an estimated 7,011 households and 25,732 residents as of 2011. The township has basic infrastructure, schools, clinics, and municipal services. The township was established during the apartheid era in the 1960s to accommodate black people removed from 'white areas' in the KZN Midlands. Early township residents were labourers from Howick's neighbouring farms and factories (Philipe, 2013).

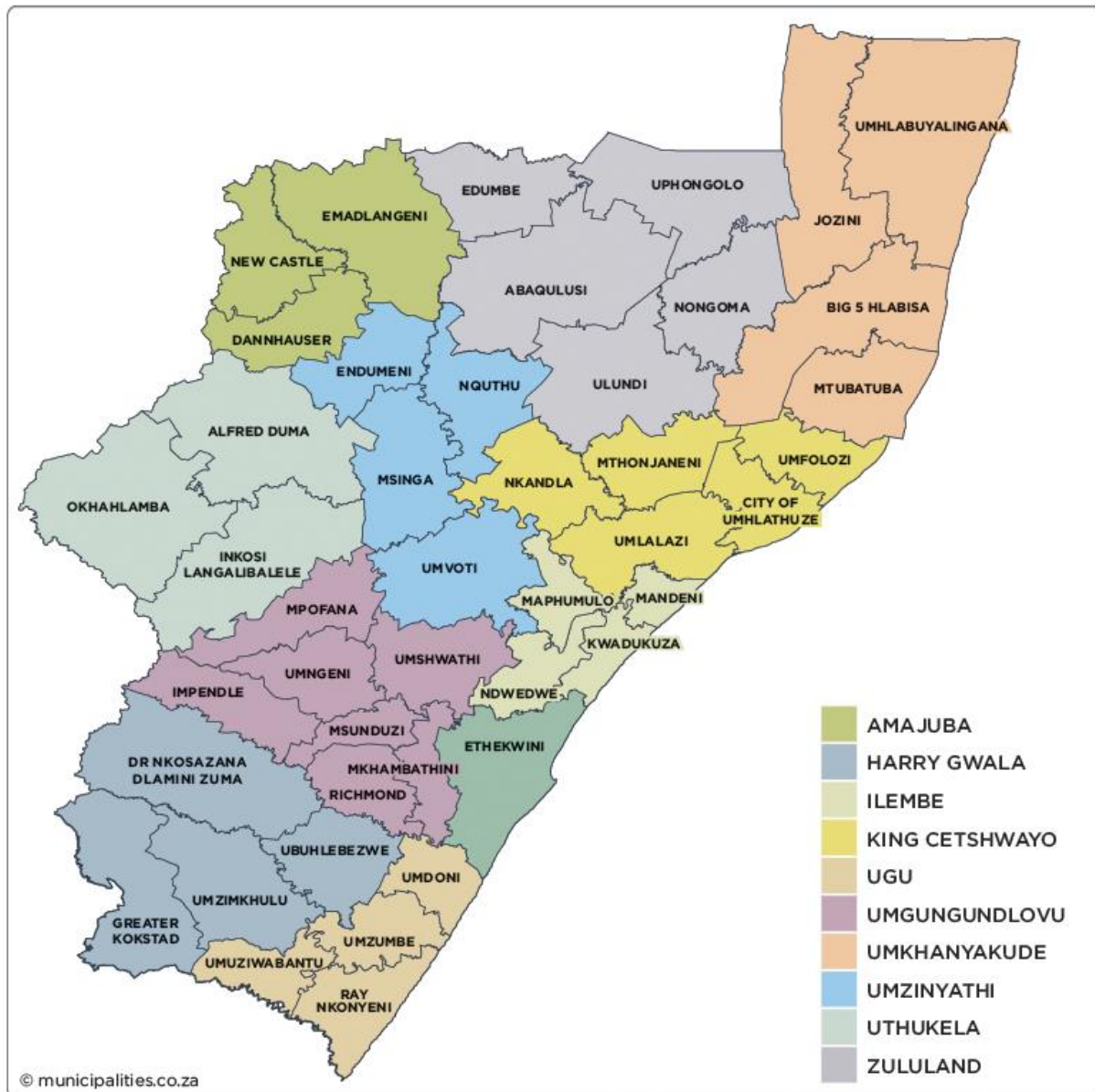


Figure 5: Map of KwaZulu-Natal District Municipalities. KwaZulu-Natal is divided into one metropolitan municipality (eThekweni Metropolitan Municipality) and 10 district municipalities, which are further subdivided into 43 local municipalities (source) <https://municipalities.co.za/provinces/view/4/kwazulu-natal>

