

# Preparation of a Sustainable Economic Development Investment Program for the Cities of Tanga and Mwanza

## Pre-Feasibility Assessment

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### Final Summary Report

Version 2

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## Document Control

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## List of abbreviations

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AFD	French Development Agency
BMU	Beach Management Unit
BoQ	Bill of Quantities
CBD	central business district
CICLIA	Cities and Climate in Africa Facility
DED	Detailed Engineering Designs
DRC	Democratic Republic of Congo
ENABEL	Belgian Development Agency
E&S	environmental and social
ESG	Environment, Social, and Governance
FS	Feasibility Study
GDP	Gross Domestic Product
GIZ	German Agency for International Cooperation
GoT	Government of Tanzania
HGV	heavy goods vehicle
IMC	Ilemela Municipal Council
MCC	Mwanza City Council
MoF	Ministry of Finance and Planning
MT	metric ton (1,000 kilograms)
NDMC	National Debt Management Committee
PFA	Pre-Feasibility Assessment
SDGs	Sustainable Development Goals
SECO	Swiss Cooperation
SME	small and medium-sized enterprises
SWM	solid waste management
TA	Technical Assistance
TACTIC	Tanzania Cities Transforming Infrastructure and Competitiveness
TCC	Tanga City Council
TDMC	Technical Debt Management Committee
TEI	Team Europe Initiative
ToC	Theory of Change
TOR	Terms of Reference
TTL	Task Team Leader
VFM	Value for Money
WASH	water, sanitation and hygiene

# 1 Introduction

## 1.1 Project background

The main objective of this assignment is to carry out a Pre-Feasibility Assessment (PFA) to inform the design of a sustainable development program for the cities of Tanga and Mwanza as part the first phase of Team Europe Initiative (TEI) Green and Smart Cities SASA<sup>1</sup> Program for Tanzania. Funded under the Cities and Climate in Africa (CICLIA) Facility, the PFA identifies opportunities for public investments aimed at supporting sustainable urban food systems through improved economic and trade-related infrastructure in the target cities. Further funding and Technical Assistance (TA) support shall be made available through AFD and the Delegation of the European Union to Tanzania (see Figure 1).

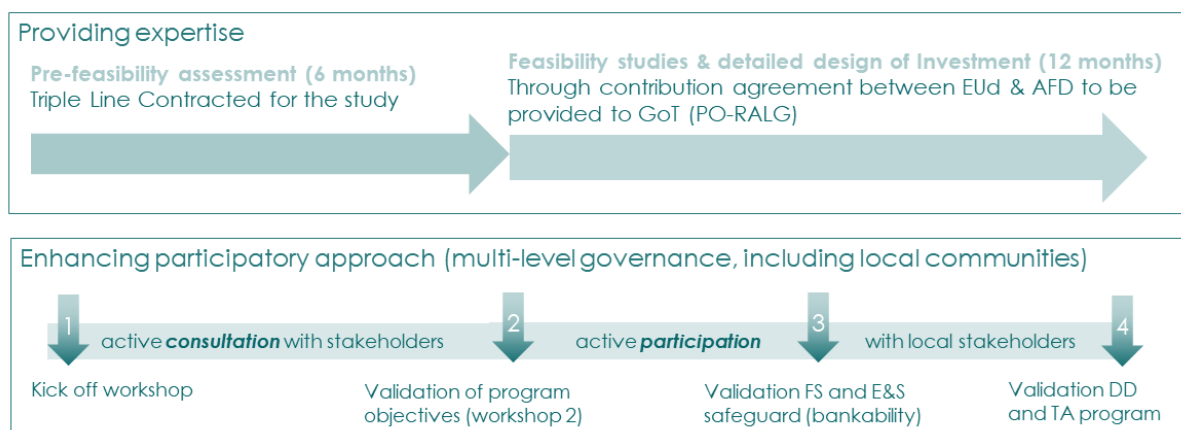


Figure 1: Roadmap for project preparatory support.

The cities of Mwanza and Tanga are heavily reliant on agriculture and food crops for employment and income generating activities (cities and related councils shown in Figure 2). Both cities are important in Tanzania’s urban system and play a key role in enhancing regional economic development as active trading centers for domestic and international produce. However, Mwanza and Tanga face challenges regarding the planning, design, financing and operation of trading systems and supply chain infrastructure. In addition, climate change and environmental degradation are growing into persistent challenges which threaten to undermine the opportunities for sustainable economic development and growth. The PFA of the proposed program highlights opportunities for supply chain enhancements to improve market function for key food-related value chains.

The PFA’s activities fall into four key components as shown in Figure 3. The PFA builds on a detailed diagnosis of food value chains and trade systems that has been carried in each city under this assignment (Components 1 and 2). The PFA then provides an assessment of the strategic relevance, implementation readiness and development impact of sub-projects identified by the target councils to deliver against strengthening urban food systems (Component 3).

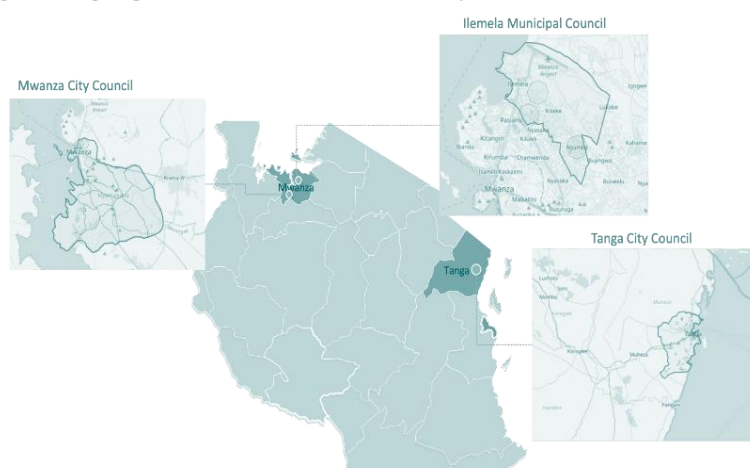


Figure 2: Target city councils

<sup>1</sup> Meaning NOW in Swahili.

The key findings and recommendations of the PFA were presented, discussed and validated in a series of workshops with Mwanza City Council (MCC), Ilemela Municipal Council (IMC), and Tanga City Council (TCC) in January 2023. A national Co-Creation Technical Workshop was held in Dodoma in February 2023 with national and local partners to validate the deliverables and design the next Project Preparation Phase for developing ready to finance investment projects, and for enhancing its sustainability through TA support.

The PFA process informed the development of a preliminary overall program Logical Framework and a Work Plan for the implementation of identified program preparatory activities and future investments for each council area (Component 4). This Final Summary Report (Closure Report) marks the completion of the fourth and final phase of the assignment for submission to the National Authority (President's Office–Regional Administration and Local Government (PO-RALG)) for onward submission and registration with the National Planning Commission of the Ministry of Finance and Planning (MoFP).

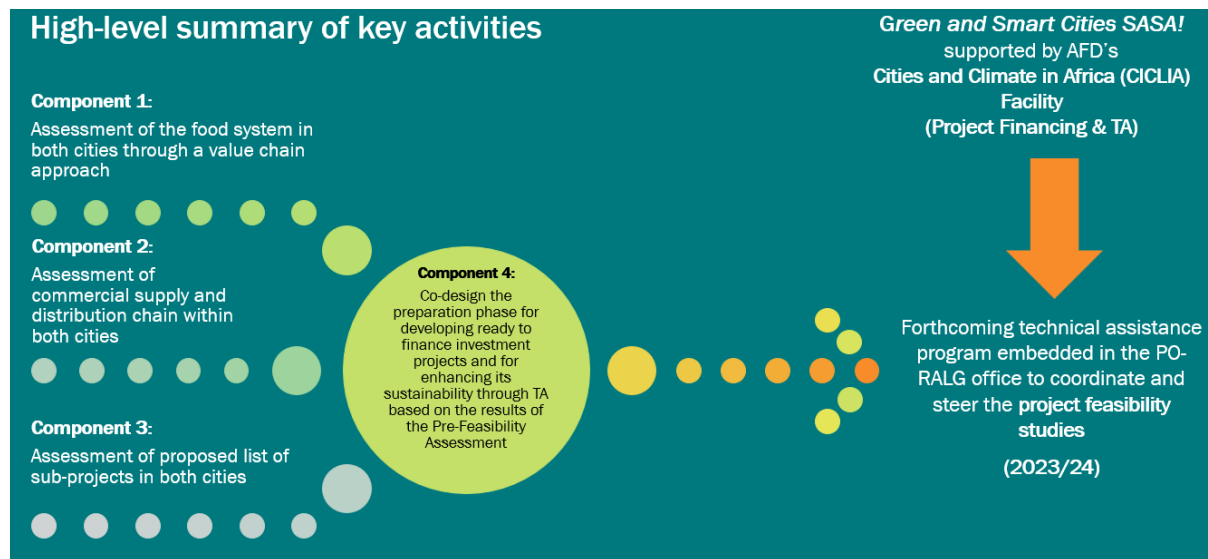


Figure 3: High level summary of key activities carried out under the PFA.

## 1.2 Stakeholders

The ethos of this project is one in which Tanzanian authorities work in close partnership with the AFD, EU and the Triple Line Consulting team. The AFD, EU and consulting teams worked closely with national and city authorities to steer, coordinate, co-produce, and validate findings of this PFA. Beyond the city councils and other local and national government entities working on the project, there were numerous other partners who the consulting team engaged during project execution including TEI Member States (ENABEL and GIZ) and the World Bank under their new urban development project called Tanzania Cities Transforming Infrastructure and Competitiveness (TACTIC).

For the program preparatory activities and implementation of the investments in the three city councils, each of these stakeholders will continue to play an important role. AFD with support from the EU will be responsible for overall co-ordination and implementation in a phased manner. The city councils along with PO-RALG will provide continuous feedback on project design and implementation work, including stakeholder engagement, provision of land, approval of environmental and social impact assessments, implementation arrangements, management and operations models, and rules and regulations to be followed by direct users and other relevant stakeholders.

Moreover, the local communities and wider city beneficiaries of the proposed projects will need to be meaningfully consulted with to ensure that the detailed project design, proposed management and operation models, and other features of the projects are in alignment with their needs. These beneficiaries include direct users such as fishermen, traders, processors (as per each value chain), co-operatives, beach management units, transporters and among others and indirect users such as the households, middle men, exporters, logistics service providers, and other types of buyers and consumers of food products.

The figure below is a stakeholder mapping segmented to various stakeholder groups according to their interests and influence.

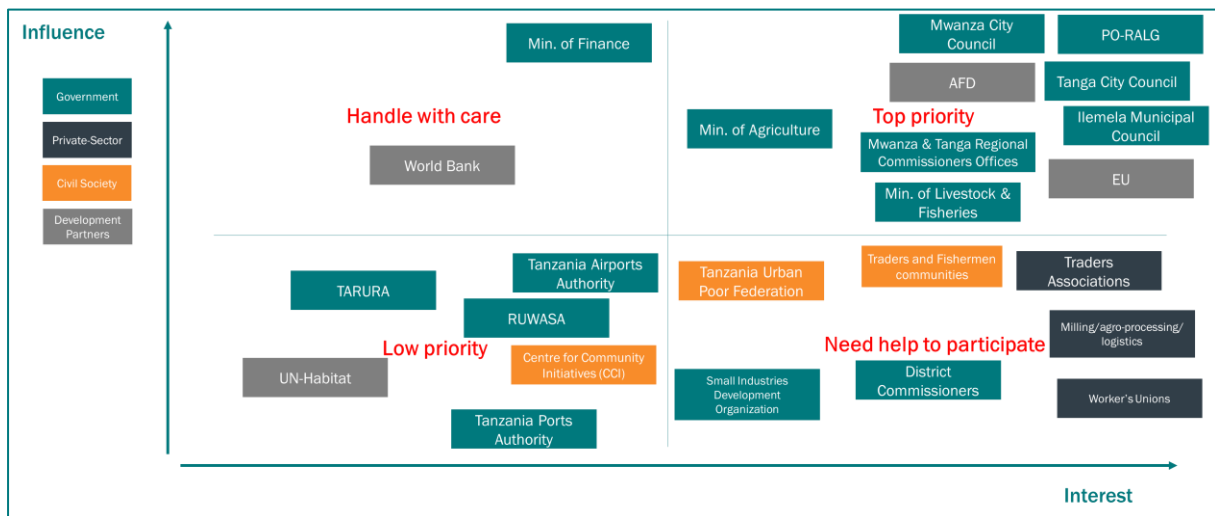


Figure 4: Stakeholder mapping.

### 1.3 Report structure

The Final Summary Report is divided into the following four main sections:

- 1. Trade System and Food Value Chain Assessment: Summary of Key Findings.** Provides a brief and concise snapshot of the food value chains and trade systems in Mwanza and Tanga.
- 2. Pre-Feasibility Assessment of Projects Proposed for Mwanza and Tanga.** The pre-feasibility assessment builds on the value-chain analysis and trade systems assessment to arrive at a shortlist of potential projects for each council that would deliver on sustainable urban development objectives, framed by an understanding of the importance of urban food systems.
- 3. Preliminary Program Logical Framework.** This section presents a preliminary logical framework aimed at clarifying the specific objectives of the program. Specific attention is on the expected outcomes of the investment program targeting the trade and food system in the two cities.
- 4. Program Preparatory Work Plan.** This section outlines the method for preparing the projects to a form suitable for financing and provides a GANTT chart that visualizes the program schedule and key program preparatory activities.

A number of annexes provide additional key information.

## 2 Trade System and Food Value Chain Assessment: Summary of Key Findings

### 2.1 The Big Picture: Cities and Food Systems

Mwanza Region is the second largest contributor to Tanzania's GDP after Dar es Salaam. As per 2020 estimates, the region's GDP was US\$4.7 billion with a population of around 3.6 million persons. This translates to an annual per capita income of US\$1,262 or US\$3.45 per day. Much of the GDP is contributed by Mwanza City through its approximately 375,000 labor force (15+ years) engaged in trade and commerce (mainly food trade), followed by light manufacturing (wine processing, cotton and edible oil production).

Tanga Region with a GDP of US\$3 billion in 2020 and a population of about 2.5 million persons has a per capita income of US\$1,460. Again, much of this income is through industrial earnings (sisal processing and exports, cashew exports, coconut processing, cement and dairy industries) and from operations at Port of Tanga, with trade related activities dominated in Tanga City.

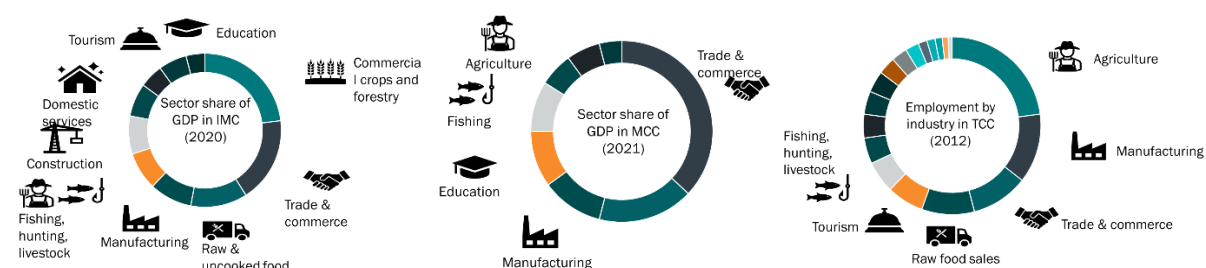


Figure 5: Sector share of GDP in IMC and MCC and employment by industry in TCC.

#### Tanga and Mwanza are increasing reliant on food supplied from other districts and regions of the country with very limited value-addition in most food-related sectors.

Mwanza and Tanga regions produce food in abundance but as the districts in which the two cities are located urbanize, opportunities for producing food are declining where there is less land available to cultivate food and raise livestock.<sup>2</sup> A greater proportion of the food required must be imported, and opportunities for local production are reducing, making residents more reliant on jobs and incomes earned in other sectors to purchase food. Yet, some households continue to practice urban farming, farming on smaller areas of land, mainly producing all year-round products such as fruits and vegetables.

Most stakeholders across the food value chains in Mwanza and Tanga earn annual incomes close to the international extreme poverty line. There is limited or no value-addition in many sectors, which reduces potential for these actors to earn higher incomes. Women headed households and persons with disabilities are most affected by this.

Although food supply chains provide jobs for wholesalers and traders, transportation costs increase as supply chains become longer and more complex, and as a result the end price of food to the consumer also increases. Where infrastructure and transport and distribution systems are unreliable, food losses can occur, particularly where it takes excessively long-times for food to reach wholesalers, traders and consumers in the cities as well for highly perishable items such as fruits and vegetables. These losses are more pronounced during bad weather where roads often become impassable due to heavy rain or surface water flooding. Transportation costs of food items in Tanga and Mwanza often constitute up to 30% of the wholesale price according to our research.

<sup>2</sup> The Five Year Strategic Plans (2021/22-2025/26) for both MCC and IMC indicate that growing populations have led to an increase in urban settlements and hence reduction in area of land available per household for agriculture production.



There have been attempts to improve trading infrastructure to address food systems in the two cities. For instance, the World Bank’s TACTIC has sought to support city councils across Tanzania to improve municipal and food-related infrastructure. Nonetheless, there remain some critical gaps and challenges. Given the expected growth in urban population, there needs to be a further emphasis on improving accessibility to affordable and nutritious food for residents and creating employment opportunities (other than the wholesale-retail services) such as agro-processing and light manufacturing.

## 2.2 Mwanza City

### 2.2.1 Strategic context

#### Urbanization drivers

Mwanza City is the capital of Mwanza Region and the second largest city in Tanzania by population, with an estimated population of about 850,000 persons<sup>3</sup>. Mwanza is a regional hub – commercial center for many of the surrounding rural districts. It is located on the shores of Lake Victoria and occupies a very strategic position with transport connections by road, rail, sea and air to other regions of Tanzania, Uganda, and Kenya. Although the city itself is hosted by two councils, MCC and IMC, economically the city functions as one, sharing major trunk infrastructure and transport nodes.

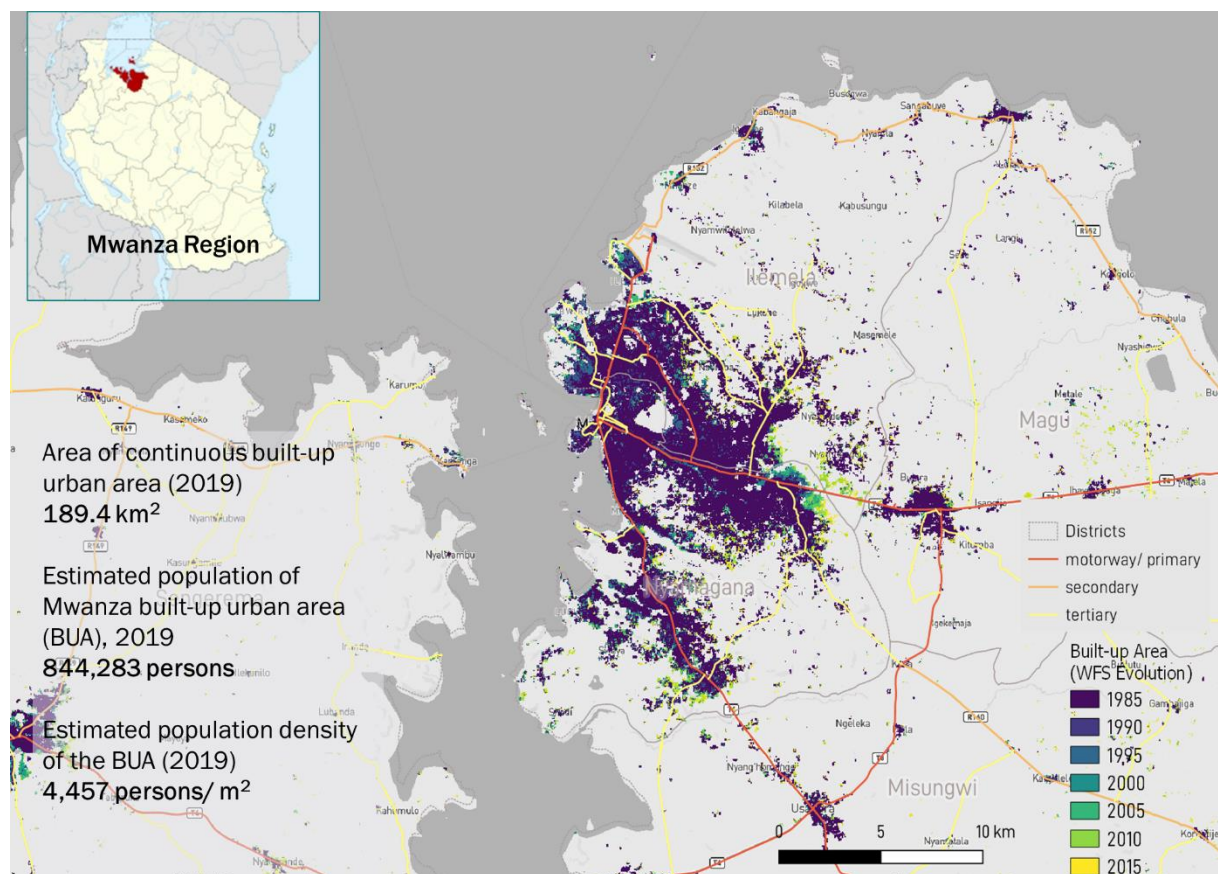


Figure 6: Mwanza City urban change process.