3.3.3. Sampling Procedure and Sample Size Determination

Based on the latest available estimates, the total population of Quarry Road is approximately 2,400 residents, and there are approximately 25,732 in Mpophomeni. Using a cross-sectional study formula to obtain the actual sample size per area, the sample size will be:

Proposed formula for cross-sectional studies
$$n = \frac{Z^2 * p(1-p)}{e^2}$$

Whereby

n = Required sample size

Z = Z – score corresponding to the desired confidence level (1.96)

p = Estimated prevalence of the urban poor 0.3

e = Margin of error (0.03)

Calculation

$$n = \frac{(1.96)^2 * 0.3(0.7)}{(0.03)^2}$$

$$n = \frac{3.8416 * 0.21}{0.0009}$$

$$n = 896$$

Based on the population sizes of the two sites in South Africa, Mpopomeni (population of 7011 households) will have a sample of 792 households, while Quarry Road (population of 931 households) will have 104 households.

Sampling procedure and schematic diagram

A two-stage sampling technique will be used to select the study areas: purposive sampling for selecting the research sites and random sampling for selecting households in sub-sections of the two sites. Purposive sampling was used to determine two areas where the urban poor population in SA can be found. The urban poor population usually resides in townships and informal settlements in SA. The two sites represent a planned township at Mpophomeni, and an unplanned informal settlement at Quarry Road. The selected areas have established research relationships with UKZN, providing a degree of local trust and buy-in into the research. To choose the households in the area, a random sampling technique will be used where every household in that sub-area has an equal chance of being selected. Mpophomeni is divided into two areas, Mpophomeni A and B, which are planned blocks, with Block B further away from an arterial road. An equal number (n=396) of households in these two areas will be chosen randomly (see Figure 3 below) to add to the required sample number. Similarly, Quarry Road is divided into two areas: Mcondo and maMsuthu, each on either side of the banks of the Palmiet river. An equal number (n=52) of households will be randomly selected to add up to the required sample number.