Source: Triple Line estimates derived from the built-up area of the city defined by the World Bank (2019) and population modelling provided by WorldPop (2020).

<sup>3</sup> Triple Line estimates derived from the built-up area of the city defined by the World Bank (2019) and population modelling provided by WorldPop (2020). Official statistics are somewhat old, the last published census was 2012. The recent 2022 census as yet to have been published at district level.

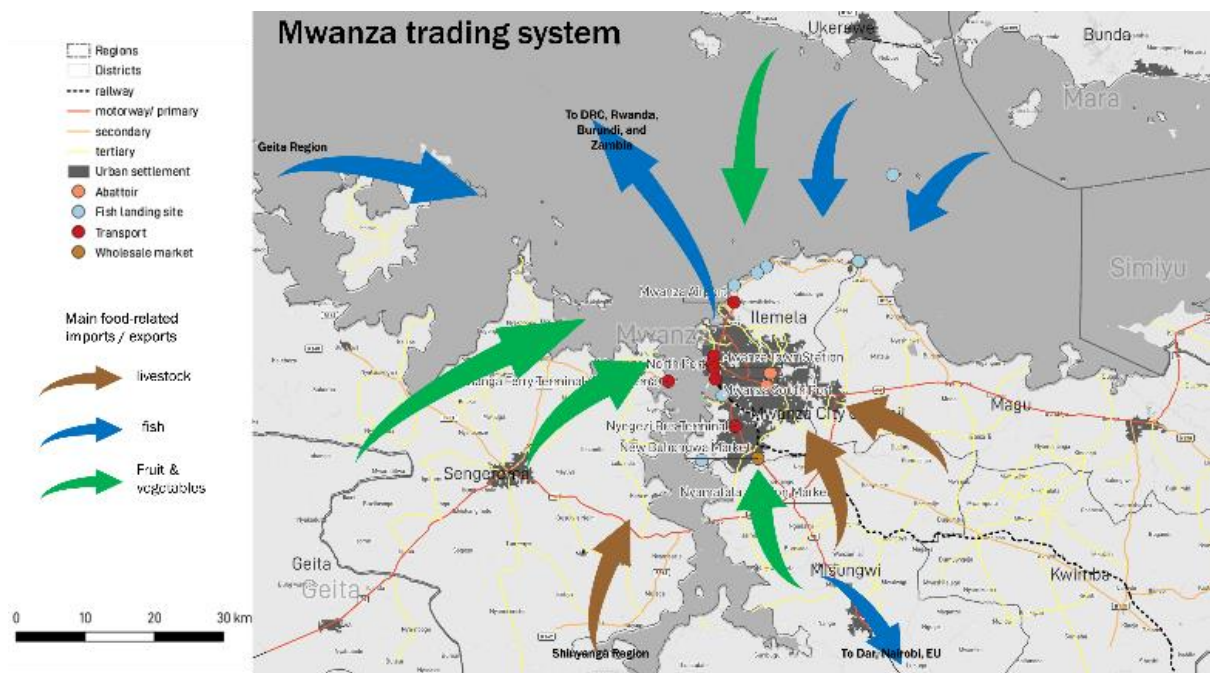


Figure 7: Mwanza trading system: a regional perspective.

The city exhibits a sprawling form in part due to topographical constraints with steep hillsides meaning development has spread outwards from the coast and along major transport routes, with informal settlements growing along the hillsides. MCC, covering the Nyamaghana area, is more densely populated, in large part due to its topography with many more hills and steep sided valleys than neighboring IMC and therefore less land that is easily available for urban development. MCC area hosts the central business district (CBD) of Mwanza City; IMC area by contrast is larger district in area<sup>4</sup> and has lower population density throughout and many smaller villages, which are still distinct from the main urban conurbation.

### Economy and trade

The city itself represents the largest consumer market in the Lake Victoria region. However, around 35% of households in the region live in poverty with most households falling in the lower-middle or low-income category.

Key industries in Mwanza are fish processing, edible oil processing, cotton and light garment manufacturing. Around 32% of the city's population is employed in trade and commerce, 18% in agriculture and 5% in fishing. Women mainly trade fresh produce items such as fruits, vegetables and fish, while men are employed in trade of consumer products procured from Dar es Salaam, such as clothes, and secondhand electronics, among others. Fish production is declining: dagaa production in MCC's landing sites has fallen at 0.6% per annum on average since 2005, while Nile Perch production in IMC's landing sites have fallen by 0.98% on average each year between 2016 and 2021. As a result, several households are moving away from fisheries to other sectors, especially the youth, who are migrating into urban areas and looking for jobs.

### Vulnerability to climate change

Climate change is already decreasing total precipitation levels in the Mwanza Region, with a shift in the rainy season and increase in the number of droughts. While some crops are potentially expected to increase in yields, greater variability in rainfall and higher temperatures will negatively affect horticultural crop yields and post-harvest losses.

<sup>4</sup> IMC is nearly 3-times larger in area than MCC, although much of this area is Lake Victoria. However, the land allocation is approximately the same in both councils at about 250 km<sup>2</sup>.

Traditional varieties of horticultural crops are more susceptible to a changing climate, insect attacks and diseases without applying climate smart agricultural methods such as intercropping and more resilient seeds and varieties. Millet, sorghum, rice, groundnuts and cassava are expected to increase in yield due to the CO2 fertilization effect but unreliable rains will continue to negatively impact yields. Post-harvest management and losses are affected by increased frequency and intensity of extreme weather events, affecting moisture levels and outbreak of crop pests, diseases and bio-deterioration, for example mycotoxin contamination.

Deep-water oxygen loss of Lake Victoria from eutrophication is contributing to decimation of fish stocks, while changing temperatures and seasons already reported to be affecting fish breeding grounds and patterns. Continued environmental degradation of Lake Victoria as a result of discharge of industrial and agricultural effluent and sewerage puts additional pressure on fish stocks.

With regards to disaster risks, Mwanza City is rated as low for river flood and very low for urban flood risk, but flash flooding is more common especially downstream of Mirongo River near the city center area. Gently undulating topography with steep hill slopes occupied by informal settlements make them vulnerable to landslides. Food supply and distribution chains are often disrupted by extreme weather events as the road network is particularly vulnerable where all-weather surfacing and drainage is not present.

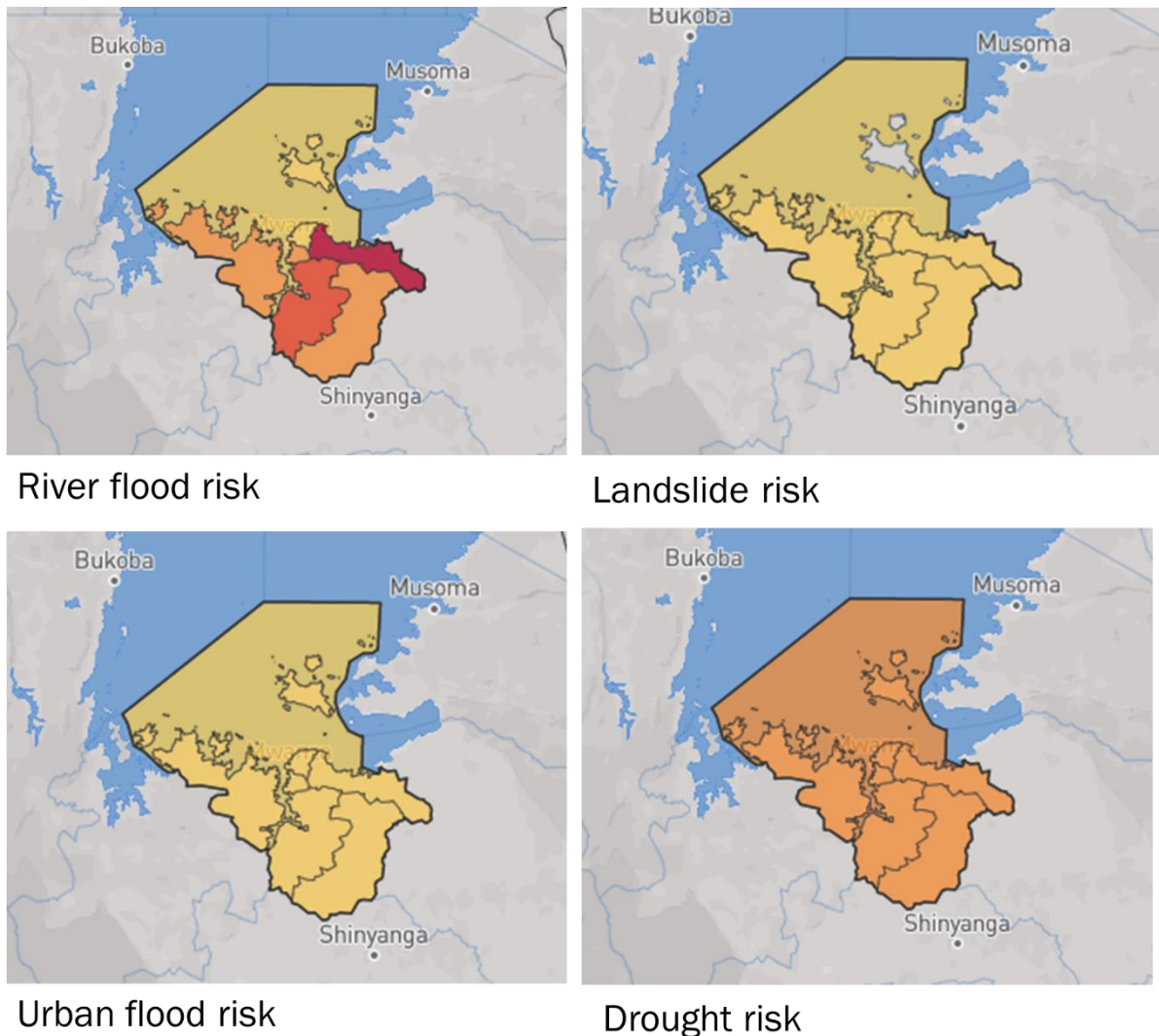


Figure 8: Severity of climate hazards across Mwanza Region. Source: *ThinkHazard!* (World Bank)

Disclaimer: The hazard levels and guidance given in *ThinkHazard!* and do not replace the need for further detailed natural hazard risk analysis.

## 2.2.2 Overview of Mwanza's food system

### Declining production of commercial crops of grains and horticulture items and increased dependence on procurement of items from other parts of Tanzania

Official data from the city councils shows a decline in commercial production of fruits, vegetables, grains and tubers between 2015 and 2021. However, fresh produce is grown throughout Mwanza, largely characterized by urban and peri-urban agriculture. Vegetable and fruit production on plots of less than half acre in size is commonly practiced (including cabbages, spinach, amaranth leaves, tomatoes, onions, carrots, avocados, peppers and watermelons). Where space allows many households plant fruit trees for their own consumption, selling any excess for additional incomes. Cassava, maize, rice, and other cereals and tubers are not produced in large quantities – only a few farmers produce these, and the volumes are declining. Most of these items are sourced from other districts of Tanzania such as Misungwi, Bukoba, and Magu, among others. As such Mwanza's food system is heavily reliant on its supply and distribution chains as its own production sites.

**Table 1: Snapshot of food production across the city of Mwanza**

Key Crops	Production in Mwanza Region (in MT)	Production in Mainland Tanzania (in MT)	Proportion of volume produced in Mwanza Region
Maize	220,000	6,536,322	3.37%
Rice	330,000	3,443,606	9.98%
Sorghum	25,000	650,500	3.84%
Cassava	110,000	1,770,608	6.21%
Sweet potatoes	90,000	504,302	17.85% (largest producer)
Beans	18,000	661,699	2.72%

Source: Select data received from IMC and MCC Agriculture and Fisheries Departments; consultations with city officials. ProAgriculture Census 2019-20. National Bureau of Statistics of Tanzania. Function data for all items was not available and therefore represents a snapshot of food production.

### Mixed trends in fish production and processing

As per data received from Ilemela Municipal Council, production of sardines has increased by 16% between 2016 and 2021. However, not all the fish is harvested in the city. Fishermen and traders from islands in Lake Victoria and from other landing sites in Geita, transport dried sardines to Mwaloni Market – the largest fish trading center which has led to rapid increase in fish production. However, fish harvest is reported to be declining marginally at key landing sites in Mwanza mainly due to: (1) environmental issues/climate change and pollution; (2) overfishing in a smaller radius of the lake using artisanal methods; and (3) increase in number of fishermen.

**Meat (beef), fisheries (domestic and export), and grains and horticulture were selected as the key sectors of focus in Mwanza.**

Mwanza Region does not have a comparative advantage in any specific food product, other than sweet potatoes and fisheries. As a result, the region depends on food from other parts of Tanzania. The figure below indicates the small volumes produced in the region.

Criteria	Horticulture		Fisheries		Meat
	Grains, Roots & Tubers	Fruits & Vegetables	Sardines (Domes)	Nile Perch (Exports)	
Production (in 2020)	579 MT (Mwanza); 800 MT (Ilemela)	177 MT (Mwanza); >1,000 MT (Ilemela)	28,000 MT (20,000 MT at Mwaloni Market)	>1,048 in number	7,609 MT (of which beef is 99%)
Growth rate (2015-21)	-21% (Ilemela)	-15.96% (Mwanza)	15.68% (mainly due to fish traded at Mwaloni Market)	-0.98%	1.4% (beef)
Dependence on imports from outside city	High ~US\$20M annual sales through key trading markets	High	Low – Medium: fish procured from islands in Lake Victoria and other landing sites in Geita Region	Low	High (cattle and pigs)
Exports	None	None	Low (mainly to regional markets – DRC, Rwanda, Burundi)	High (>90% exported to EU)	None
Extent of value addition	Maize milling Rice milling (small quantities)	Wine processing	Sun-drying (predominant) Frying	Exported as whole fish (frozen) as well as fillets (frozen)	Slaughtering into meat
Employment	Few commercial farmers, but subsistence and urban agriculture supports Buhongwa – ~4,000 traders Central Market – 1,000 traders Space for c.11,000 traders across the city's many retail markets Thousands of informal retailers		> 6,000 fishermen plus thousands of traders and wholesalers	~1,500 fishermen (Old Igombe Landing Site)	Cattle farmer-traders – 2,455 Pig farmer-traders – 458 Feed suppliers – 108 Butchers (only cattle) – 186 Total – ~3,207
Constraints in existing trading systems	Three key markets (Buhongwa, Mirongo & Central Market) + other informal retail markets (such as Igoma) – old infrastructure, no rehabilitation works carried out		Poor infrastructure at landing sites, high post-harvest losses, limited value-addition – simple processing only, overfishing/ pressure on stocks	Lack of cold storage or ice making plants at landing sites, changing temperatures make it difficult for fishermen to catch fish	Potential of existing abattoir is not fully exploited; lacks modern equipment and waste management system
Priorities of city authorities	Mwanza City Council constructing Central Market, Rehabilitation of Buhongwa, Nyegezi and Mkuyuni markets		Mwaloni Market, New Igombe and Mkuyuni are key landing govt. priority for rehabilitation		Nyakato Abattoir has been rehabilitated – fencing, modern equipment, cold storage is pending
Initial identification of opportunities for AFD support	Buhongwa Market		Mwaloni Market, New & Old Igombe Landing Sites, Mkuyuni Landing Site		Completion of works at Nyakato and redevelopment of Nyamatala livestock auction market in Misungwi district

Figure 9: Assessment of key food value chains.

### Fisheries sector

There are 19 landing sites in Mwanza City harvesting about 28,000 MT of fish annually. Of these, Mwaloni is both a significant landing site and regional trading hub – employing thousands of people and supplying fish to the city for local consumption. After Mwaloni, significant landing sites include New and Old Igombe (in IMC area) employing the greatest numbers of fishermen who land dagaa and Nile Perch.

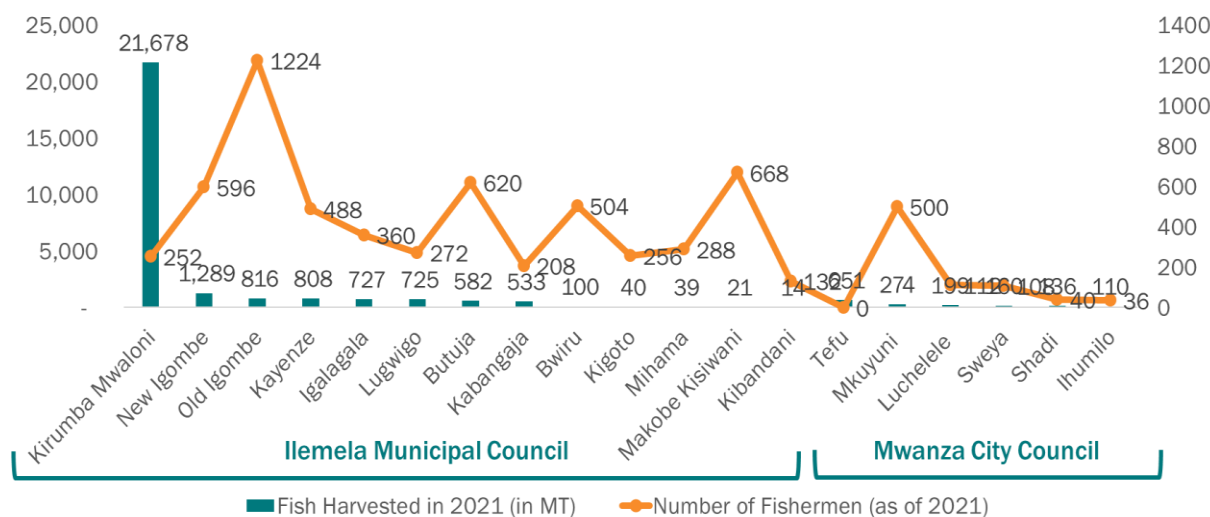


Figure 10: Fish production in 2021 (MT) and number of fishermen in each landing site.

### Meat

There are no large livestock farms in the city, animals are procured from surrounding districts and brought to the main slaughterhouse in Nyakato by independent traders. Livestock traders are among the highest income earners in food value chains studied in Mwanza. Their business model depends on significant initial cash outflow to generate high margins. The Nyakato Abattoir provides an opportunity for such traders, and it is the only regulated slaughterhouse in Mwanza owned and operated by the City Council.

## Horticulture

Urban and peri-urban agriculture is prevalent across Mwanza in both MCC and IMC areas. IMC has over 5,256 ha of land under agriculture production (50.4% of all IMC land), with between 7,000 and 8,000 registered smallholder farmers. MCC has over 54.3 sq km of land under agriculture production (28.9% of all MCC land), with between 2,500 and 3,000 registered smallholder farmers. Main crops are maize, paddy/rice and vegetables.

Most urban farmers are active in non-farm income generation activities including petty trading, fabrication, handcrafts and fisheries. Urban farmers have a price advantage over the farmers/traders who bring produce from away from the city because of lower transport costs with better road network in most areas of the city; even the gravel roads are passable throughout the year. The main challenge for urban farmers is access to finance. Most farmers rely on their own savings and lending groups (largely informal).

### **2.2.3 Overview of Mwanza's trade system**

For a city of over 800,000 people and regional trade hub, the formal trade system infrastructure is relatively well developed and extensive. The city has two marine ports (north and south) that connect it with other regions in Tanzania, Uganda, and Kenya. Additionally, ferry terminals provide access to the city's markets for consumers and traders located in the Sengerema Region just across the Mwanza Gulf at Kamanga.

Mwanza City (IMC and MCC combined) area has 29 key markets. These range in sizes and market segments. The main wholesale markets in Mwanza are the Central Market (currently being renovated) and Buhongwa Market (Old and New), both located in MCC area, but feeding, smaller retail markets in both districts. There are 26 smaller markets across the city, 13 in Mwanza City Council area and 13 in Illemela. A handful of these are not in operation.

The fisheries sector has a number of dedicated markets and auction sites, many of which are located at the fish landing sites from which the many artisanal fishermen operate from. The largest market, Mwaloni Market, is located in IMC area and is the largest fish market in the Mwanza Region.

There are 19 fish landing sites in Mwanza City of which 14 are in IMC and remainder 5 in MCC. New and Old Igombe are the largest in terms of production. The New Igombe landing site harvests dagaa/tilapia while the Old Igombe harvests Nile Perch (for exports). Mkuyuni landing site in MCC area is the most important within the MCC area. Many other smaller landing sites are located more than 20 kilometers from the city, some located on islands in Lake Victoria. Fish are also landed on the many islands in Lake Victoria proximate to the city and are transported mainly to Mwaloni Market for trade.

The city's main abattoir is located on the outskirts of the city at Nyakato where meat (mainly beef of about 7,000 MT per annum) is processed for the entire city, before being distributed out to independent butchers, some of which operate from the formal markets. Meat is sourced from across the wider region, arriving from elsewhere in Mwanza Region (Misasi, Misungwi, Ngudu, Kwimb districts) as well as Kishapu and Shinyanga Regions. While the government has made efforts to formalize meat processing and distribution supply chain, there are still concerns around informal processing by households in which cold chain and other quality and hygiene measures are not adopted.

### **Logistics and distribution**

Food distribution and logistics is highly informal comprised of many fragmented supply chains with each individual trader having his/her own channel for procurement of items and selling these in informal retail markets which cater to nearby households. Traders hire their own transport service or may have invested in a vehicle. More often the traders are not the transporters.

The markets are all found within the city and connected via a largely all-weather road network. Fish landing sites are in most cases located more than five kilometers from the city and last-mile access is often via unsealed roads – the exception being the MCC landing sites. Goods are moved around the city by road, through a combination of heavy goods vehicles (HGVs; 7-ton trucks), vans and utility vehicles, Bajaj (three-wheelers), and in some cases buses and cycles. There are no dedicated truck parking facilities found throughout the city, although the bus station at Illemela which has recently been redeveloped, has land allocated for truck parking though this has not been operationalized.

Transport interchanges around the ports and ferries are heavily congested as vessels dock and are being loaded/unloaded. The North and South terminals receive goods in both packed onto vehicles and loaded on in crates, the latter being collected from the port by smaller vans and trucks and transported to the markets for wholesale and retail. Traders may also use handcarts, cycles, and motorbikes to transport produce between the wholesale markets and smaller retail markets, or directly to the retail markets from the ports and ferry terminals. No commercial produce is moved by air or rail currently, though a cargo terminal has been constructed at the airport, located within Illemela. This has yet to be operationalized.

### Role of markets, coordination and linkages

New Buhongwa is the key wholesale market that feeds the smaller, retail markets across the city is located in MCC (see Figure 11). A number of semi-wholesale markets, those that perform both wholesale and retail functions, also exist in both districts. Some of these specialize in the wholesale of particular produce i.e., green bananas at Kiloleli. Retail markets can be broadly split into two categories, 'district' markets that are larger, sell a wider range of produce and attract consumers from across the city; and local retail markets, smaller in size and selling mainly fresh produce (fruit, vegetables, meat and fish). That said, there is no rigid hierarchy (see Figure 12), with produce flowing from wholesale to retail markets, though also farmers selling directly to retail markets, and even some wholesale trade taking place at the Ports on Lake Victoria where produce arrives from other regions of Tanzania.

### Accessibility and connectivity

Around 370,000 people (41.3%) of the population of the urban area of Mwanza live within 1km of a market. There are large gaps in access, particularly for many of the faster growing neighborhoods to the southeast of the CBD; and on the northeastern edge of the urban area in Illemela district. In reality, informal traders will have closed the gap between demand for goods and the provision of formal marketplaces in these urban expansion areas. In all but a few cases, markets are located on or close to main roads, which provides easy access for motorized and non-motorized transport. That said, transport interchange, particularly around the larger markets – Old Buhongwa, Machinjioni, is not well organized, and often compromised by the overspill of traders who move onto and along main roads to gain better access to passing trade.

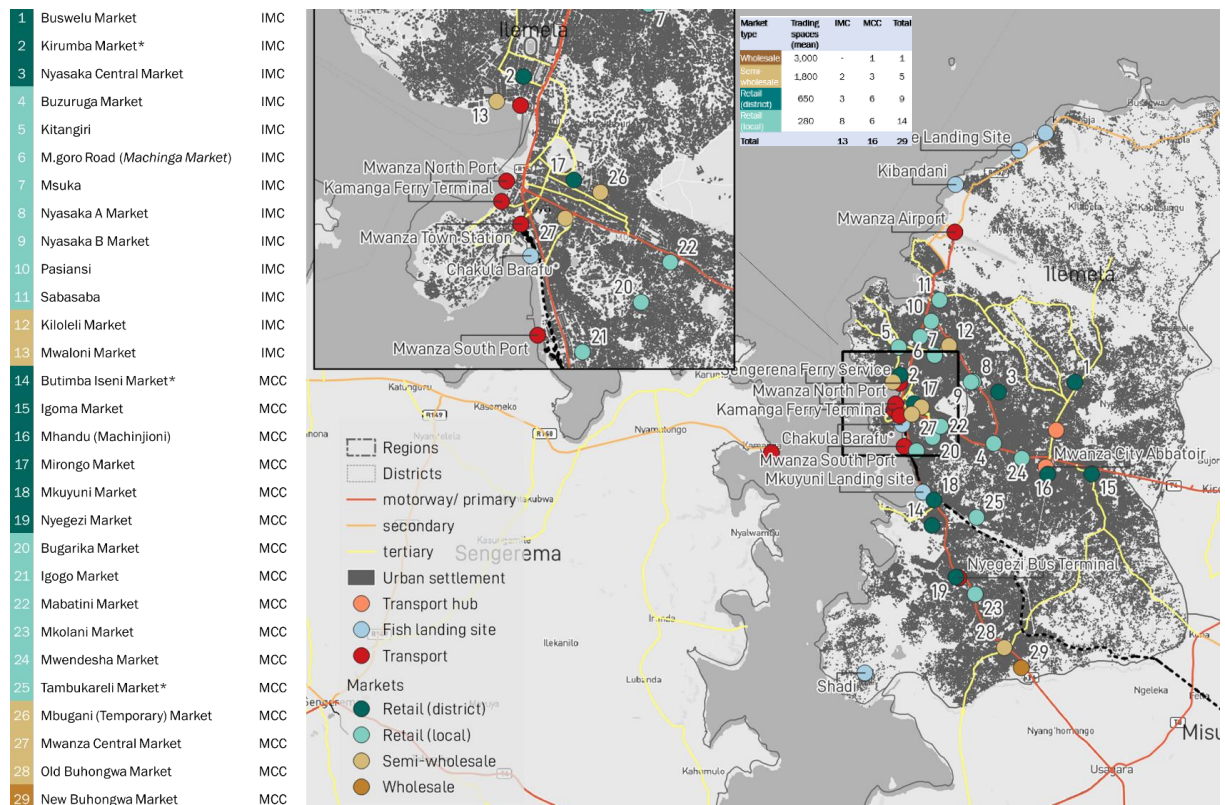


Figure 11: Typology of Mwanza City markets.

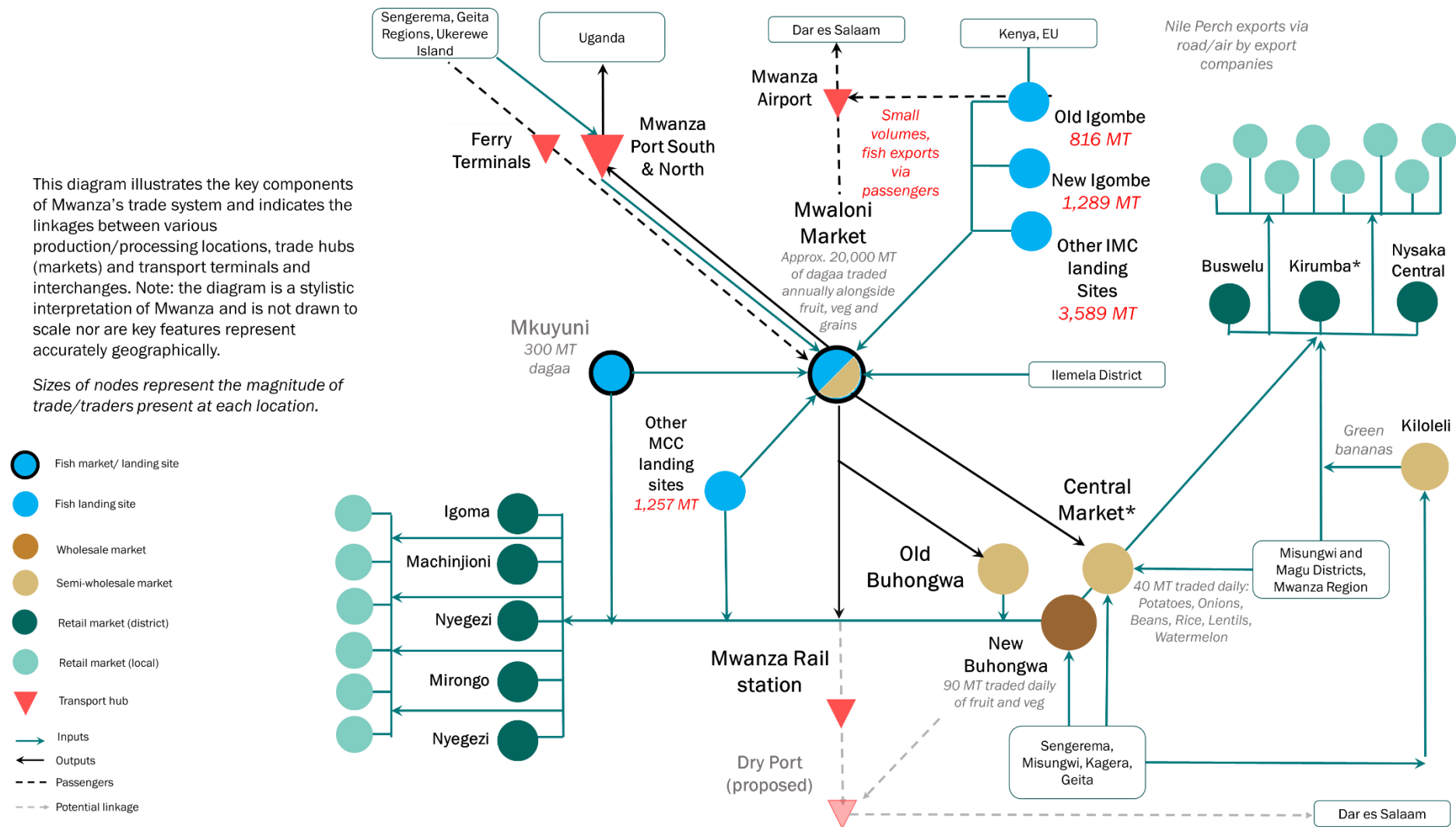


Figure 12: Key components of Mwanza City's trade system.



## Constraints of market infrastructure

Despite the city being governed by two distinct administrative units, the trade and market infrastructure serves the city as a whole. More of the larger, retail markets can be found in and around MCC area – all following a similar format, 500-700 trading spaces, laid out and ringed by concrete shop units. IMC has many smaller markets, though also prominent *semi-wholesale* markets generally specializing in the wholesale of particular products.

There have been recent attempts in both districts to regenerate the market infrastructure, Mwanza Central Market (nearing completion in 2023) and Kirumba Market (currently under construction) will be modern retail market facilities when they are complete. There are examples of new and rehabilitated markets that have not succeeded: Butimba Iseni and Tambukareli (MCC) and Nyasaka A, B and Central (IMC) have all been recently developed but lie largely vacant, having been unable to attract traders to establish in these centers. These markets are typically not accessible or built in locations with lower population densities relative to the number of stalls provided and as such lack a critical mass of customers.

Examples of the best performing markets tend to be those smaller, local retail markets that are well organized, clean, tidy and well managed – such that informal trading is being enforced, and the retail environment is welcoming and vibrant for both traders and customers. Examples, of these markets include Igogo and Mirongo in MCC, and Sabasaba and Pasiansi in IMC.

Infrastructure quality across the city’s markets varies and is not related to the size or function of the markets as described below.

### Infrastructure and service quality (MIQ index)

#### MCC

Under the *commercial viability* theme, the highest scores in MCC are for accessibility (population living within a 10-minute walk of the market) and connectivity (location from a main road), where all but two markets received a medium or high score. These are a good sign that the markets have been developed in suitable locations. Lowest scores were for drainage, where only one market (Igogo) has purpose-built drainage, room for expansion, and internal access due to uneven or unpaved paths inside the markets. The best quality market in Mwanza was Igogo Market, more recently constructed with good quality infrastructure, well organized.

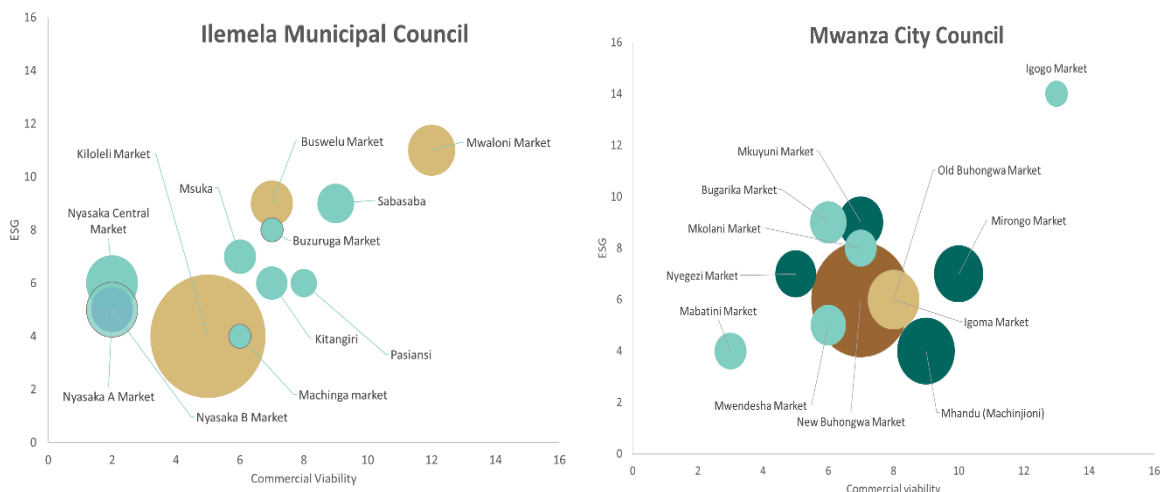


Figure 13: Markets infrastructure quality.

Note: The quality of market infrastructure for all the formal markets in MCC and IMC was assessed using our Market Infrastructure Quality Index. Markets are scored against 16 individual indicators in two broad themes: commercial viability, the conditions that would support effective and efficient trade; and environmental and social governance, the management arrangements and result social and environmental well-being that results from market operation.

For *Environment, Social, and Governance (ESG)*, higher scores were given for solid waste management, where most have some collection in place, access to mains water (although this was often found not to be working), and evidence of minor environmental degradation. All markets score poorly in relation to inclusive design due to the presence of changes in level of internal walkways, uneven ground, exposure to rain and sun. Market coordination and informal trading were also poor, with almost half practicing informal trading both inside and outside the market area. Management was generally more *laissez-faire* in Mwanza City, with limited collection of rents across all marketplaces, and hence very limited re-investment in operations and maintenance. The reasons cited for this were unwillingness to pay by traders where infrastructure and services available at markets was deemed to be of poor quality and the influence of politicians who had been seen to advise traders not to pay council fees.

### IMC

Under the *commercial viability* theme, the highest scores are for accessibility (population living within a 10-minute walk of the market) and connectivity (location from a main road) despite some variation in accessibility with around a third of markets having less than 15,000 people living within a 10-minute walk. Occupancy levels and internal access are low-medium. Lowest scores are for drainage, where only one market (Mwaloni) has any drainage, quality of stalls, with most being basic wooden, and just over half only have communal power access.

For *ESG*, higher scores were given for solid waste management, where all make at least some attempts at collection, access to mains water and at least basic sanitation. All markets scored poorly in relation to exposure to weather due to limited roofing of common areas, and presence of informal trading, while the level of coordination is also limited in most cases. Flooding can be a significant issue in Mwanza given the steep relief, with markets often located on uneven ground. Kitangiri, Kirumba, Sabasaba are all located close to areas with historic records of flooding and yet offer very little in the way of protection from floods. Ilemela Municipal Council pride themselves on adoption and implementation of bylaws governing market operations and claim good high collection rates of trading fees. Informal trading activity was noticeably lower in IMC area when compared to MCC.

### **Fisheries infrastructure**

As mentioned above, there are 19 key sites in Mwanza. Old Igombe, New Igombe and Mwaloni in IMC are the city's largest. Infrastructure is very basic, wooden tables/ plastic sheets, limited power/lighting, no cold storage facilities and a poor drainage systems. Landing sites are typically at least 10-15 kms from the city. Most of the landing sites in these peri-urban/rural areas are built around small fishing settlements, landing fish for sale and consumption locally, as well as some transport to the city center markets.

Very little value-addition is undertaken except for basic processing, drying and frying of fish which takes place at the landing sites. The one exception to this is the Nile Perch value-chain where fish is chilled at the landing sites before being exported by road to Kenya and by air cargo to the EU.

### **Performance, infrastructure quality**

There isn't any significant infrastructure at Mwanza's landings sites. Some of the larger sites have an office for Beach Management Unit (BMU) and a shed for repairs of motor engines and fishing nets. Infrastructure is very basic, wooden sun-drying units, and wooden bandas. Few have cold storage, adequate parking facilities, washrooms, jetties and other similar infrastructure and services. Most sites lack access to electricity and water supply, washrooms, waste management centers.

Fishing and processing activity is somewhat weather dependent, and in any case the beaches provide little shelter from the rain or sun. Significant post-harvest losses result from this exposure, particularly during the rainy season. Natural vegetation, trees and shrubs around the sites are often cut down for firewood, often to be used in the fish processing (frying ) process. Oil and fuel from boat engines often spills into the Lake where boats are re-fueled and repaired next to the lakeside. Pollution and runoff into the lake has contributed to deep water oxygen loss, impacting fish stocks, biodiversity and habitats across the lake area.

## Accessibility and connectivity

There are three landing sites located close to the CBD: Mkuyuni and Chaukla Barufu (MCC), and Mwaloni Fish market and landing site (IMC). These sites are accessible by main road, access roads to the beaches themselves are short, unsurfaced tracks between buildings (see image below). Landing sites in Ilmela and on the outskirts of Mwanza City Council area are served by poorer access roads, mostly unsurfaced tracks. These sites are over 10 km from the main fish market at Mwaloni. As such transport costs for those working these facilities. They are situated in areas with very rural characteristics, not being well served by public services, roads, utilities etc.

## Management

Landing sites are managed by city councils and BMUs. BMU work closely with IMC and MCC management to monitor fishing activity, and ensure illegal and unsustainable fishing doesn't take place, cleaning of beaches, garbage collection and security and fishermen and traders' welfare). There are a number of social inclusion challenges – poor security, gender discrimination and harassment, and poor WASH and hygiene. Illegal fishing practices do occur and potentially harm the sustainability of fish stocks – i.e., use of undersized nets, catching juvenile fish.

## 2.3 Tanga City

### 2.3.1 Strategic context

#### Urbanization drivers

Tanga is the largest city in the Tanga Region and seventh largest in Tanzania by population. The official population at the last published census was 273,332 (2012), with more recent projections suggesting it had risen to about 342,000 by 2020.<sup>5</sup> Urban population growth rate is estimated to be around 1% per annum in the period from 2002 to 2012, lower to most other cities in Tanzania. The city's growth is largely attributable to natural population growth as opposed to migration from rural areas; in fact the city in recent decades has experienced net out-migration. A key concern is the flight of educated youth out of Tanga in pursuit of tertiary education and not returning. As with much of urban east Africa, over 70% of the population are youth under 35 according to the 2012 census.

Average population density across the city is around 5,550 person per km<sup>2</sup>, although reach as high as 20,000 persons per km<sup>2</sup> in more central areas. Common with cities across Tanzania these pockets of higher-density are scattered and indicative of a fragmented pattern of development and land-use inefficiencies, which only serves to increase the costs of service provision and transport connectivity.

Much of the growth of the city (urban expansion) has occurred informally. The city council estimates that 22% of Tanga city area is informal (unplanned) settlements which have grown over last 10 years grown by more than 10% per annum. The result of this is relatively poor access to basic services and infrastructure for a large proportion of the population. Access to water (58.7%), access to electricity (27.8%), access to improved sanitation (25.4%) and access to solid waste management (26.9%) are all well below national urban averages (87.6%, 63.7%, 41.2%, and 24.7% respectively).

#### Economy and trade

The city of Tanga is strategically located approximately half-way between Dar es Salaam and Mombasa, Kenya's second largest city and main port. All-weather surfaced highways connect Tanga to these destinations. By virtue of its location the city potentially has access to markets across East Africa's Northern Corridor, a regional trade corridor that links Kenya, Uganda, Rwanda and the Democratic Republic of Congo (DRC). The port at Tanga is Tanzania's second largest and provides access to Pemba and Zanzibar, and further afield to the Comoros Islands – all of which are important destinations for trade in food-related products.

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<sup>5</sup> Triple Line estimates derived from the built-up area of the city defined by the World Bank (2019) and population modelling provided by WorldPop (2020). Official statistics are somewhat old, the last published census was 2012. The recent 2022 census as yet to have been published at district level.