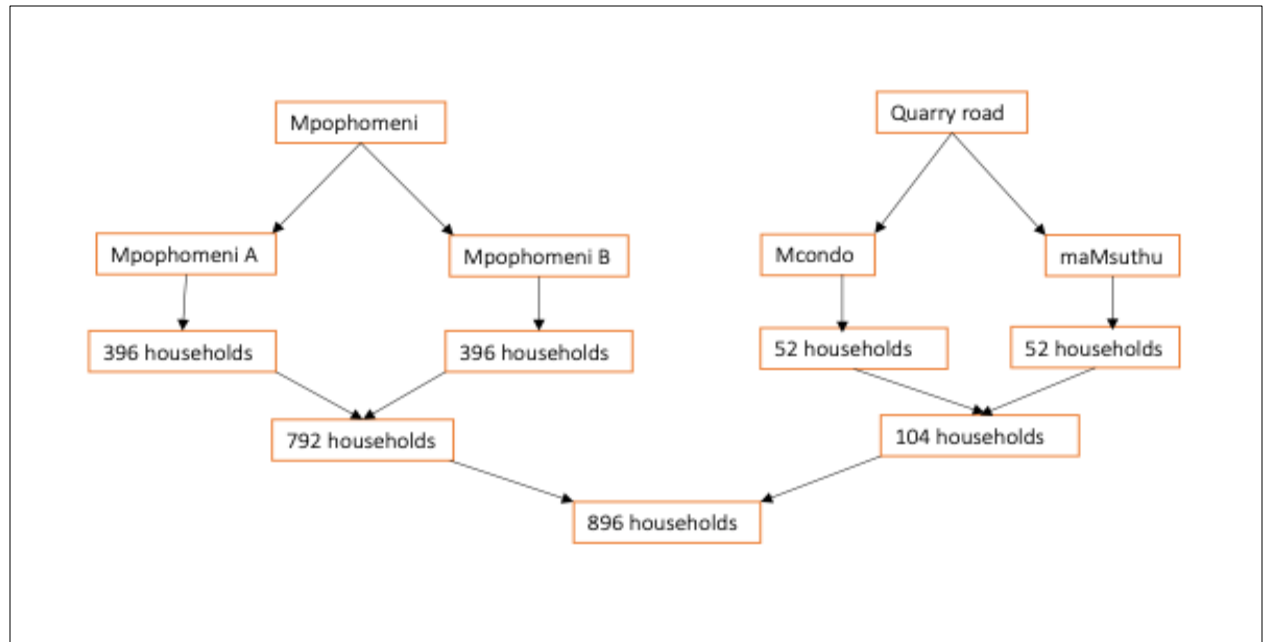


Figure 6: Schematic diagram showing the sampling approach in South Africa
Source: Authors' depiction, 2023

3.4 MALAYSIA

3.4.1 National Stakeholders

After a thorough desktop research, utilizing published peer-reviewed literature and additional sources such as industry reports and reputable online databases, a comprehensive list of pertinent stakeholders for Malaysia was assembled. Table 1 presents the categories of stakeholders along with their anticipated roles in the project. The forthcoming activities are slated to encompass the validation of sampling locations and neighbourhoods, as well as the collaborative net mapping exercise with stakeholders. Stakeholder workshops will be organized both virtually and in-person, contingent upon logistical considerations and the availability of targeted stakeholders. Engagement with these stakeholders will occur at various junctures throughout the project, tailored to the levels of impact and involvement of each stakeholder.

Table 7: List of Potential Stakeholders in Malaysia

Stakeholder group	Name of Stakeholders	Their role in the project
Government ministries and agencies	<ul style="list-style-type: none">• Municipal councils (Majlis Perbandaran.• Nutritionists at Health Clinics (Klinik Kesihatan)• Urbanice Malaysia• Federal Agricultural Marketing Authority (FAMA)• Ministry of Agriculture and Food Industries• Ministry of Domestic Trade, Co-Operatives and Consumerism	<ul style="list-style-type: none">• Policy formulation and Regulation to promote sustainable and healthy food environments.• Food Safety Inspections: Government agencies conduct regular inspections of food processing facilities, restaurants, and retail establishments to ensure compliance with hygiene standards and regulations.• Public education and awareness campaigns to raise awareness about the importance of healthy and eating habits and the environmental impact of food choices.• Investment and Infrastructure Development; Governments can allocate resources and invest in infrastructure to support sustainable food systems, such as agricultural research and development, transportation networks for food distribution, and storage facilities to reduce food waste.• Implementing community-based projects focused on nutrition education, while actively contributing to the project's impact within the community.• Assess, formulate, monitor, and implement Malaysian agricultural

		<p>development policies, strategies, and initiatives.</p> <ul style="list-style-type: none"> • Promoting the growth of ethical domestic trade and protecting the consumer interest; formulates policies, strategies and reviews matters related to the development of domestic trade and consumerism.
Local non – profit organizations	<ul style="list-style-type: none"> • Great Heart Charity • Yayasan Yara • MyKasih 	<ul style="list-style-type: none"> • Community Engagement and Education: Non-profit organizations can engage with local communities to raise awareness about the importance of sustainable and healthy diets. • Advocacy and Policy Influence: These organizations can advocate for policies and regulations that promote sustainable and healthy food environments. • Supporting Local Farmers and Food Producers: Non-profit organizations can support local farmers and food producers by providing technical assistance, training, and resources to promote sustainable farming practices • Food Access and Distribution: Non-profit organizations can work to improve access to affordable and nutritious food for underserved communities.
International Organizations	<ul style="list-style-type: none"> • UNICEF Malaysia • UN-Habitat • United Nations University International Institute for Global Health (UNU-IIGH) Malaysia • Food and Agriculture Organization (FAO) 	<ul style="list-style-type: none"> • Policy Development and Coordination: International organizations can assist in the development of policies and strategies related to food systems, nutrition, and sustainable development. • Capacity Building and Technical Assistance: These organizations can provide training, technical assistance, and capacity-building support to local governments, communities, and other stakeholders involved in promoting sustainable and healthy diets. • Resource Mobilization and Funding: International organizations can mobilize financial resources and funding opportunities to support