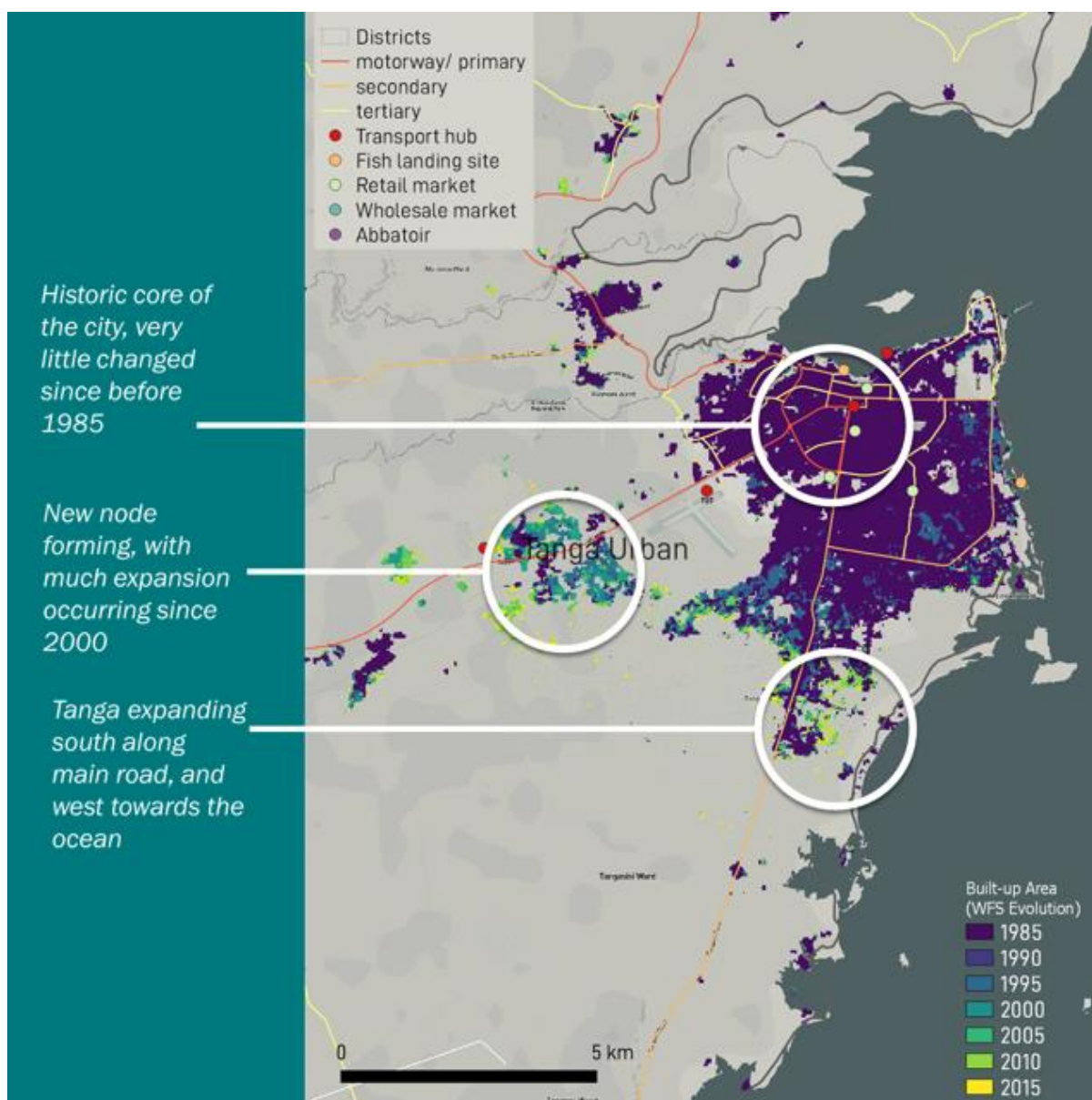


Figure 14: Tanga City urban change process.

Source: Triple Line estimates derived from the built-up area of the city defined by the World Bank (2019) and population modelling provided by WorldPop (2020).

The city is a major contributor to the region's economy, which had a GDP of US\$2.3 billion in 2020, equivalent to about 4% of Tanzania's national output. Average per capita incomes are estimated at US\$400 per annum, well below the average for Tanzania, which is US\$1,140 per annum (World Bank, 2021). Nearly 40% of Tanga City's population is employed in the agriculture, food and fisheries, with the remaining engaged in manufacturing (13%), trade and commerce (10%) and tourism (7%) sectors. The city serves as an agro-logistics hub for food aggregation and distribution. Within the agriculture sector, smallholder farmers mainly produce cassava and vegetables.

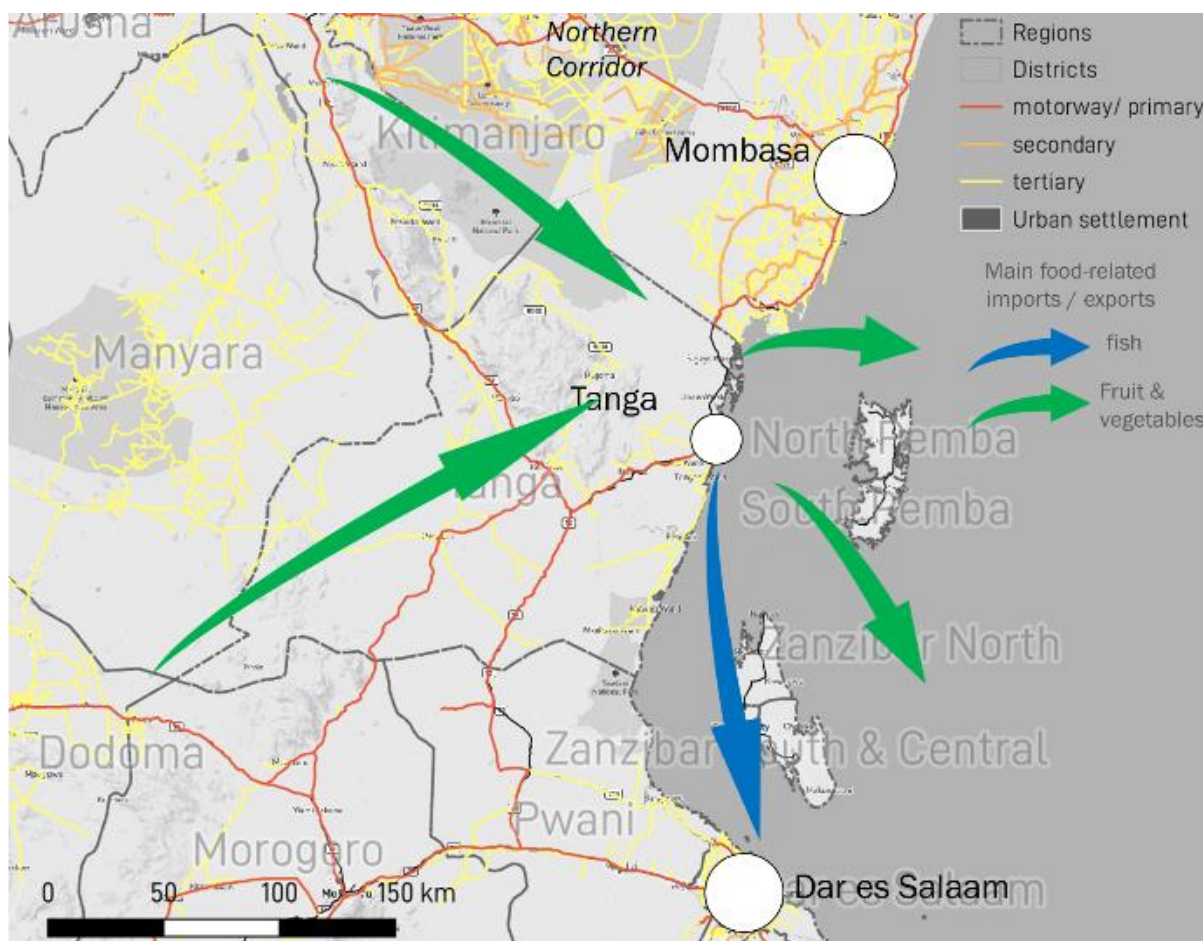


Figure 15: Tanga trading system: a regional perspective

### Vulnerability to climate change

Climate change has already resulted in a fall in total precipitation levels in Tanga, with a shift in the rainy season and an increase in the number of droughts. Sea levels have risen by 150mm over a period of 15 years (2001-2015). Similarly to Mwanza, increasing temperatures and more unreliable and intense rainfall is already posing a significant threat to crop yields and post-harvest losses given the reliance on rain-fed agriculture and limited cold storage facilities. The rise in sea levels and temperatures is further expected to reduce fishery productivity and catches by altering migration patterns, breeding habitats, increased exposure to storm damage and reduced time at sea.

The city of Tanga is at high risk from both river and coastal flooding. It is poorly served by storm water drainage and parts of the city are subject to regular flooding. Flooding in the Tanga Region in October 2019 caused damage to bridges and roads, homes and farmland, impeding movement of people and goods to and from markets with limited all-weather roads.

Environmental degradation, including the destruction of mangroves to make way for new developments, and water pollution, including of the Pangani River from agricultural runoff and poor waste management, is further harming fisheries and protection from coastal and inland flooding.

Another major challenge is deforestation/denudement of shrubs and vegetation. Over 90% of households in Tanzania use charcoal and fuel wood as a source of power. Fuel wood use, improper agricultural practices, overgrazing contribute to environmental degradation.

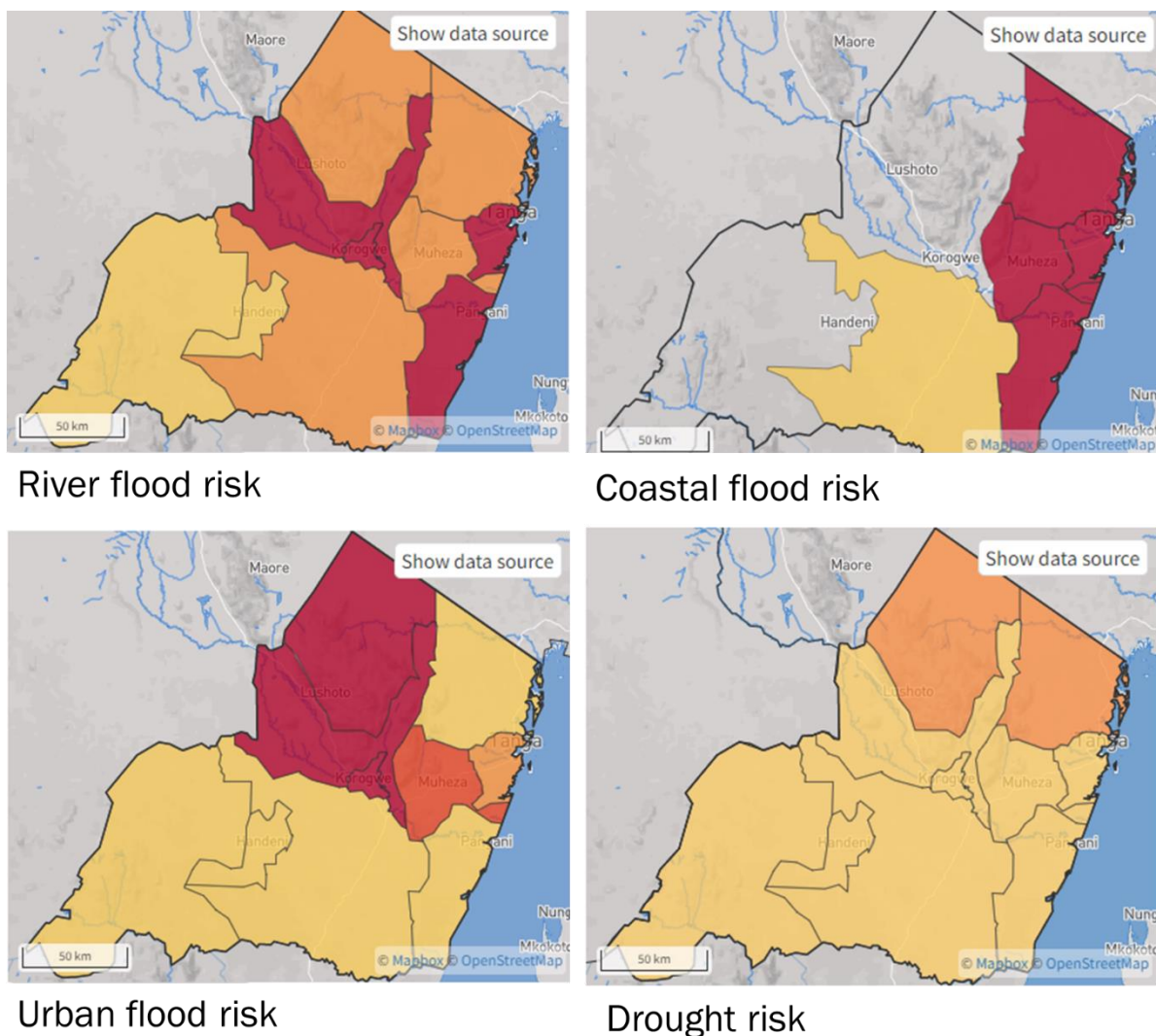


Figure 16: Severity of climate hazards across Tanga Region. Source: *ThinkHazard!* (World Bank)

Disclaimer: The hazard levels and guidance given in *ThinkHazard!* and do not replace the need for further detailed natural hazard risk analysis.

### 2.3.2 Overview of Tanga's food system

Large areas of the city are allocated for cropping and urban agriculture, equivalent to about 40% of total land-use, although there are many small plots of agricultural land found integrated into settled areas of the city. Smallholder farmers mainly produce cassava and green leafy vegetables. The city sources most of its other grains (such as maize and rice) and fruits from other parts of Tanzania. In the livestock sector, the dairy value chain is predominant and well-organized (Tanga Region contributes to 25% of Tanzania's milk production), while the meat industry is growing due to demand for beef and chicken. The fisheries sector is less well developed but fish provide an essential source of protein for households and has significant potential for growth, both for consumption within the city and regionally.

#### Regional performance and rural-urban linkages

Tanga City is the most important commercial center serving Tanga Region (which has an area of 27,348 sq. km. and is divided into 6 districts). The region produces cash crops such as coffee, tea, cardamom, coconuts, cashew nuts, and cotton, which is then supplied to various industries located within Tanga City for further processing and exports through Tanga Port. In addition, large proportion of the region's population is engaged in subsistence farming producing staple crops such as cassava and bananas (mainly) and small volumes of maize, rice and beans. Tanga Region is the fourth largest producer of cassava in Tanzania (150,000 MT approximately annually)

Two value chains were selected for further analysis: fisheries (domestic and export) and horticulture (fruit & vegetables).

Criteria	Agriculture		Fisheries	Livestock	
	Grains & Tubers	Horticulture		Dairy	Meat
Growth rate of production (2016-21)	Cassava - 26% Maize - 0.73%	>100% for most vegetables (over supply)	12% CAGR	Declining milk production - 13%	Beef production - 7% Chicken - 26%
Employment	At least 10% of households practice farming on their own land ~2,500+ wholesalers, informal retailers and transporters employed within the key markets of the city		1,500+ fishermen at key landing sites of Deep Sea and Kaseria Several 1,000's employed in trading and processing	~10,000 or so cattle owners in the city	Not as many as in agriculture and fisheries, but farmers own poultry + hundreds of traders and butchers at Sahare Market
Extent of value-chain activities carried out in the city	Cassava is highly produced, but no production of cassava flour Few maize millers in the city	No cold chain infrastructure for fruits and vegetables; no further processing activity	Artisanal methods of processing - boiling and drying OR frying < 4 exporters in the city	Milk production and processing (integrated value chain between co-ops and Tanga Fresh)	Slaughtering of cattle Breeding of poultry to slaughtering (no cold chain - fresh sales of meat)
Role of women/vulnerable groups	Limited to small-scale retail trading and food vendors in various markets	Most informal retailers/traders are women (40-50% in key markets)	Limited to small-scale trading and offloading fish from small boats; food vendors in fish markets	Feeding cattle	High in poultry sub-sector, but very limited in beef
Challenges	Limited value addition (considered to be capital intensive + lack of skills and technology)	Dilapidated market infrastructure that increases PHL and sales at low prices, no storage	Lack of modern fish vessels, hence marine catch not fully exploited; lack of skills and fishing equipment; no cold storage and hence use of artisanal methods for processing; limited access to markets	Limited number of cattle per farmer; low volumes of animal feed produced in the city; low numbers of cross bred cattle impacting milk per cattle	Quality assurance of meat, hygiene and waste management; no cold storage
Priorities of Tanga City Council	Establishment of small-scale industrial area; land identified for SEZ (opportunities for agro-processing)	Mgandini Market (largest) Mlango wa chuma Market (F&V) Makorora Market	New fish auction markets at Deep Sea along with cold storage	Not identified	Not identified
Opportunities	Support logistics and processing of maize, rice cassava and beans)	Rehabilitation/new modern markets with cold storage	Fish markets and cold storage at Deep Sea and Kaseria; provision of table mats and improvement in waste management system		Meat production and consumption is increasing; similar to other agri products, households are dependent on procurement of cattle from rest of Tanzania - infrastructure and skills to be developed to meet demand

Figure 17: Assessment of key food value chains.

### Fisheries sector

The fisheries sector has shown impressive growth (12% annually since 2016) and makes a significant contribution to the food and nutritional security needs of the residents of Tanga city. The sector is characterized by (a) artisanal fishing methods and basic infrastructure at landing sites; (b) little to no value-addition; (c) fragmented supply chains; (d) under-exploited fish stocks (high value fish resources from Indian Ocean); (e) significant post-harvest losses mainly due to a lack of cold-chain storage; and (f) underdeveloped export markets. Fishing is mainly undertaken by men, with women involved in the processing and trading of fish, with various barriers to safe and decent working conditions.

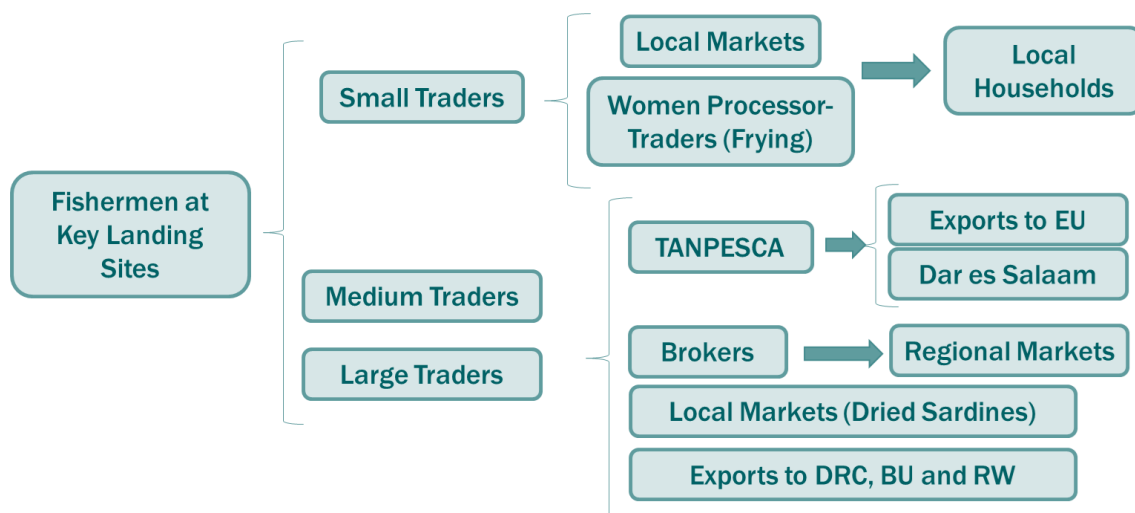


Figure 18: Fisheries value chain in Tanga.

### Horticulture sector

Although soils and conditions in the coastal region do not lend themselves to horticultural production, certain value-chains have thrived, notably production of green vegetables, which has been growing at 100% each year since 2016. This is also due to increased urbanization and smaller land parcels available for farmer-households. There is a preference towards producing all-year round green leafy vegetables than producing cassava or other crops that require larger areas. However, value-addition is

very-limited with some small-scale milling of maize flour. Due to its strategic location, Tanga City has emerged as agro-logistics hub serving regions across Tanzania. Wholesale and retail markets are congested, and infrastructure is basic and dilapidated. Post-harvest losses are high with no appropriate storage and distribution facilities for highly perishable produce. Markets represent a steady source of revenue for TCC, although market rents are rarely re-invested in improving operations and maintenance of the markets.