		<p>projects and initiatives aimed at shaping food environments for sustainable and healthy diets.</p> <ul style="list-style-type: none"> • Monitoring and Evaluation: International organizations can play a key role in monitoring and evaluating the impact of interventions aimed at promoting sustainable and healthy diets in transitioning economies.
Research Organisations	<ul style="list-style-type: none"> • Sunway Centre for Planetary Health • Jeffrey Sachs Center on Sustainable Development • Khazanah Research Institute 	<ul style="list-style-type: none"> • Data Collection and Analysis: Research organizations can conduct comprehensive data collection and analysis to assess the current state of food environments in transitioning economies. • Impact Assessment and Evaluation: Research organizations can evaluate the impact of various interventions and policies aimed at shaping food environments for sustainable and healthy diets. • Policy Analysis and Recommendations: Research organizations can provide evidence-based policy analysis and recommendations to support the development of strategies and policies related to food systems and nutrition. • Innovation and Technology Transfer: Research organizations can drive innovation and technology transfer in the agriculture and food sectors to promote sustainable and healthy diets.
Educational Institutions	<ul style="list-style-type: none"> • Taylor’s University (INFORMAS Malaysia Team and Malaysia Food Barometer) • University Kebangsaan Malaysia • University Putra Malaysia 	<ul style="list-style-type: none"> • Curriculum Development and Education: Educational institutions can develop curriculum materials and educational programs focused on sustainable agriculture, nutrition, and healthy eating habits. • Research and Innovation: Educational institutions can conduct research to generate new knowledge and innovations related to food systems and nutrition. • Community Outreach and Extension Services: Educational institutions can

		<p>engage with local communities through outreach programs and extension services to promote awareness about sustainable food systems and healthy diets.</p> <ul style="list-style-type: none"> • Capacity Building and Training: Educational institutions can provide capacity-building training and technical assistance to stakeholders involved in shaping food environments. • Policy Advocacy and Partnerships: Educational institutions can advocate for policies and initiatives that promote sustainable food environments and healthy diets.
Professional Organisations	<ul style="list-style-type: none"> • Nutrition Society of Malaysia • Malaysian Dietetics Association • Malaysian Association for Study on Obesity (MASO) 	<ul style="list-style-type: none"> • Expertise and Technical Guidance: Professional organizations can provide expertise and technical guidance on nutrition, dietetics, and obesity prevention strategies. • Public Awareness and Education: These organizations can engage in public awareness campaigns and educational initiatives to promote healthy eating habits and raise awareness about the importance of sustainable food environments. • Policy Advocacy and Collaboration: Professional organizations can advocate for policies and regulations that support sustainable and healthy food environments. • Professional Training and Development: These organizations can provide training and professional development opportunities for nutritionists, dietitians, and other healthcare professionals involved in promoting healthy diets and preventing obesity.
Civic Groups	<ul style="list-style-type: none"> • Malaysia Retailers Association • Federation of Malaysian Consumers Associations - (FOMCA). 	<ul style="list-style-type: none"> • Consumer Advocacy and Education: Civic groups can advocate for the rights of consumers to access affordable, safe, and nutritious food options.

		<ul style="list-style-type: none"> • Promotion of Sustainable Business Practices: Civic groups can work with retailers and businesses to promote sustainable practices within the food industry. • Community Engagement and Empowerment: Civic groups can engage with local communities to empower them to make healthier food choices and advocate for changes in their food environments. • Monitoring and Accountability: Civic groups can monitor the food industry and hold businesses accountable for their practices related to food production, labeling, and marketing. • Policy Advocacy and Collaboration: Civic groups can advocate for policies and regulations that support sustainable and healthy food environments at the local, national, and international levels.
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Source: Authors' compilation, 2023

3.4.2 Target Population and Location in Malaysia

The study will be conducted in the Federal Territory of Kuala Lumpur and Petaling (Figure 2), which are the two urban districts with the highest population density in Malaysia (Table 1). Over the five decades from 1970 to 2020, Malaysia has undergone rapid urbanisation from 28.4% to 75.1% (DOSM, 2023). Concurrently, the number of urban populations has increased from 3.0 million to 24.4 million (Figure 1). These areas were chosen due to their significant demographic concentration and representativeness of urban living conditions in the country. According to the Department of Statistics Malaysia, the proportion of urban population living in poverty in Malaysia is 11.9% (DOSM, 2023). In Malaysia, a unique scenario presents itself within urban areas. In this context, urban poor populations are scattered across the city, where varying housing costs coexist, ranging from high-end condominiums to low-cost flats, illustrating a diverse urban landscape. Notably, a considerable segment of the urban poor resides in affordable housing options and government-subsidized schemes, such as the People's Housing Programmes (PPR) (Figure 3). The absence of a specifically designated enclave for the urban poor underscores the complexities of poverty and its intersectionality with urban development in Malaysia. This juxtaposition of socioeconomic strata within the same geographic space underscores the need for a comprehensive understanding of food environments and their impact on diverse communities.

Table 8: Number of urban populations by district, 2010 - 2020

District	Number of urban populations	
	2010	2020
Petaling	1,765,495	2,298,130
Kuala Lumpur	1,588,750	1,982,112

Source: DOSM, 2022

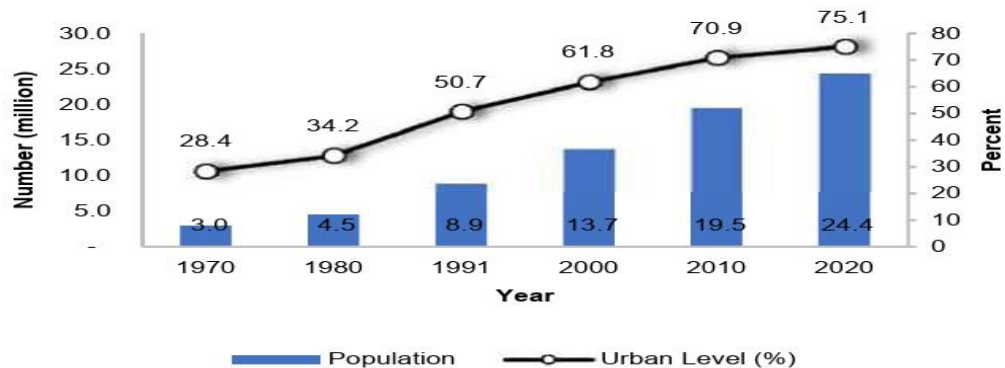


Figure 7: Level of urbanisation and population growth in Malaysia, 1970-2020

Source: DOSM, 2022

3.4.3 Study Area and Justification

Kuala Lumpur

The Federal Territory of Kuala Lumpur is the capital and largest city in Malaysia. Kuala Lumpur stands out as one of the most developed urban areas in Malaysia, boasting robust infrastructure and economic activities characteristic of a rapidly evolving metropolis. The population of Federal Territory of Kuala Lumpur consists of Citizens 1,773,666 (89.5%) and non-citizens 208,446 (10.5%) with the composition by ethnicity is Bumiputera 846,339 (47.7%), Chinese 737,161 (41.6%), Indians 178,099 (10.0 %) and Others 12,067 (0.7%) (DOSM, 2022). As the nation's capital, it serves as a hub for commerce, finance, and cultural exchange. However, beneath the veneer of modernity lies a multifaceted socioeconomic landscape marked by disparities in income and access to resources. The study area's diverse socioeconomic landscape, coupled with its status as a major urban centre, makes it an ideal setting for examining the complex interrelationships between food environments, economic transition, and public health.