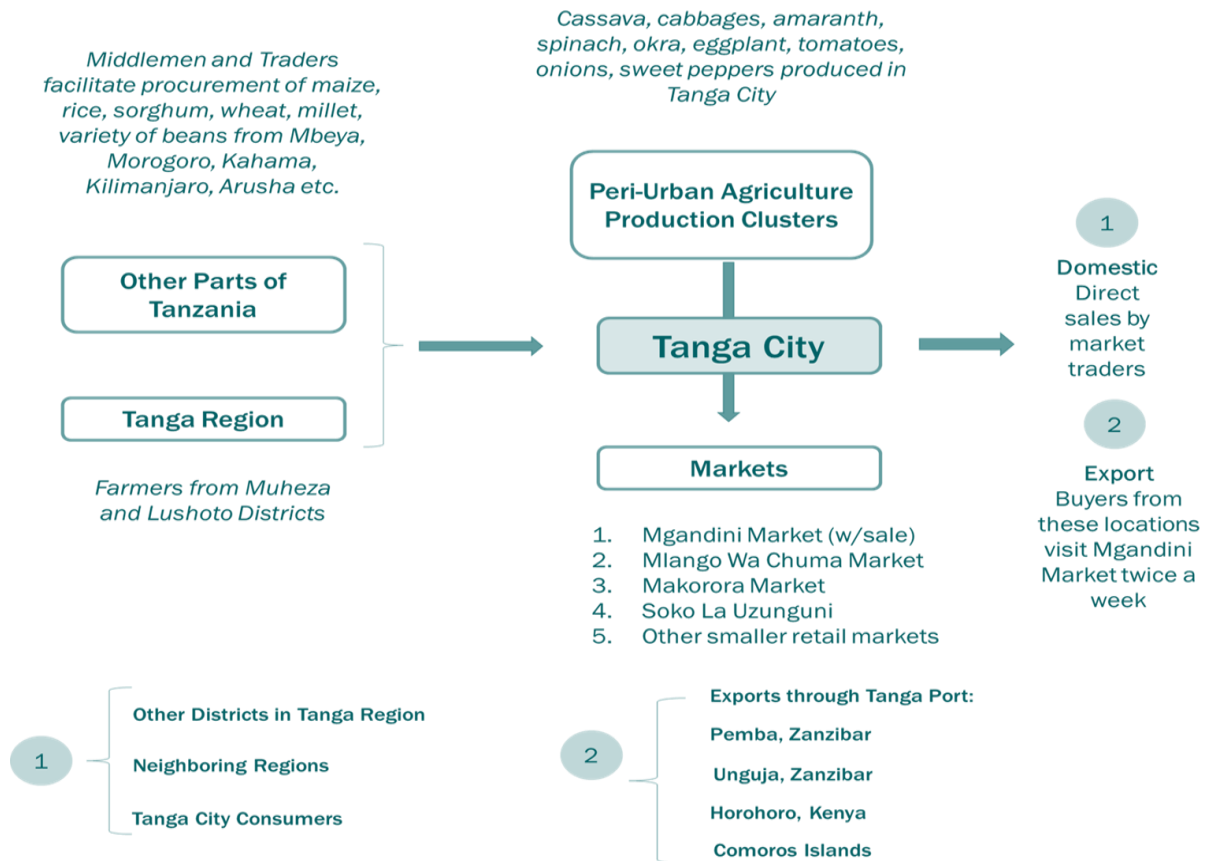


Figure 19: Horticulture value chain in Tanga

### 2.3.3 Overview of Tanga's trading system

#### Accessibility and connectivity

Around 80,000 people live within 1km of a marketplace in Tanga, equivalent to 35% of the city's population. Much of the formal trade is centered around the main wholesale market of Mgandini, which acts as a feeder to the other 5 smaller retail markets in Tanga. Trading spaces range from 70 to 1,700 and except for Pongwe Market all are fully occupied. Households who grow their own food also sell surpluses in retail markets.

Most of the markets are located within the central, most densely populated wards of the city, there not being any allocated, formal markets outside of this area. Pongwe is the one exception being located about 10km west of the city center, at the satellite town of the same name. As the city expands south/south-west, planning new retail market facilities should accompany urban expansion, and could also link to proposed land allocations for urban agriculture (shown right).

The city's two main landing sites, Deep Sea and Kasera, are no more than beaches where artisanal fishermen land their fish for sale to traders, who then either transport fresh fish to one of the markets for sale, or dry or fry fish to preserve them before selling them locally or regionally. The trading spaces on the shore are very basic, and traders have made their own 1.5sq.m wooden poled / plastic sheeted cover areas. Access roads tend to be unsurfaced and in poor condition.



## Transport connectivity

Being Tanzania's seventh most populous city, the region is not as well developed, but the six markets and two landing sites are easily accessible via tarmac roads. These further connect to the National Kange Bus Terminal, Tanga Airport and Railway Station, though neither currently carry cargo, and the Tanga Port serving neighboring Zanzibar, Pemba and the Comoros, and which the Tanzania Ports Authority (TPA) is planning to expand with the aim to facilitate and increase opening up of economic opportunities in the Tanga Region. Road densities are lower than the average for cities in Tanzania, however there are more kilometers of road per capita than the average for other cities.

The city's street network is orderly and planned in the core of the city and traders and customers can connect easily. However, urban expansion on the city's edge has resulted in more haphazard developments. The city's storm water drainage network is well developed in the core part of the city though many markets do not connect directly to this. The sewerage system is very minimal and grey and black water end up mixed and untreated.

Most of the cargo transported out of the city leaves by road/trucks. About 100 tons are transported through the port on a weekly basis. At the larger markets, goods arrive on 7-ton trucks, three-wheel motors or small vans that are also used to carry up to 3 MT. Traders often collaborate to hire trucks. Handcarts, cycles, motorbikes are then used to ferry produce between vehicles and stalls, or where there is parking and congestion around the markets.

## Role of markets, coordination and linkages

A simple hierarchy is observed in TCC, with Mgandini operating as the city's main wholesale market, and acts as an agro-logistics hub for Tanga Region and Zanzibar Island. It is co-located with Mlango wa Chuma which also serves as a semi-wholesale market, feeding those smaller retail markets. Tanga has commercial crop production areas (cassava, oranges, mangoes and leafy vegetables) with products sold through Mgandini/ Mlango wa Chuma. Makorora Market also functions as a semi-wholesale market, running auctions for (green) bananas and cassava.

Much fresh produce (fruits, vegetables, livestock) is imported from other regions of Tanzania. In addition, urban farming households sell any surpluses directly to retail markets. Fish is sold throughout the cities markets, though is also available directly from fish landing sites at Kasera and Deep Sea. The retail markets all host less than 300 traders, tending to serve local neighborhoods for daily food purchases - fresh/ dry food and some non-food items.

## Constraints of market infrastructures

Markets are generally in average condition with physical structures at best having a covered shed of about 100 m<sup>2</sup> with raised concrete floor, trusses and a corrugated iron shed. To accommodate additional traders, the main sheds have often been complemented by simple raised wooden tables, with most traders protecting their produce from sunlight and rain with wooden poles and an overarching polythene sheet. Most were constructed at least 10 years ago.

Under the *commercial viability* theme (Figure 21), the highest scores are for accessibility and connectivity – two important factors for ensuring a good/stable customer base and connection to other parts of the city for ease of trade, minimizing transport costs etc., which is reflected in the occupancy rates, which except for Pongwe are also generally high.

Lowest scores are for drainage with poor management of surface and stormwater, room for expansion with limited land to expand the market in the future, and internal access due to uneven or unpaved paths inside the markets. Most butcheries and fishmongers use water or old fridges not connected to power to keep their produce cool during the day. Even where markets do have power, this is often limited to handmade extensions with limited lighting that does not cover all areas.

For ESG, in general markets have quality, segregated toilets close to or within the markets, availability of piped water and relatively good organization and configuration of stalls. All markets score poorly in relation to inclusive design due to the presence of changes in level of internal walkways, uneven ground, exposure to rain and sun, while over half show evidence of environmental degradation. The city council directly employs staff to collect rents and coordinate service provision, though it is unclear how much of this revenue is re-invested operations and maintenance.

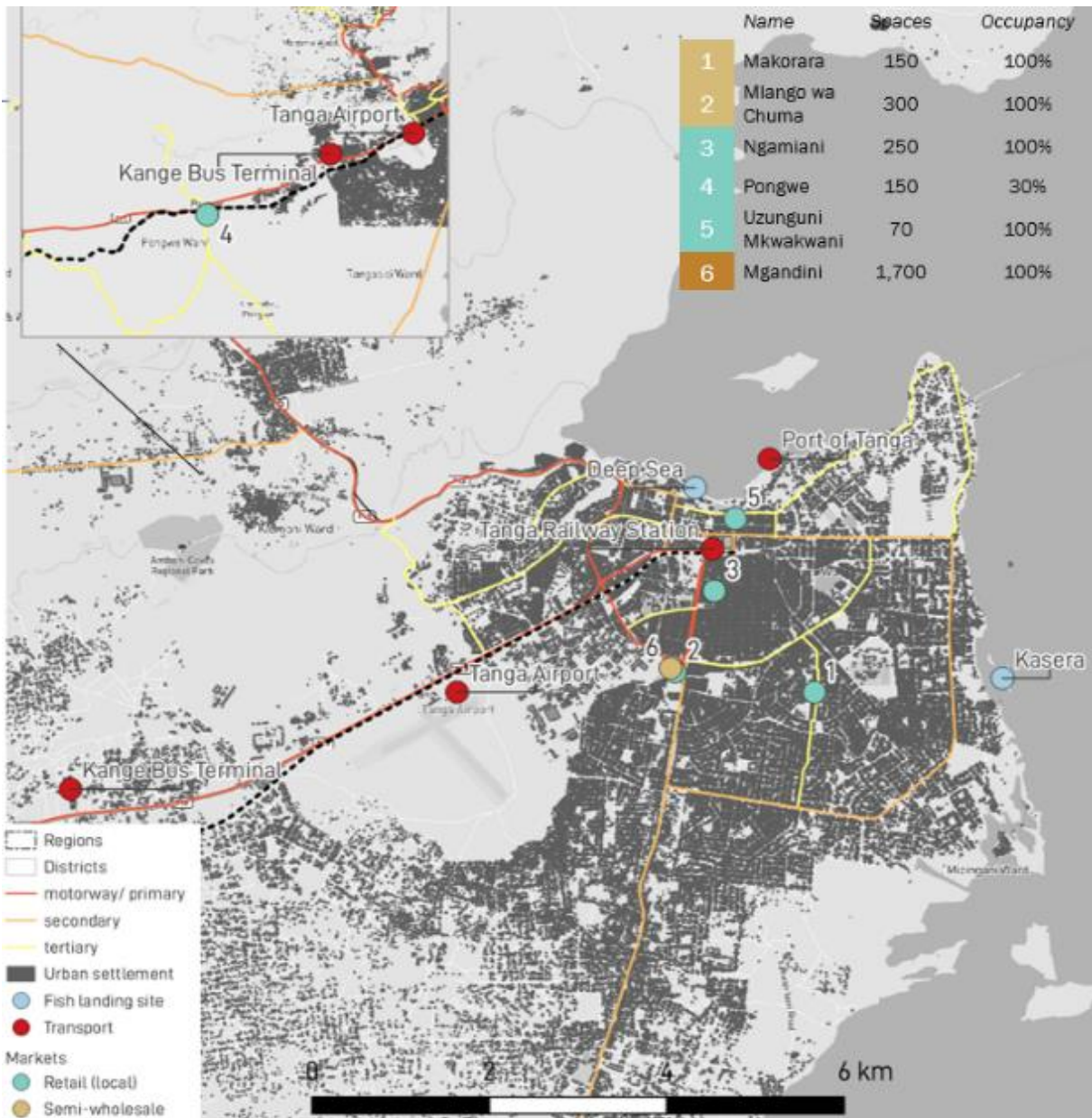


Figure 20: Markets in TCC.

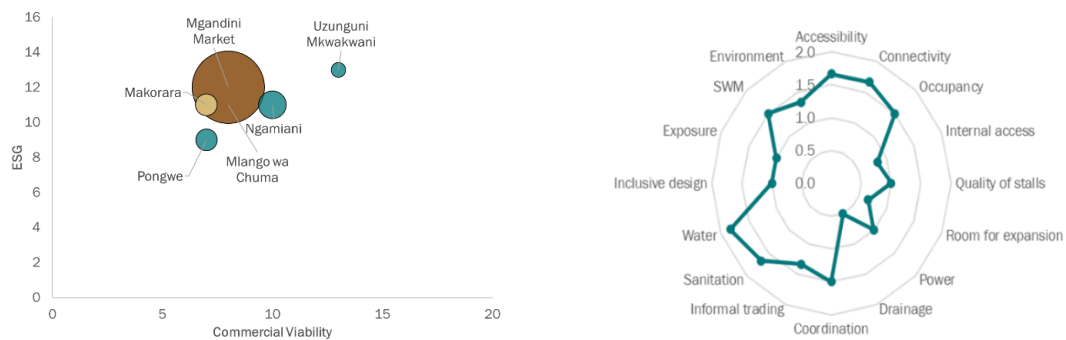


Figure 21: Markets infrastructure quality.


Note: The quality of market infrastructure for all the formal markets in Tanga was assessed using the MIQI. Markets are scored against 16 individual indicators in two broad themes: commercial viability, the conditions that would support effective and efficient trade; and ESG, the management arrangements and result social and environmental well-being that results from market operation.

# Tanga trade system

This diagram illustrates the key components of Tanga's trade system and indicates the linkages between various production/processing locations, trade hubs (markets) and transport terminals and interchanges.

The diagram is a stylistic interpretation of Tanga and is not drawn to scale nor are key features represent accurately geographically.

Sizes of nodes represent the magnitude of trade/traders present at each location.

-  Fish market/ landing site
-  Fish landing site
-  Wholesale market
-  Semi-wholesale market
-  Retail market
-  Transport hub
-  Inputs
-  Outputs
-  Passengers

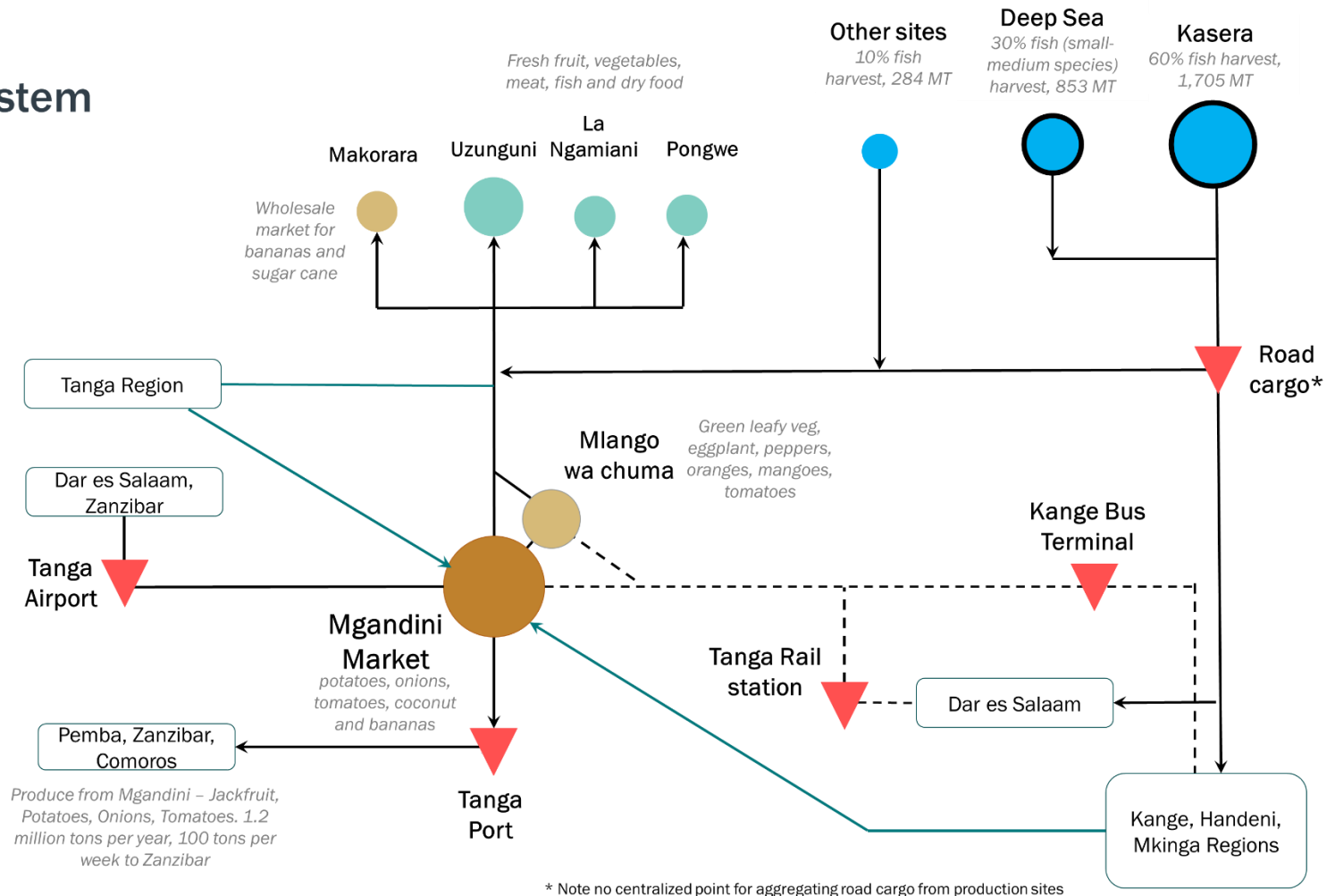


Figure 22: Key components of Mwanza City's trade system.

## Fisheries infrastructure

Tanga's fishing sector can be classified as artisanal. Fish landing sites in Tanga Region cater for about 5,000 fishermen, who mostly use nets, hooks, long-line and fish traps. There are four key landing sites – Kasera, Deep Sea, Mchukuuni and Tongoni. Of these, Kasera and Deep Sea contribute up to 90% of total annual fish harvest (about 2,000 MT). Very little value-addition is undertaken except for basic processing, drying and frying of fish which takes place at the landing sites.

### Performance and infrastructure quality

Landing sites have several challenges: there is no infrastructure other than auction markets, which is only used at the Deep Sea as different variety of fish are caught there. There are no jetties, processing area, parking spaces, ice making machines, display units for informal retailers to sell items. Infrastructure is very basic, wooden structures, some plastic or corrugated iron roofs to bandas. There is no cold storage, beyond rudimentary insulated containers.

### Accessibility and connectivity

Access to these site is via a steep or unsealed roads road that makes access problematic during rains. Deep Sea though located close to the center of the city is accessed via a very steep, poor-quality road. Kasera is located much further from the city center and main wholesale market, in a relatively low-density area. Access again is via a very poor road, through mangroves which prevents easy access for those coming to buy fish or for fishermen accessing their boats (see Figure 22).

### Management

Landing sites are managed by city councils and BMUs. BMU work closely with TCC in management of fisheries resources (monitor and ensure illegal and unsustainable fishing doesn't take place, cleaning of beaches, garbage collection and security and fishermen and traders' welfare).

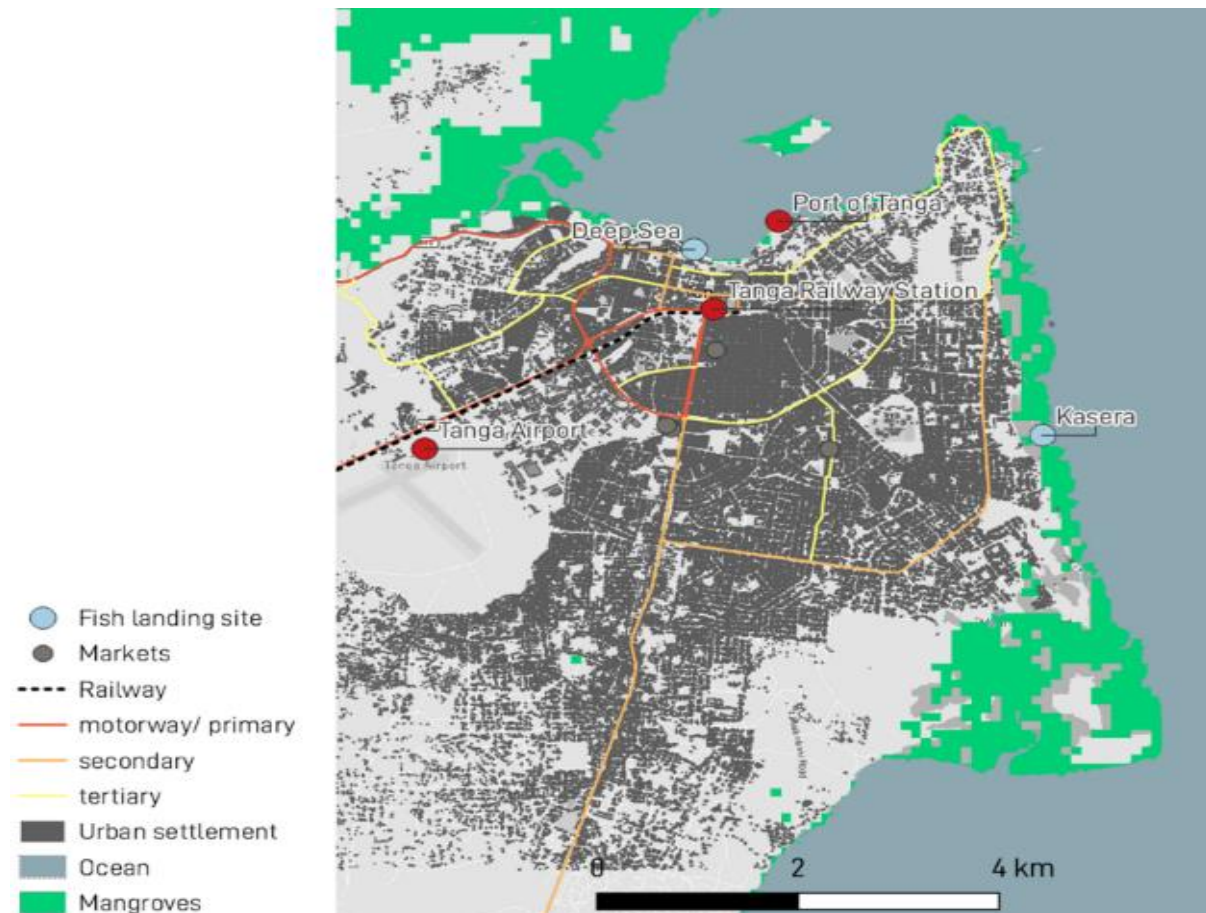


Figure 23: Location of fish landing sites in Tanga.