Petaling District

The population of Petaling comprises of citizens 2,087,298 (90.8%) and non-citizens 210,832 (9.2%) with the composition by ethnicity is Bumiputera 1,096,926 (52.6%), Chinese 762,735 (36.5%), Indians 211,756 (10.1%) and Others 15,881 (0.8%) (DOSM, 2022). Petaling district is emblematic of Malaysia's rapid urbanization and economic transition. With its strategic location near Kuala Lumpur, the nation's capital, Petaling is a vibrant hub of economic activities, commercial enterprises, and cultural diversity. The district boasts a well-developed infrastructure, including modern transportation networks, commercial centres, and residential areas. The food environment in Petaling district is multifaceted, offering a spectrum of food sources ranging from

traditional markets and street vendors to supermarkets and fast-food outlets (MGCC, 2016). This diversity in food sources reflects the district's cultural richness and the evolving dietary preferences of its residents. Additionally, Petaling benefits from a well-connected transportation network, facilitating the distribution of food products and ensuring accessibility for residents across various socioeconomic strata. The convergence of economic transition, cultural diversity, and socioeconomic disparities within Petaling district presents a compelling landscape for studying the complexities of shaping food environments in transitioning economies.

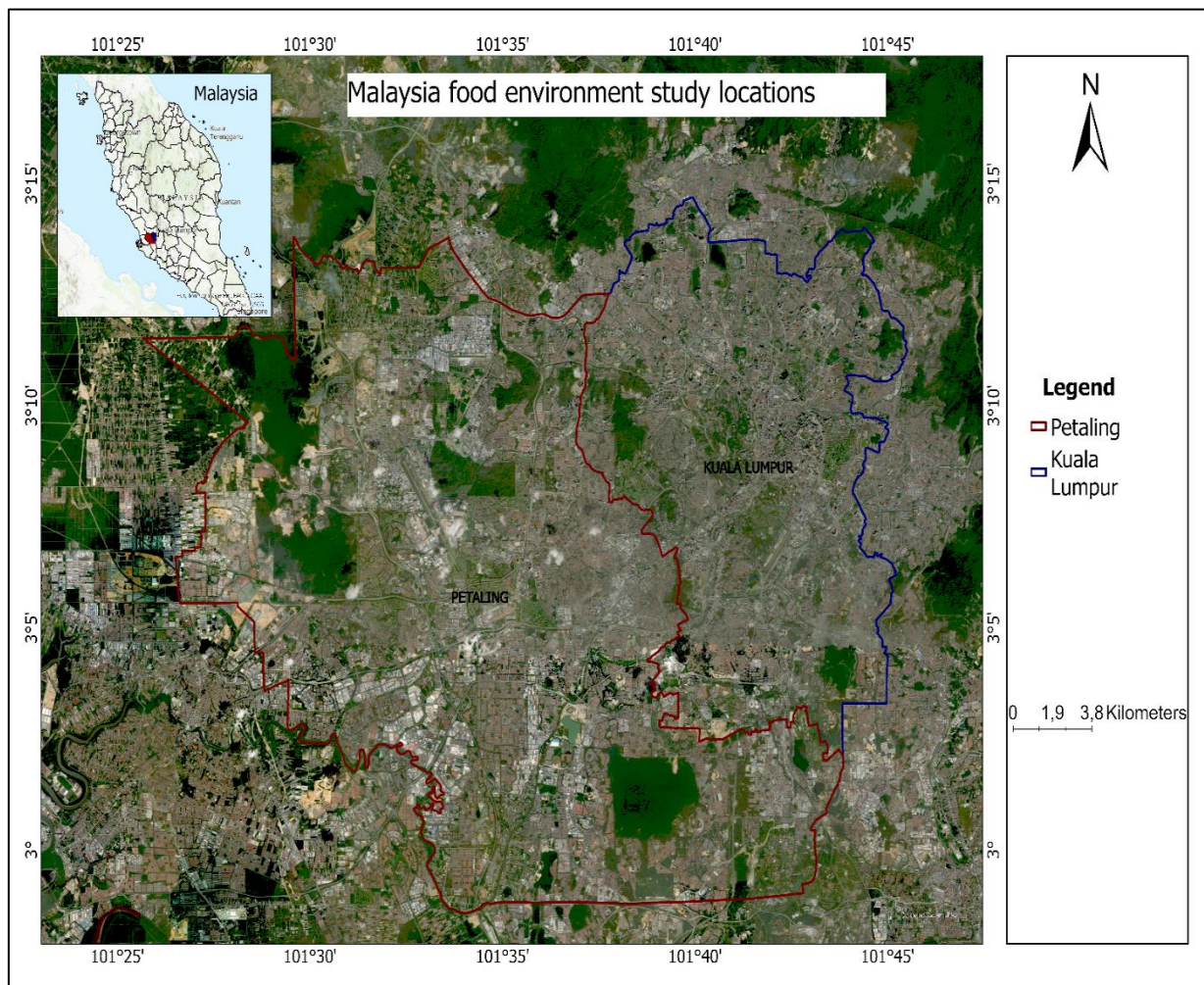


Figure 7: Malaysia study locations



Figure 8: (a) Low-cost apartment in Kuala Lumpur and (b) Corridors of a low-cost apartment in Kuala Lumpur. Photo taken by KRI (2023).

3.4.3 Sampling Procedure

Purposive sampling was employed to deliberately select the Petaling and Kuala Lumpur districts as our sampling locations in Malaysia, focusing on the urban poor. This decision was motivated by the presence of essential characteristics within these urban districts, including their diverse socio-economic demographics, extensive infrastructure, and significant population density. Additionally, these districts exhibit marked inequalities and poor service delivery, such as limited access to good quality housing, basic amenities, and documented individuals living below the poverty line income (Khazanah Research Institute, 2023). The sampling approach did not target a specific geographical area such as townships, informal settlements or municipal area because of the diverse Malaysian urban landscape. The Malaysian urban poor populations are scattered across the city, where varying housing costs coexist, ranging from high-end condominiums to low-cost flats. Stratified random sampling was employed to select the actual sampling low-cost housing and PPR buildings. Initially, each district was divided into four zones to ensure spatial representation. The adoption of this block system was guided by the rationale to uphold spatial representation during sampling, thereby mitigating the risk of oversampling or under-sampling specific sections of the two districts. Adhering to the first law of geography, which asserts that everything is related but proximity strengthens relationships, this approach facilitates a more comprehensive and balanced representation across the targeted districts. Majority of the urban poor in Malaysia are commonly found in government-subsidized housing schemes, such as the People's Housing Programmes (PPR). However, for inclusivity and representativeness, it's important to note that not all urban poor have access to PPR due to limited availability. Therefore, the study included two types of residential areas: low-cost housing and PPR government-subsidized housing scheme. These areas were selected due to their documented role in accommodating the urban poor, which constituted the target population for this research. The list of Public Housing (PPR) and low-cost housing residences in the two districts was obtained from the Brickz property website (<https://www.brickz.my/>). From the complied PPR and low-cost housing lists, random sampling

was used to select one PPR and low-cost housing residential area in each zone. In total, eight residential areas were selected in each district (Table 2).

Table 9: Selected Sampling Locations

1. Kuala Lumpur

Zone	Name of location
1	Flat Taman Intan Baiduri
	PPR Sri Aman Jinjang
2	Taman Koperasi Polis Fasa II
	PPR Seri Semarak
3	Pangsapuri Teratak Muhhibah
	PPR Pantai Ria
4	Kampung Bellamy Pudu
	PPR Seri Malaysia

2. Petaling

Zone	Name of location
1	Pangsapuri Seroja Setia Alam
	PPR Kampung Baru Hicom
2	Pangsapuri Sri Cempaka
	PPR Kota Damansara
3	Jalan Setia Gemilang U13
	PPR Lembah Subang
4	Pangsapuri Enggang, Bandar Kinrara
	Impian Baiduri Apartments

Source: Authors' compilation, 2023

3.4.4 Sample Size Determination

The determination of the required sample size to be included in a research study to represent the urban poor population is determined by using a cross-sectional study formula to obtain the actual sample size.