# 3 Pre-Feasibility Assessment of Projects Proposed for Mwanza and Tanga

## 3.1 Introduction

The PFA builds on the value-chain analysis and trade systems assessment. The primary objective of this assessment is to arrive at a shortlist of potential projects for each council that would deliver on sustainable urban development objectives, framed by an understanding of the importance of urban food systems.

The PFA derives from the point that the councils have adopted Strategic Development Plans and Physical Master Plans that set out policies, programs, and projects to guide their path to sustainable development. The councils recognize that infrastructural deficits act as a constraint to sustainable urban growth. The three councils and their development partners have a commitment to follow through with these plans. Nonetheless, given the resource constraints (financial and technical), there is a recognition that the councils and their development partners cannot do everything. Moreover, to ensure Value for Money (VfM) and efficiency in the use of limited resources, it is sensible to avoid promoting investment in projects that may not be able to deliver the greatest returns.

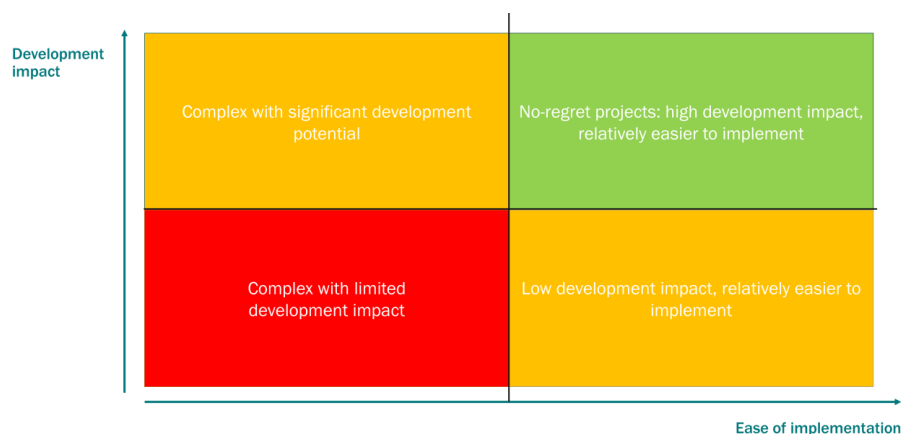
Accordingly, this PFA is designed to help the councils make investment choices that are:

- Evidence-based and defensible (transparent and credible)
- Practical – recognizing time and cost considerations
- Owned by local decision-makers

At the launch of the Green and Smart Cities ‘SASA’ Program, each council was asked to prepare a long-list of potential investments drawn from their Strategic Development Plans and Master Plans. A more detailed data capture exercise was then carried out under this assignment to produce a Project Fiche for each project to define in more detail project objectives, implementation arrangements, indicative costs, and expected sustainable development benefits. The assessment is therefore based on data and information provided by MCC, IMC, and TCC, and complemented with data and information collected by the Triple Line team over the duration of this assignment.

Informed by the comprehensive assessment of the key food value-chains and the trading systems that support supply and distribution of food in Mwanza and Tanga, this pre-feasibility assesses the strategic relevance, ease of implementation and potential development impact of the projects proposed by the two cities under the TEI. The scope of the PFA includes 35 projects proposed by IMC, MCC and TCC as well as projects identified in VC and the trading systems assessments under this assignment. In this process the long-list of projects are scored, ranked and prioritized in order to inform the development of a sustainable economic development investment program for the cities of Tanga and Mwanza.

Results from the multi-criteria assessment are then presented according to Quadrant Analysis as shown below.



The PFA approach is designed to guide discussions with city-level stakeholders and their development partners in arriving at a rational choice for deploying a limited amount of development funding for project preparatory activities. As such the selection of a shortlist of projects through this PFA process does not imply that other projects identified in the council’s respective strategic development plans or investment plans are not important, but more that the selection of projects reflects best fit with urban food system objectives specifically.

The sections below present the results of the PFA process. For description of the methodology followed including indicators see Annex 1.

## 3.2 Project screening

### 3.2.1 MCC

MCC proposed seven projects under the TEI with four of them demonstrating alignment with urban food system objectives as shown on the table below.

**Table 2: MCC projects under TEI**

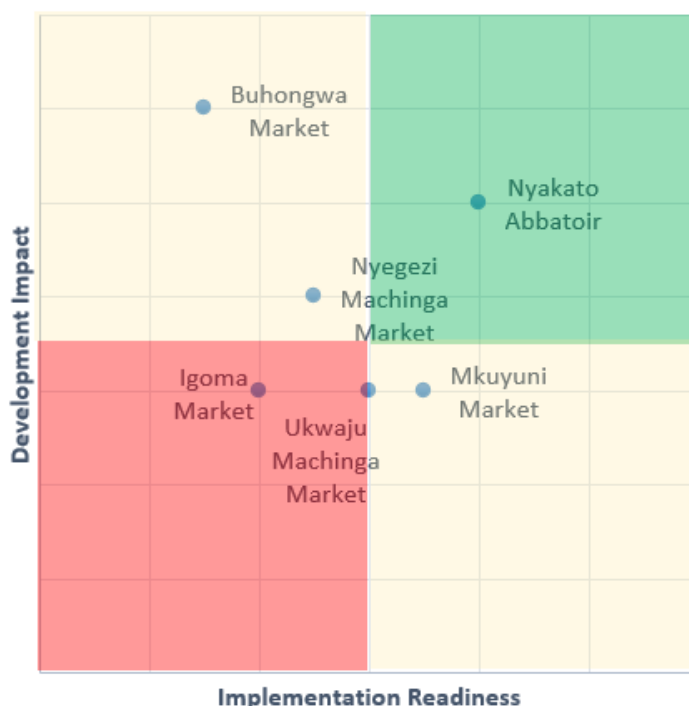
Project name	Project description	Aligns with urban food system objectives
Igoma Market	The existing market infrastructure is old and need to be developed to modern one. The market is under the ownership of MCC and was established in the year 1990s aiming at improving agricultural sector markets. The proposed structure will be designed to meet current and future agricultural needs in terms of quality and space.	Yes
Nyegezi Machinga Market	The project area is adjacent to the bus terminal. The bus terminal will consist of intra-city bus stand for daladala which will make the accessibility of the area possible. The market will accommodate about 1,200 traders in a modern structure and a commercial building. The traders will consist of food vending areas while the commercial building will further supplement the commercial building in the bus terminal.	Yes
Mkuyuni Market	The project is aiming at improving Agricultural sector value chain, provide modern infrastructure for SME selling agricultural products. The proposed structure will be a block designed to meet current and future business needs in terms of quality and space	Yes
Buhongwa Market	The project is aiming at improving Agricultural sector value chain, provide modern infrastructure. The Market will be used by the resident of Mwanza, Ilemela and nearby district of Magu and Misungwi.	Yes
Nyakato Abattoir	The intention is to modernize the newly constructed Nyakato abattoir at Mhandu ward which is the only abattoir for both MCC and IMC. The project is located in 12.7 acres of land that belongs to MCC, with clear demarcation and title.	Yes
Nyamagana Stadium	Improvement of Nyamagana Stadium which is the only stadium in Mwanza and is this used by both Mwanza city Council and Ilemela Municipal.	No
Improvement of solid waste management system	Improvement of SWM system from household level from transfer station to final disposal and promotion of waste sorting, segregation, reuse and recycling business	No

Using the Quadrant Analysis clarification, Nyakato Abattoir falls under the no-regret project category, scoring relatively high both from a development impact and implementation readiness perspectives. It is important to note that it serves as the primary slaughterhouse for the entire Mwanza city.

Old Buhongwe is one of the oldest and largest markets in Mwanza, which serves as a wholesale market cum retail market. Given its strategic importance, it offers potential for generating broad-based development benefits. However, intervening in the site is accompanied with very high E&S risks due to the size of the market, the very high number of traders involved, and land tenure issues, hence the low implementation readiness score. A phased approach towards re-developing the Buhongwe market could be considered. Another option is relocate the wholesale activities to a new location and keep only the retail activities in the existing site.

There is an opportunity to link the Nyegezi Machinga retail market to the recently developed bus terminal, which was planned with no transit interchange facilities. This will maximize accessibility and impact of the market. However, there are uncertainties about the extent to which the new bus terminal will be utilized as intended which may affect the relevance of the Nyegezi Machinga market. Because of this, and given other priorities, this project could be de-prioritized.

It is proposed that Igoma, Ukwaju Machinga and Mkuyuni markets are de-prioritized due to their limited potential to generate broad based development impacts.



Project	Implementation readiness							Development impact							Total score	
	Alignment with existing plans	Project development stage	Governance structure	Technical capacity	Size (CAPEX)	E&S risk	Implementation Readiness Score	Local economic development	Pro-poor job creation	Climate resilient development	Food security	Improved environmental management	Gender and social inclusion	Public revenue		Development impact score
Igoma Market	1	0	1	0	1	1	4	1	1	0	1	1	1	1	6	10
Nyegezi Machinga Market	2	2	0	0	0	1	5	1	2	0	1	1	1	2	8	13
Mkuyuni Market	2	1	2	0	1	1	7	1	1	0	1	1	1	1	6	13
Buhongwa Market	2	1	0	0	0	0	3	2	2	1	2	2	1	2	12	15
Nyakato Abattoir	2	2	2	0	1	1	8	2	1	1	1	1	1	2	9	17

Figure 24: MCC project screening scores.

Notes: Each criterion was subject to a qualitative assessment based on the information provided by the councils or collected by the Triple Line team, with a score of 0, 1, 2, reflecting no impact, moderate impact, significant impact. More information on the scoring criteria is available in the Annex 1.

### 3.2.2 IMC projects assessment summary findings

IMC's long list includes 11 projects of which six align with urban food system objectives as shown in the table below.

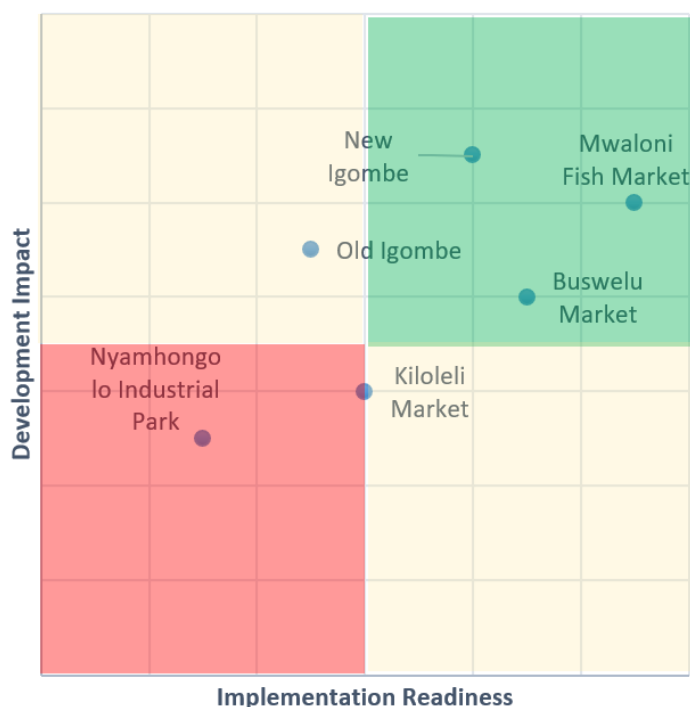
**Table 3: IMC projects under TEI**

Project name	Project description	Aligns with urban food system objectives
Improvement of Msuka–Kirumba River Drainage System	The project aims at upgrading of existing structures (bridges and culverts), tree planting for beautification and community sensitization and capacity building to river adjacent households on water and environmental conservation. The total length of the river is 4.9 kilometers.	No
Improvement of Solid Waste Management system in Ilemela	Decentralized SWM scheme thereby improving the local environment and offering employment to individuals from socially and economically CBO groups by upgrading and refurbishment of the entire SWM system and make community to own waste management system at their locality.	No
Old Igombe Fish Landing Site	IMC is intending to improve the Old Igombe Fish landing site. The landing site is located at Bugogwa ward. It is prominent Tilapia fish landing site in Mwanza city. It receives vessels from various parts of the lake including Ukerewe District islands.	Yes
New Igombe Fish Landing Site	IMC is intending to improve the New Igombe fish landing site that is located at Bugogwa ward. It is a prominent sardine fish landing site in Mwanza city.	Yes
Institutional Strengthening and Services decentralization	The project aims at strengthening the capacities of the IMC staff and raising staff’s accountability in service delivery and improving working environment including OSR collection strengthening and land development control system strengthening.	No
Furahisha Ground to Green Open Space	The project aims at Improving Furahisha ground infrastructures for inclusive recreational uses while contributing to the strengthening of green infrastructures. The Furahisha ground has an area of 8,019 square meters.	No
Mwaloni International Fish Market	The scope of the project will involve construction of concrete retaining wall, floating jet, extension of fish drying area, construction of shedding area Installation of fish storage facilities, BMU and fish vendors capacity building.	Yes
Buswelu Market	The project aims at improving the infrastructures at Buswelu Market hence rendering conducive business environment to market vendors.	Yes
Kiloleli Urban Vending Market	Targeted improvements to Kiloleni market	Yes
One Stop Center for Private Sector Development	To reduce administrative burden on private sector and boost economic growth	No
Nyamhongolo Industrial Park	Development of industrial park adjacent to Nyamhongolo bus terminal and truck parking lot.	Yes



Mwaloni Fish market scores the highest in terms of implementation readiness; it also scores high in terms of development potential due to its local economic development importance as site of processing and a market for international export. New Igombe's high development potential score is driven by its contribution to pro-poor job creation; Old Igombe on the other hand offers export potential. In terms of implementation readiness, Old Igombe site is a more challenging project due to potentially high E&S risks.

It is proposed that a fisheries value chain approach is explored in IMC that combines investments in the Old and New Igombe landing sites, combined with targeted investments in Mwaloni Fish Market. Considering their importance, investments in all three sites have the potentially to amplify and re-enforce development benefits across the fisheries value chain.



Buswelu Market is located in a strategic location in IMC. The market's connectivity will be enhanced by two new road links that are currently under construction with funding by the World Bank under the Tanzania Strategic Cities Project (TSCP). The market is also located in adjacent to a planned bus station and multiple government offices and other commercial developments.

Kiloleni is a retail market, similar to Buswelu, but offers less opportunity in terms of broad based impacts, while Nyamhongo industrial park scores relatively low in both development impact and implementation readiness.

Project	Implementation readiness							Development impact							Total score	
	Alignment with existing plans	Project development stage	Governance structure	Technical capacity	Size (CAPEX)	E&S risk	Implementation Readiness Score	Local economic development	Pro-poor job creation	Climate resilient development	Food security	Improved environmental management	Gender and social inclusion	Public revenue		Development impact score
Old Igombe Fish Landing Site	2	1	0	2	0	0	5	2	1	1	1	2	0	2	9	14
New Igombe Fish Landing Site	2	1	1	2	1	1	8	1	2	1	2	2	2	1	11	19
Mwaloni International Fish Market	2	2	2	2	1	2	11	2	1	1	1	2	1	2	10	21
Buswelu Market	2	1	2	2	0	2	9	2	1	1	1	1	1	1	8	17
Kiloleli Urban Vending Market	1	0	1	2	1	1	6	1	1	0	1	1	1	1	6	12
Nyamhongo Industrial Park	1	0	0	1	0	1	3	2	1	0	0	0	0	2	5	8

Figure 25: IMC project screening scores.

Notes: Each criterion was subject to a qualitative assessment based on the information provided by the councils or collected by the Triple Line team, with a score of 0, 1, 2, reflecting no impact, moderate impact, significant impact. More information on the scoring criteria is available in the Annex 1.

### 3.2.3 TCC

TCC provided 17 projects for consideration, nine of which align with the objectives urban food systems.

**Table 4: TCC projects under TEI**

Project name	Project description	Aligns with urban food system objectives
Deep Sea Landing Station	Construction of new Deep Sea Fish Auction Market and its associated facilities	Yes
Youth Agriculture Centre	Promotion of the active participation of youth in the agricultural sector.	Yes
Sahare Abattoir	Tanga City council has no modern abattoir which implies Tanga population is exposed to substandard meat products which may be harmful to their health.	Yes
Liquid Nitrogen Plant and Cattle Dips	The proposed structure will be a liquid nitrogen plant and two cattle dips will therefore meet the liquid nitrogen requirements for storage of cattle semen and control of ticks and tick-borne diseases. The built-up space will provide business and service facilities.	Yes
Improvement of School Toilets	Improvement of school toilet facilities to ensure a safe and sanitary place for students.	No
Enhancing Data System	Improvement of council's IT system infrastructure	No
Construction of Bus Stands	Improving the accessibility of bus stops and the surrounding pedestrian infrastructure	No
Stormwater Drainage	Improvement of city-wide urban stormwater drainage system	No
Central City Solar Street Lighting	Introduction of clean solar energy to improve public street lighting.	No
Upgrading Earth Roads to Bituminous Standard	Rehabilitation and upgrading of urban roads	No
Solid waste management system	Development of efficient city-wide solid waste management system	No
Mgandini Market	Upgrading of Mgandini wholesale market and its associated infrastructures	Yes
One stop center for private sector development	To reduce administrative burden on private sector and boost economic growth	No
Makorora Market	Redevelopment of Makorora retail market	Yes
Mlango wa Chuma Market	Rehabilitation to reduce over-crowded; lots of spoilage during the wet season and no appropriate parking bay.	Yes
Small Scale Agro-industrial Park	Establishment of small scale agro-processing industrial area for horticultural crops, grains and tubers products.	Yes
Kasera Landing Site	Provide upgraded fish landing site and support fisheries' livelihoods while enhancing ecosystem protection and conservation	Yes

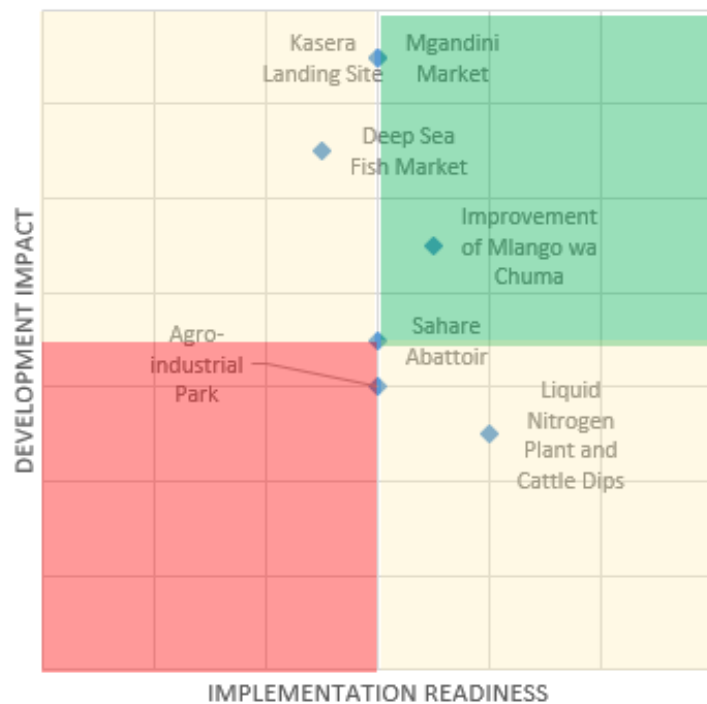
Mgandini Market is the largest wholesale market in the city and focuses on a wide range of produce, serving both local and regional areas as well as local businesses. Due to its role in the city system, it scores high in terms of development impact potential. It gets an average implementation readiness score despite having a Feasibility Assessment already, due to higher potential delivery risks due to the large size of the market and stakeholders involved as well as E&S considerations (notably temporary relocation of traders during construction).

Mlango wa Chuma market scores relatively high but offers less development impact potential compared to Mgandini market, although it potentially a less complex project and could be selected as an alternative to Mgandini market (or combined with it).

Kasera Landing site also scores high from a development impact potential, mainly due to the opportunities it offers for pro-poor job creation and food security. In terms of implementation readiness, it receives an average score primarily due to E&S risks as the landing site is within a mangrove area.

Deep Sea offers development impact potential but it is recommended that the project is excluded from further consideration due to limitations related to the location of the landing site, adjacent to the port development area, with limited access roads and no land available for expansion.

The rest of the projects considered in the PFA while relevant and relatively less complex, they offer less opportunities for achieving broad-based development benefits and impacts.



Project	Implementation readiness							Development impact							Total score	
	Alignment with existing plans	Project development stage	Governance structure	Technical capacity	Size (CAPEX)	E&S risk	Implementation Readiness Score	Local economic development	Pro-poor job creation	Climate resilient development	Food security	Improved environmental management	Gender and social inclusion	Public revenue		Development impact score
Deep Sea Landing Station	2	0	1	1	1	0	5	2	2	1	1	2	2	1	11	16
Youth Agriculture Centre at Tumbilini	1	0	1	1	2	2	7	1	1	0	1	1	1	0	5	12
Sahare Abattoir	2	1	1	0	1	1	6	1	1	1	1	1	1	1	7	13
Liquid Nitrogen Plant and Cattle Dips	2	1	1	1	2	1	8	0	1	0	1	1	1	1	5	13
Mgandini Market	2	2	1	1	0	0	6	2	2	1	2	2	2	2	13	19
Makorora Market	1	1	1	1	1	1	6	1	0	1	1	1	1	1	6	12
Mlango wa Chuma Market	2	1	1	1	1	1	7	1	2	1	2	1	1	2	10	17
Small Scale Agro-industrial Park	2	1	1	1	0	1	6	1	1	0	1	1	1	1	6	12
Kasera Landing Site	2	1	1	1	1	0	6	0	2	2	2	2	2	2	13	19

Figure 26: TCC project screening scores.

Notes: Each criterion was subject to a qualitative assessment based on the information provided by the councils or collected by the Triple Line team, with a score of 0, 1, 2, reflecting no impact, moderate impact, significant impact. More information on the scoring criteria is available in the Annex 1.

### 3.3 Project selection

A total of 35 projects identified by MCC, TCC and IMC were screened, with a sub-set of 20 projects aligned with urban food system objectives subject to a more detailed assessment based on implementation readiness and potential development impact criteria. Of the 20 projects, 8 projects are prioritized according to the validation provided by the Local authorities: 4 projects in IMC; 2 projects in MCC and 2 projects in TCC. In the case of IMC, 3 fisheries related projects have been proposed to be combined.

The prioritized projects are presented according to Quadrant Analysis as shown on the right. All projects can be categorized as no-regret except for Buhongwa and to some extent Mgandini which are more complex projects but with high development impact potential due to the role these markets play in the respective urban food systems.

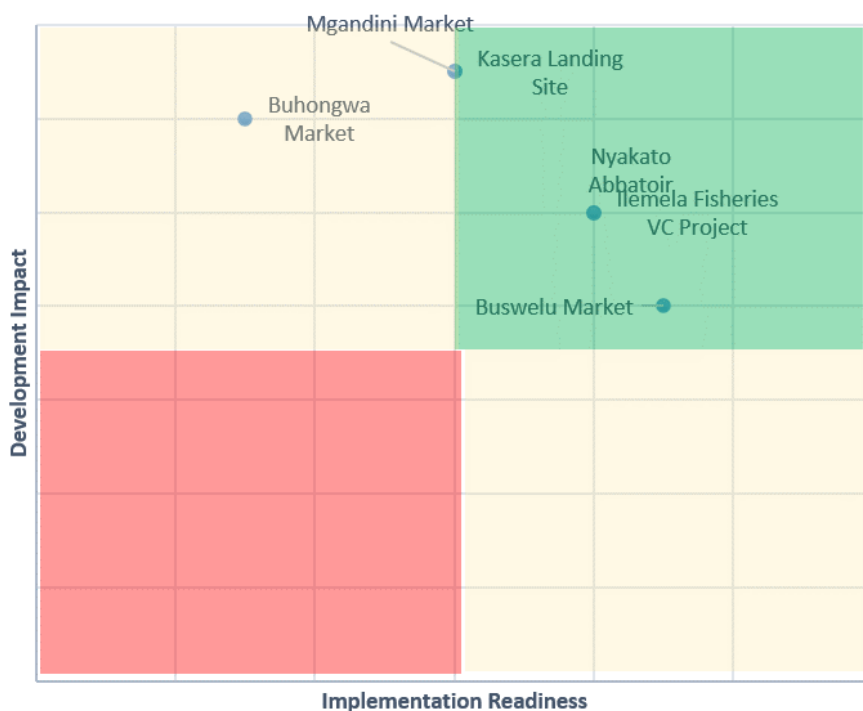


Figure 27: Final project selection.

The sub-section below provides key information of the selected projects. More detail is provided in six Project Fiche developed for the prioritized projects that accompany this PFA (provided separately). The Project Fiche provide further detail covering the following themes:

1. Basic project information
2. Project background and justification
3. Key stakeholders
4. Proposed objectives and expected results (impact)
5. Proposed activities
6. Due diligence and safeguards
7. Risk matrix / rating
8. Project preparatory activities

Preparation of the PFA and relevant Project Fiche was informed by a comprehensive assessment of the key food value-chains and the trading systems that support supply and distribution of food in Mwanza and Tanga, as well as a series of consultations and workshops carried out in January 2023 with a wide range of city-level stakeholders in IMC, MCC and TCC.

**Table 5: TCC projects under TEI**

Council	Project title	Project objectives	Indicative budget	Timeline	
TCC	<b>Upgrading and Rehabilitation of Mgandini Wholesale Market</b>	Mgandini Market acts as an agro-logistics hub, employing several thousand wholesalers, generating incomes through exports, and supplying basic agriculture commodities to the entire city. The proposed project will provide wholesalers and traders with improved trading environment that leads to reduction in spoilage, increase in incomes, better handling and hygiene, and hence improved quality of fresh produce to buyers.	EUR 12.4 million	2023-25 (36 months)	 <p>The map shows the project area in Mgandini, TCC. It features a legend with categories: motorway/primary (red line), secondary (orange line), tertiary (yellow line), unplanned settlement (red area), buildings (grey area), Transport hub (red circle), Fish landing site (orange circle), Retail market (green circle), Wholesale market (blue circle), Abattoir (purple circle), Indicative project scope (dotted area), and Stormwater drain (cyan line). The project scope is a large rectangular area with a dotted pattern, situated near a road and a river. A scale bar indicates 0, 50, 100, and 150 meters.</p>
	<b>Kasera Fish Landing Site</b>	The objective of this project is to provide upgraded fish landing site and support fisheries' livelihoods while enhancing ecosystem protection and conservation. Physical interventions will be low impact optimizing the use of nature based solutions (NBS) to improve the conditions around the landing site and restore and enhance the environmental assets. This will be combined with community sensitization and livelihoods enhancement activities.	EUR 6.9 million	2023-24 (24 months)	 <p>The map shows the project area at the Kasera Fish Landing Site. It features a legend with categories: motorway/primary (red line), secondary (orange line), tertiary (yellow line), unplanned settlement (red area), buildings (grey area), Transport hub (red circle), Fish landing site (orange circle), Retail market (green circle), Wholesale market (blue circle), Abattoir (purple circle), Indicative project scope (dotted area), and Access road (orange line). The project scope is a triangular area with a dotted pattern, situated near a river and a road. A scale bar indicates 0, 50, 100, and 150 meters.</p>

IMC	<b>Upgrading of Igombe Fish Landing Sites together with Mwaloni Market</b>	<p>Upgrade the landing sites and Mwaloni Wholesale market with better infrastructure and services and enhance the productivity and effectiveness of the fisheries value chain in Mwanza City. Building capacity of various actors in the VC to reduce post harvesting losses while protecting the lake, and increase incomes and value-addition. Since Mwaloni Market is the largest aggregation and distribution center, there is an opportunity to upgrade the market, identify options for expansion and provide horticulture fresh produce sellers with better infrastructure.</p>	EUR 7.6 million	2023-25 (24-36 months)	
<b>Buswelu Market Redevelopment</b>	<p>Buswelu Market lies in a strategic location in the center of a rapidly growing area in IMC. Proposed activities include redevelopment of the main retail market to increase trade and employment. Market redevelopment also has an important role to play in place-making as an element of wider urban regeneration when combined with construction of the new bus station in adjacent area and new road links investments.</p>	EUR 7.5 million	2023-25 (30 months)		

MCC	<b>Nyakato Abattoir and Market</b>	<p>The Nyakato Abattoir serves as the primary slaughterhouse for the entire city of Mwanza. This main objective of this project is to operationalize the abattoir as an environmentally sound profitable entity and create it as the center of a livestock process that improves the quality and profitability of the meat being prepared. The production of better quality meat should also reduce meat importation. More hygienic meat production, storage and processing should also reduce morbidity.</p>	EUR 3.7 million	2023-24 (24 months)	
<b>Upgrading of Old Buhongwa Market</b>	<p>The objective of the proposed project is to upgrade infrastructure and services, including re-organization of activities, to reduce spoilage, promote environment risk mitigation, increase value-addition and incomes of all actors in the supply chain, and ensure food security to households in Mwanza City. Given limitations of the current site, it is proposed that the market is re-developed as a retail market and wholesale activities are relocated to a new market to be constructed in a more suitable location.</p>	EUR 6.5 million (initial phase)	2023-25 (in phases)		

## 4 Preliminary Program Logical Framework

The preliminary program logical framework aims at clarifying the specific objectives of the proposed sustainable economic development program for the cities of Tanga and Mwanza as part of TEI Green and Smart Cities SASA Program for Tanzania. In the preliminary logical framework, specific attention is paid to the expected outcomes of the investment program targeting the trade and food system and climate change in the two cities.

The logical framework will be updated in the project preparatory phase of the investment program as it is at that stage that the specific scope of the proposed projects will be defined.

### Proposed program objectives and expected results (impact)

In developing the program's preliminary log frame, the main objective is to identify relevant priority projects that address the critical programming gaps and key development issues identified in the detailed diagnosis carried out in Mwanza and Tanga.

The preliminary program log frame is informed by a systems perspective that takes an integrated and spatial (territorial) approach to urban food systems.<sup>6</sup>

The **primary objective (goal)** of the proposed program is to support sustainable urban food systems through improved economic and trade-related infrastructure in the target councils (MCC, IMC and TCC). This reflects the broader, long-term change to which the investment program contributes at the city level.

Sustainable urban food systems contribute to achieving many of the Sustainable Development Goals (SDGs) (hunger and food, employment, health, environment) and cover climate issues (mitigation and adaptation). Accordingly, the main medium-term effect or **specific objectives (outcomes)** of the program include:

- **Improved food security** of target urban populations by improving access food and improving livelihood opportunities (higher incomes) that will also promote consumption of higher quantity and variety of food items with better nutrients.
- **Local economic development** by reducing post-harvest losses and increasing value-addition which takes place in markets and landing sites,.
- **Improved livelihoods and employment opportunities especially for women and youth.** Employment and income earning opportunities upstream and downstream in the selected food related value chains (VCs).

The three specific objectives (outcomes) are complemented by two important cross-cutting outcomes:

- **Improved environmental protection and climate resilience.** Including improved waste management systems at trading sites (no heaps of solid waste, on-site recycling of bio-degradable waste, etc.) and reduced vulnerability to climate-related hazard risks (notably flooding and heat).
- **Enhanced local revenue mobilization.** With a focus on increased city council revenue from the management and operation of food-trade related trade and VC infrastructure and provision of related services.

The specific objectives will be accomplished by the following five-type of outputs:

1. Redevelopment or upgrading of market infrastructure
2. Redevelopment or upgrading of fish landing sites

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<sup>6</sup> For more information on the key principles of a cities and food systems approach please refer to Balineau, G. et al. (2020) Cities and Food Systems: Rethinking the Role of Markets. Technical Report. No. 60 October 2020. French Development Agency (AFD).



3. Upgrading of abattoir
4. Improved food value chain management systems
5. Enhanced capacity of local authorities to develop and operate trade-related infrastructure.

Specific activities required to deliver the proposed investment projects (outputs) are summarized in the table below.

<b>On-site infrastructure and services</b>	<ul style="list-style-type: none"> <li>• Improving the landing sites and market's basic fabric of stalls, storage, access, circulation, lighting and shade, incorporating bio-climatic design principles as relevant.</li> <li>• Provision of necessary supporting facilities with improved offloading facilities; car parking; secure storage, including refrigeration; retail food outlets; toilets for traders and customers.</li> <li>• Value chain support such as retail areas for agro-products</li> <li>• Promotion of green/renewable energy for lighting the facilities and cold storage</li> <li>• Upgrading of management and BMU offices; and limited rental office space for market related activities; security.</li> <li>• Improved environmental management with solid waste management facilities; wastewater disposal to septic tanks, and stormwater drainage management.</li> </ul>
<b>Off-site infrastructure and services</b>	<ul style="list-style-type: none"> <li>• Offsite improvements of road and pedestrian access, traffic management, power and water supply where required, plus solid and liquid waste disposal</li> <li>• Nature based solutions (NBS) to improve the conditions around the markets and landing sites and restore and enhance the environmental assets</li> </ul>
<b>Support interventions</b>	<ul style="list-style-type: none"> <li>• Improved awareness of market vendors regarding various related by-laws, including improved safeguarding awareness related to the environment, climate and GESI.</li> <li>• Promotion of registered SMEs and co-operatives (formalization of the industry) to encourage investments and value-addition</li> <li>• Optimizing revenue from the markets and landing sites to sustain their upkeep and generate additional means of revenue over and above the established fees for stall or shop rental, parking, etc.</li> </ul>

This logical framework's causal pathway makes the following external assumptions:

- Local governance actors (public and private) are committed to supporting supply chain enhancements to improve market function for key food-related value chains
- There is dialogue, shared learning and understanding among councils, regional government and national government. Political buy-in to convince direct users to pay fees for improved services.
- Wider development activities in target councils areas are not in conflict with the program's investments.
- PO-RALG generates comprehensive understanding of the wider development partner intervention landscape with a view to both promoting coordination with others and reducing the risk of duplication.

This causal pathway makes the following internal assumptions:

- There is a credible information and evidence base for informing government decision-making.
- AFD remains well informed of local political economy and overall context, helping ensure that support provided is appropriate, politically sensitive and credibly incorporates social inclusion, gender, climate and environment concerns.

A preliminary program logical framework matrix and associated Theory of Change (ToC) diagram are presented in the following pages. As mentioned above, the logical framework matrix and associated ToC should evolve during the program preparatory phase.

	Results chain	Indicators	Baseline (value & reference year)	Target (value & reference year)	Current value (reference year)	Source and mean of verification	Risks / Assumptions
Impact (Overall objective )	Support sustainable urban food systems through improved economic and trade-related infrastructure	Urban Food System Index (to be developed)  To be presented, when relevant, disaggregated by gender and age.	The value of the indicator prior to the intervention against which progress can be assessed or comparisons made.	The intended final value of the indicator.	The latest available value of the indicator(s) at the time of reporting.	Program reporting and AFD monitoring; sources of information and methods to collect and report results to be determined in FS stage.	Not applicable.
	Improved food security of urban populations	Improved quality of food sold/purchased (measured against standards)  Access to affordable food (proportion of income spent on food as a percentage of household expenditure)	(same as above)	(same as above)	(same as above)	(same as above)	Household incomes should increase due to better jobs in food trade, reduced spoilage and value-addition to food)
Outcomes (Specific objectives)	Local economic development	Increased value-addition which takes place in markets and landing sites  Increased domestic and international exports  Increased private sector investment in urban food-trade infrastructure (assuming PPP projects within private finance are implemented)	(same as above)	(same as above)	(same as above)	(same as above)	Domestic investors willing to invest in trade-related infrastructure and food value chains (VCs)
	Improved livelihoods and employment opportunities especially for women and youth	Number of new jobs created (trade and fishing)  Number of new jobs created for women and youth  Net attributable income change for users of the food trading infrastructure	(same as above)	(same as above)	(same as above)	(same as above)	No major environmental, climatic, economic or financial shocks that affect the livelihoods

		Net attributable income change for other actors in the supply chain					
		Total number of users increasing income as a result of the program					
		Total number of women and youth increasing income as a result of the program					
Outcomes (cross-cutting objectives)	Enhanced local revenue mobilization (cross-cutting)	Increase in municipal/city council revenue from food-trade related infrastructure	(same as above)	(same as above)	(same as above)	(same as above)	Local councils enforce tax/levies collection
	Improved environmental protection and climate resilience (cross-cutting)	<p>Reduced exposure of markets and fish landing sites to flood risk and heat stress</p> <p>Hectares of land (area) rehabilitated and managed sustainably (e.g., mangroves protected or rehabilitated; total area with trees planted)</p> <p>Improved waste management systems at trading sites (no heaps of solid waste, on-site recycling of bio-degradable waste, rainwater harvesting, etc.)</p>	(same as above)	(same as above)	(same as above)	(same as above)	By-laws and regulations support protection and the sustainable management of environment and natural resources; application of E&S safeguarding
Outputs	Redevelopment or upgrading of market infrastructure	Number of markets upgraded and in operation with better climate resilience features	0	3 (2025) (2 in IMC and 1 in TCC)	(same as above)	AFD and city council monitoring	Proper project preparatory activities including the identification of E&S risks before commencement of projects
	Redevelopment or upgrading of fish landing sites	Number of fish landing sites upgraded and in operation with better climate resilience features	0	3 (2025) (2 in IMC and 1 in TCC)	(same as above)	AFD and city council monitoring	(same as above)

Upgrading of abattoir	Number of abattoir rehabilitated and in operation with better climate resilience features	0	1 (2025) (1 in MCC)	(same as above)	AFD and city council monitoring	(same as above)
Improved food value chain management systems	Number of food value chain support and sustainable livelihoods programs implemented	0	3 (2025) (1 per city)	(same as above)	AFD and city council monitoring	(same as above)
Enhanced capacity of LGAs to develop and operate trade-related infrastructure	Number of complementary TA activities implemented	0	3 (2025) (1 per city)	(same as above)	AFD and city council monitoring	(same as above)

## Activity Matrix

Activity	Means / costs	Risk / Assumptions
<b>On-site infrastructure and services</b>	<p><u>Means:</u> improving the landing sites and market's basic fabric of stalls, storage, access, circulation, lighting and shade; provision of necessary supporting facilities with improved offloading facilities; car parking; secure storage, including refrigeration; retail food outlets; toilets for traders and customers; value chain support such as retail areas for agro-products; upgrading of management and BMU offices; rental office space for market related activities; security; improved environmental management; wastewater disposal to septic tanks, and stormwater drainage management.</p> <p><u>Costs:</u> EUR 26.175 million (excluding contingencies)</p>	Sufficient funding can be mobilized and suitable contactor identified
<b>Off-site infrastructure and services</b>	<p><u>Means:</u> improvements of road and pedestrian access, traffic management, power and water supply where required, plus solid and liquid waste disposal</p> <p><u>Costs:</u> EUR 3.76 million (excluding contingencies)</p>	(same as above)
<b>Support interventions</b>	<p><u>Means:</u> improved awareness of market vendors regarding various related by-laws, such as cleansing and environment; promotion of registered SMEs and co-operatives (formalization of the industry) to encourage investments and value-addition; and optimizing revenue from the markets and landing sites to sustain their upkeep and generate additional means of revenue over and above the established fees for stall or shop rental, parking, etc.</p> <p><u>Costs:</u> EUR 6.3 million (excluding contingencies)</p>	(same as above)
<p><u>Total costs:</u> 43.5 million (including 20% contingencies)</p>		