Formula for cross-sectional studies $n = \frac{Z^2 * p(1-p)}{E^2}$

Whereby

n = Require sample size

Z = Z – score corresponding to the desired confidence level (1.96)

P = Estimated proportion of relative poverty in urban area (11.9%)

E = Margin of error (0.03)

Calculation

$$n = \frac{(1.96)^2 * 0.119(1-0.119)}{(0.03)^2}$$

$$n = \frac{3.8416 * 0.1048}{0.0009}$$

$$n = 447.33$$

$$n \approx 448$$

A sample size of 448 respondents is needed to represent the proportion of urban poor in Malaysia to achieve a 95% confidence interval and margin of error of 3. Assuming a non-response of 10% of the estimated sample of 448, the sample size will be adjusted upward and rounded to 500 households. The 500 samples will be proportionally divided between the Kuala Lumpur and Petaling Districts. Figure 4 shows the sampling procedure workflow.

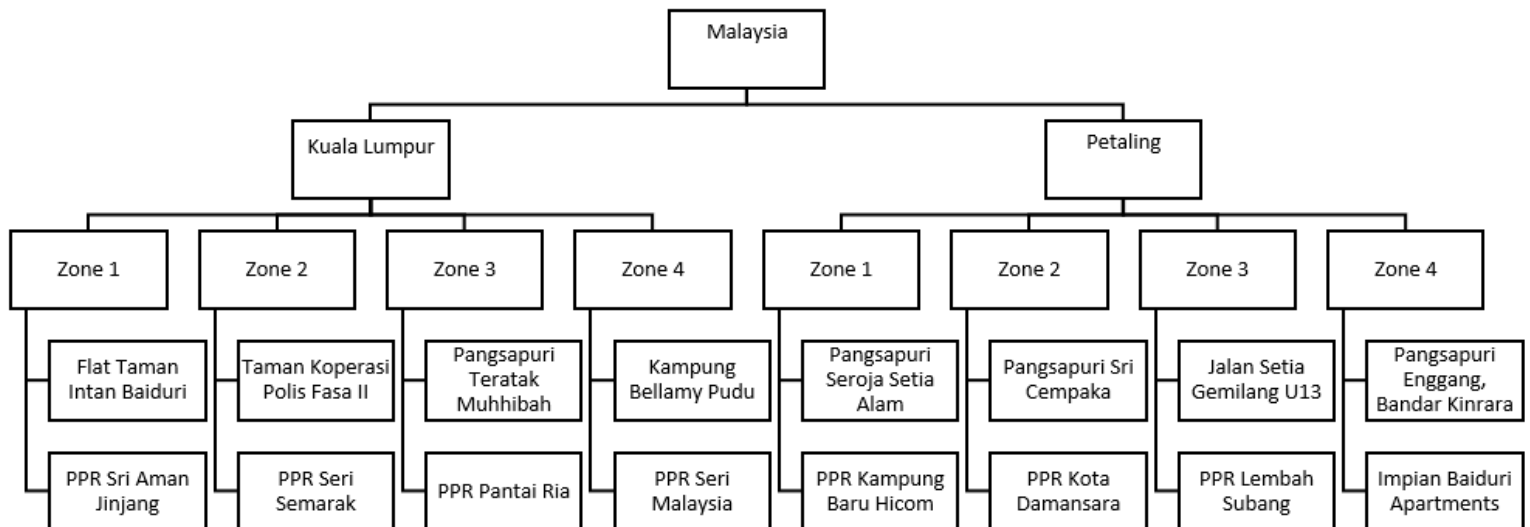


Figure 9: A schematic diagram showing the sampling procedure for the two districts of Kuala Lumpur and Petaling

Source: Authors' depiction, 2023

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