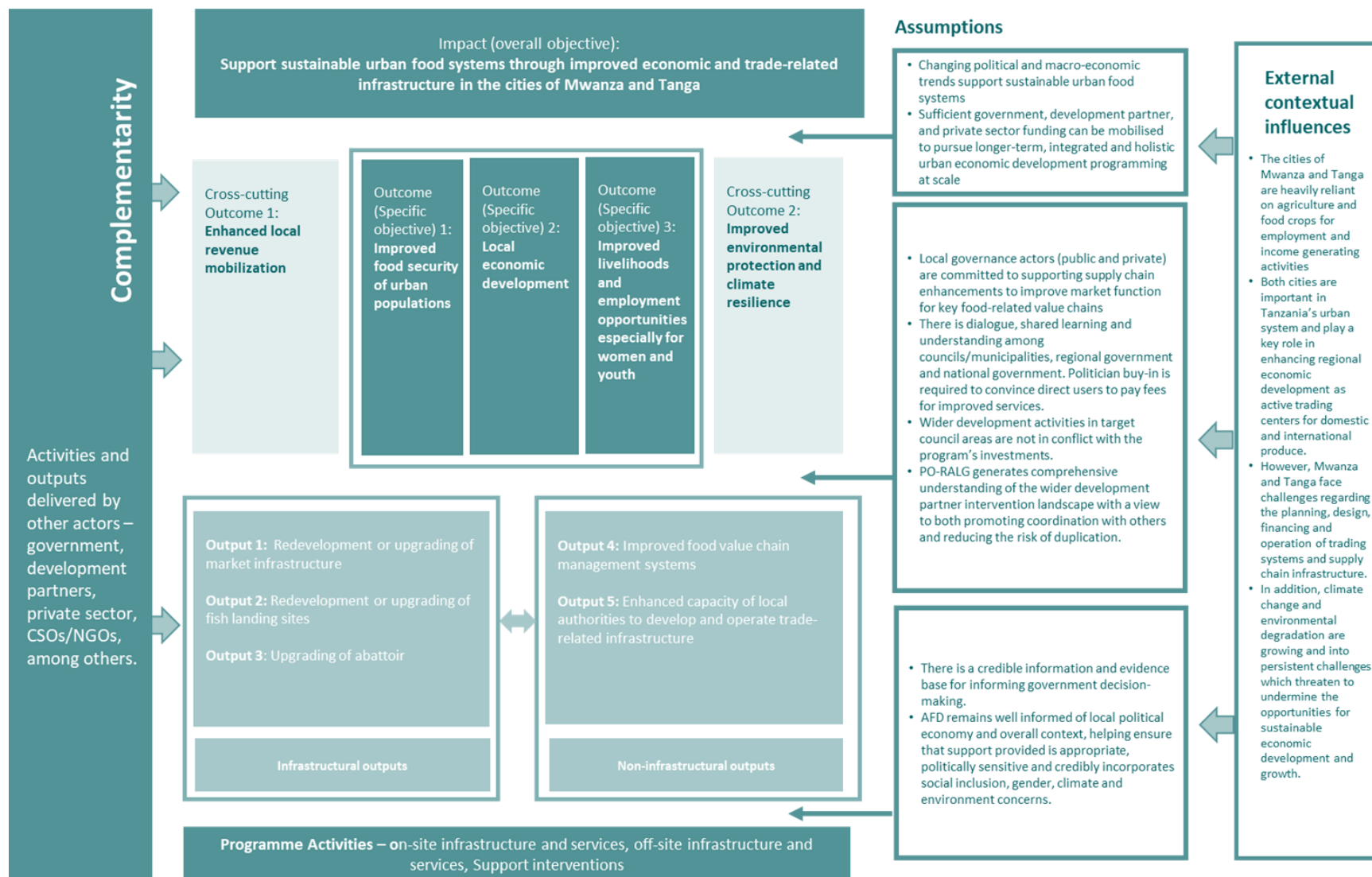


Figure 28: Proposed Theory of Change

## Critical Success Factors

This section identifies critical success factors that are necessary for the proposed investment program to achieve collective results and outcomes as articulated in the preliminary ToC and Logical Framework above.

Key success factors include:

- Express realism in expected outcomes where implementation readiness is low. In particular, systemic changes associated with non-infrastructure interventions in urban food systems and value chains can take a long time and change is often indirect and incremental.
- Investment projects and associated activities are meeting existing needs and gaps as identified by city councils, local communities and the private sector, and verified in the PFA and program preparatory activities that will follow.
- Interventions and associated activities are as inclusive as possible, incorporating the needs of local communities and wider project beneficiaries, including women, people with disabilities, youth, and the urban poor.
- Interventions and associated activities are climate resilient and have positive environmental and social impacts.
- Interventions and activities comply with all relevant Government of Tanzania social and environmental process and regulations as well as AFD E&S safeguarding policy and procedures.
- Interventions and associated activities are aligned with IMC, MCC and TCC priorities including adopted Strategic Development Plans and Physical Master Plans.
- Interventions and associated activities maximize development impact and Value for Money (VfM).
- Coordination and complementarity with other development partner interventions such as ENABEL's local economic development project, EU's Blue Economy program, and the World Bank's TACTIC, albeit not dependent on them.

## 5 Program Preparatory Work Plan

Based on the detailed diagnosis of food value chains and trade systems and PFA process, tested through stakeholder consultations, a final selection of projects will be made in each of the three target councils (MCC, IMC and TCC) to be worked up to a bankable form. This section of the Summary Final Report outlines the method for preparing the projects to a form suitable for financing. As explained in the preliminary Log Frame for the program in Section 4, the projects are aimed at supporting sustainable urban food systems through improved economic and trade-related infrastructure in the target councils.

The proposed program preparatory activities described below adhere to both AFD and Government of Tanzania guidelines and requirements relating to project planning and negotiations for obtaining loans and grants.

The program preparatory work plan comprises four main activities:

- Feasibility Studies (FS) of selected investment projects
- Detailed Engineering Designs (DED) with cost estimates of viable investment projects
- Complementary Technical Assistance (TA) activities
- Approval procedures as required by government and financing agencies.

### 5.1 Feasibility Studies (FS) of investment projects

Once the projects have been selected, the next step is to assess their feasibility. This will be done by a feasibility study (FS) which will determine if the project as selected is viable, and also if there are more cost effective means of accomplishing the same results. Feasibility will focus upon the technical, financial and economic aspects. Social, environmental and climate change aspects will also be fully assessed, particularly to ensure that there are either no negative impacts on these areas, or that they can be minimized and affected persons compensated accordingly. In addition, institutional arrangements and capacities will also be assessed as there is little point in proposing a project that cannot be adequately managed. Institutional and capacity gaps and constraints can be addressed through complementary TA support (see further below).

Minimum requirements of the FS report include:

	Requirement	Description
1	Rationale of the project	<ul style="list-style-type: none"><li>• Description of current situation to provide the basic justification for the need or issue the project will meet</li></ul>
2	Project aims and intended results	<ul style="list-style-type: none"><li>• Description of the aims of the project, intended impact and outcomes and how they align with the government's and the program's' strategies</li></ul>
3	Options to address project need	<ul style="list-style-type: none"><li>• Description of alternative potential solutions that could address the issues described in the above section and provide a simple justification for the preferred option. Usually the preferred option is that with the largest cost-benefit ratio. This now includes both internal project sustainability factors, such as food security; as well as external climate-related aspects, such as the carbon footprints of construction materials.</li><li>• Results of any surveys carried out, particularly to determine demand or affordability and inform the selected option.</li></ul>
4	Detailed activities and scope (technical feasibility)	<ul style="list-style-type: none"><li>• Review levels of service and standards for infrastructure provision, and if necessary, propose more robust climate change-related standards.</li><li>• Activities to be carried out with scale and scope including location map, plans and design details</li></ul>

		<ul style="list-style-type: none"> <li>• Technical feasibility of preferred option based upon ensuring that the project can be constructed and operated.</li> </ul>
5	Cost estimation	<ul style="list-style-type: none"> <li>• Source of costs and development of unit costs plus assessment of price contingencies to cover inflation over the period between feasibility and construction, and, if foreign currency used, exchange projected rate fluctuations.</li> <li>• Prepare a cost estimate (capital costs and O&amp;M costs), including and price contingencies and physical contingencies that cover any minor design or specification modifications</li> </ul>
6	Financial and economic analyses	<ul style="list-style-type: none"> <li>• A key requirement is to determine a financially sustainable business model that ensures sustainable operation of the facilities</li> <li>• Financial feasibility will be determined by projecting capital expenditure, recurring or operation expenses and revenues. While this should accommodate climate change impacts on inputs (mainly changes in availability, types and prices of traded items), this can be assessed for various climate change scenarios.</li> <li>• Revenue projections (depending on the revenue model) will require data on expected number of users, user charges and/ or availability payments from the government. Assumptions relating to user charges and/ or availability payments would have to be made in the context of prevailing government policy/ regulation and willingness to pay and hence this data would be essential for assessing financial feasibility. The aim of the financial feasibility exercise would be to check if the project internal rate of return (IRR) is higher than the minimum rate of return required on the investment – i.e. for the project to be financially viable income should be such that it covers operation and maintenance and either capital costs through depreciation or debt service.</li> <li>• For projects or discrete components of the project, such as an offsite road or drain that also benefits users outside the project areas, which are not expected to have direct financial recovery, an economic analysis of the project will be undertaken to make sure the project is beneficial overall and should be implemented.</li> </ul>
7	Institutional feasibility	<ul style="list-style-type: none"> <li>• Assess the capacities of the proposed implementing agency, owner and operator of the project as this can also inform the type of procurement and business model to be applied.</li> <li>• Any policy or regulation constraints or capacity building requirements should be identified.</li> </ul>
8	Environmental and social (E&S) impact assessments	<ul style="list-style-type: none"> <li>• The project design must comply with all relevant social and environmental process and regulations.</li> <li>• Where required environmental and social aspects will be assessed and if any resettlement is required, a land acquisition and resettlement plan will be developed for approval and implementation</li> <li>• An environmental assessment will include the preparation of an environmental management plan with costs and responsibilities. This will include actions to be taken both during construction and operation</li> <li>• Monitoring of compliance with any resettlement or environmental management plan should also be included in these plans with timings and responsibilities and capacity building if needed.</li> </ul>



	<ul style="list-style-type: none"> <li>The design and proposed operation should be assessed with regard to potential climate change impacts, particularly with regard to materials used and technology selection</li> </ul>
9	<p>Implementation arrangements and plan</p> <ul style="list-style-type: none"> <li>Implementation arrangements will identify the responsible parties for implementation including procurement arrangements for carrying out detailed design, supervision and construction</li> <li>Procurement arrangements proposing the procurement packaging; ie number and types of civil works, equipment and technical assistance contracts.</li> <li>The implementation to provide timings and responsibilities for carrying out detailed design, construction and other supporting activities such as the environmental management plan.</li> </ul>
10	<p>Major risks and proposed mitigation measures</p> <ul style="list-style-type: none"> <li>Risks areas cover, fiduciary, safeguarding, context, delivery, operational and reputational and include technical, financial, policy, political, institutional, environmental, climate, and social. Risks are assessed by their probability and impact with mitigation actions and responsibilities proposed.</li> </ul>

## 5.2 Detailed Engineering Designs (DED) of investment projects

A DED of a proposed project is done after the approval of the FS. The DED builds upon the work performed during feasibility, which is the base document for making investment decisions. As a final preparatory document, DED elaborates the most appropriate option selected by the FS to the point of preparing the project ready for implementation.

It involves developing detailed designs or modifying existing detailed designs to accommodate FS recommendations and revised costs, descriptions and technical specifications, bill of quantity (BoQ) for necessary inputs, completion schedules for works delivery, technical drawings, and drafting of tender dossiers for works, supervision and supply contracts in accordance with the Procurement Guidelines for AFD-Financed Contracts in Foreign Countries.

Minimum requirements for the DED report include:

	Requirement	Description
1	Detailed project description	<ul style="list-style-type: none"> <li>Aims of the work to be carried out</li> <li>Provide feasibility study and highlight key design aspects such as description of work to be carried out, maps and plans of the site and any design drawings, a description of the site, levels of service and standards to be used, and additional items such as resettlement or environmental needs to be considered within the design</li> <li>Specifications to be used in detailed design</li> <li>Required outputs of detailed design</li> </ul>
2	Site inspection	<ul style="list-style-type: none"> <li>Visit to site and detailed surveys of the site including soil surveys and assessment of off-site infrastructure.</li> </ul>
3	Technical specifications	<ul style="list-style-type: none"> <li>Detailed specifications for all items for construction including equipment, materials and labor with reference to relevant national or international standards to be applied.</li> </ul>
4	Drawings and calculations	<ul style="list-style-type: none"> <li>Design and structural calculations and production of drawings adequate to allow the construction of the project</li> </ul>
5	Detailed project cost estimates	<ul style="list-style-type: none"> <li>Source of costs and development of standard schedule of rates, contingencies, and preparation of detailed Bill of Quantities (BoQs).</li> </ul>

6	Implementation schedule	<ul style="list-style-type: none"> <li>Detailed implementation plan with milestones.</li> </ul>
7	Contract documents	<ul style="list-style-type: none"> <li>Full set of contract documents that will allow a contractor to submit a responsive tender.</li> </ul>

### 5.3 Complementary Technical Assistance (TA) activities

This includes TA to the future implementing agencies of the program required to facilitate project execution. Relevant TA activities can include training, study-visits, management, organizational and other expert advice to support future implementing agencies of the program and other institutions, as relevant, in developing/upgrading necessary technical know-how and management skills in project preparation and implementation.

Emphasis will be given on (1) key policy, legal or regulatory constraints that need to be modified to allow the project's implementation; and (2) capacity development needs required for preparation, procurement, implementation, management and/or operation. TA activities should also be in alignment with the institutional assessment under the FS stage, and could cover the following aspects:

- Operational plan and management model for trade related infrastructures
- Community engagement and co-design of market/landing sites
- Solid waste management solutions for market/landing sites
- Climate resilience and low carbon strategies

For each TA activity a TOR detailing the requirements for support will need to be developed. While each and every TOR will vary, there are some simple rules which can be followed to help their production. The table below provides a simple summary of some of the types of TA. For each type of TA, the table below describes the objectives, suggests stages for the scope of work and summarizes the typical types of output which could comprise the framework of the TOR. TORs for each study or survey proposal should be submitted to the relevant authority for approval and before proceeding to procurement.

Type of TA	Objective	Scope of Work				Outputs
		Stage 1	Stage 2	Stage 3	Stage 4	
<b>Capacity building and studies</b>	To improve physical, financial, technical or human resources and ensuring its sustainability , O&M, , Trade policy	Review of existing situation and data available	Assess detailed needs to meet objectives	Develop options and select most appropriate	Finalize outputs	Report with recommendations particularly on type of capacity building required
<b>Surveys</b>	To accurately assess existing situation and update data.	Review of existing situation and data availability	Design survey	Carry-out survey	finalize outputs	Physical plan or report with updated information
<b>Climate change vulnerability or impact assessment</b>	Assess climate change trajectory & identify	Identify key climate change issues, ie. temperature,	Assess damage to people, assets, resources &	Select best option to address these issues & prepare	Identify potential funding for recommendations	Report on detailed key climate change impacts

	measures to address negative impacts	rainfall, disasters, etc.	nature to prioritize climate impacts	further for implementation		Recommendations to address issues.
<b>Development of regulations</b>	To facilitate and provide more effective services	Assess government inclination to improve policy framework	If favorable, then design legislation as required. If unfavorable, identify alternative routes and advocacy approach	Draft legislation or regulations as required and ensure government concurrence	Finalize regulations with pathway for approval and critically adoption and application of new legislation	Report setting out and justifying the required laws plus means to ensure their use
<b>Community or business awareness</b>	To ensure that proposed beneficiaries are not only aware of the project, but also their rights and responsibilities. Thus,	Assess existing awareness and ownership in the project environment	Design approach to stimulate improved ownership. Sharing of information, peer learning, and know how through an active participation in workshops, seminars.	Pilot approach to assess its impacts	Finalize guidance and recommend means for its dissemination	Report identifying existing beneficiary awareness and means to ensure improvements can be delivered and sustained
<b>Detailed design and document preparation</b>	To allow a contractor to submit a bid	Review feasibility study	Finalize contracting arrangements	Determine accurate costs	Finalize bid documents	Final bill of quantities, detailed drawings and bid documents
<b>Construction supervision</b>	To ensure good quality construction on time and within budget	Procurement assistance (not always necessary)	Quality control	Supervision of work	Stages 2 and 3 done concurrently	Monthly progress reports

## 5.4 Approval procedures

Completion of the FS, DED and TA activities must follow AFD and Government of Tanzania (GoT) approval procedures. On the GoT side this process will involve the implementing agencies, Sector Ministry (PO-RALG), and the Ministry of Finance and Planning (MoFP) through the National Planning Commission, Technical Debt Management Committee (TDMC), and National Debt Management Committee (NDMC). On the AFD side it will require the involvement of the AFD appraisal, and AFD/EU Board.

The GANTT chart included in the next page visualizes the project schedule and key project preparatory activities.

**Table X: Proposed program schedule**

Phase	Activity	2023				2024				2025			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	Procurement of project preparatory activities by AFD		30 Apr										
2	Setting up task force for each utility		30 Apr										
3	Launch of Feasibility Studies (FS)			30 Jun									
4	Launch of Technical Assistance (TA) activities			30 Jun									
5	Presentation of project to National Debt Management Committee (NDMC) and AFD/EU Board				31 Dec								
6	Launch of Detailed Design and E&S safeguards					31 Jan							
7	Signing of financing agreement							30 Sep					
8	End of AFD activities									31 Dec			
9	Procurement of contractor by PO-RALG and city councils									31 Dec			
10	Commencement of construction										31 Jan		

# Annexes

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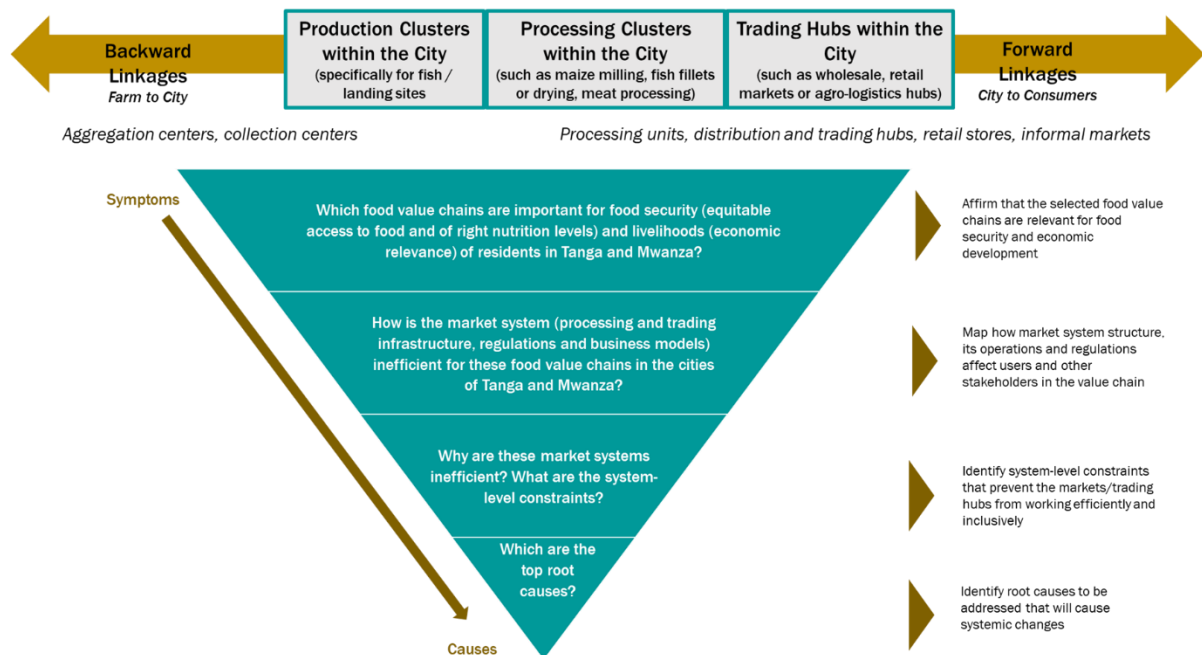
# Annex 1. Approach and methodology

## Activity 1: Assessment of urban food systems through a value chain approach

Assessing each city’s food system through a value-chain approach requires the identification and mapping of a range of linked economic activities from production sites (crop growing areas, fishing locations), through to processing sites, and trading and transportation hubs present in each city. We described and analyzed the position of various economic actors along this chain to assess how each is benefiting economically as value is added to raw products such as fish, fruit, vegetables, cereals, and meat. A key objective was to identify both the symptoms and root causes of constraints within each value-chain, and the actions city authorities, their partners, and other players within each value can take to promote more value-add and resilience within the food systems. Unlocking these constraints should lead to more opportunities for employment, increased incomes, and sustainability of livelihoods in Mwanza and Tanga.

For the purpose of this assessment, we refer to a value chain as a group of products that are similar in nature. For example, the grains value chain could include maize, beans, wheat, and other such similar products, and likewise livestock value chain would include by-products of meat and dairy for all different types of animals. Although the jurisdiction of the three city authorities remains the main focus of the assessment, the economic geography of value-chains and related supply and distribution chains are not confined to these boundaries. For the case of Mwanza, most food-related value-chains are common across both MCC and IMC areas. However, we have drawn attention to any specific characteristics that relate to these distinct administrative units: location of production, process or trade hubs, for example, and any implications for the respective city authorities.

### Food-related value-chain assessment: conceptual framework



There were five steps to undertaking the value chain assessment as shown below.

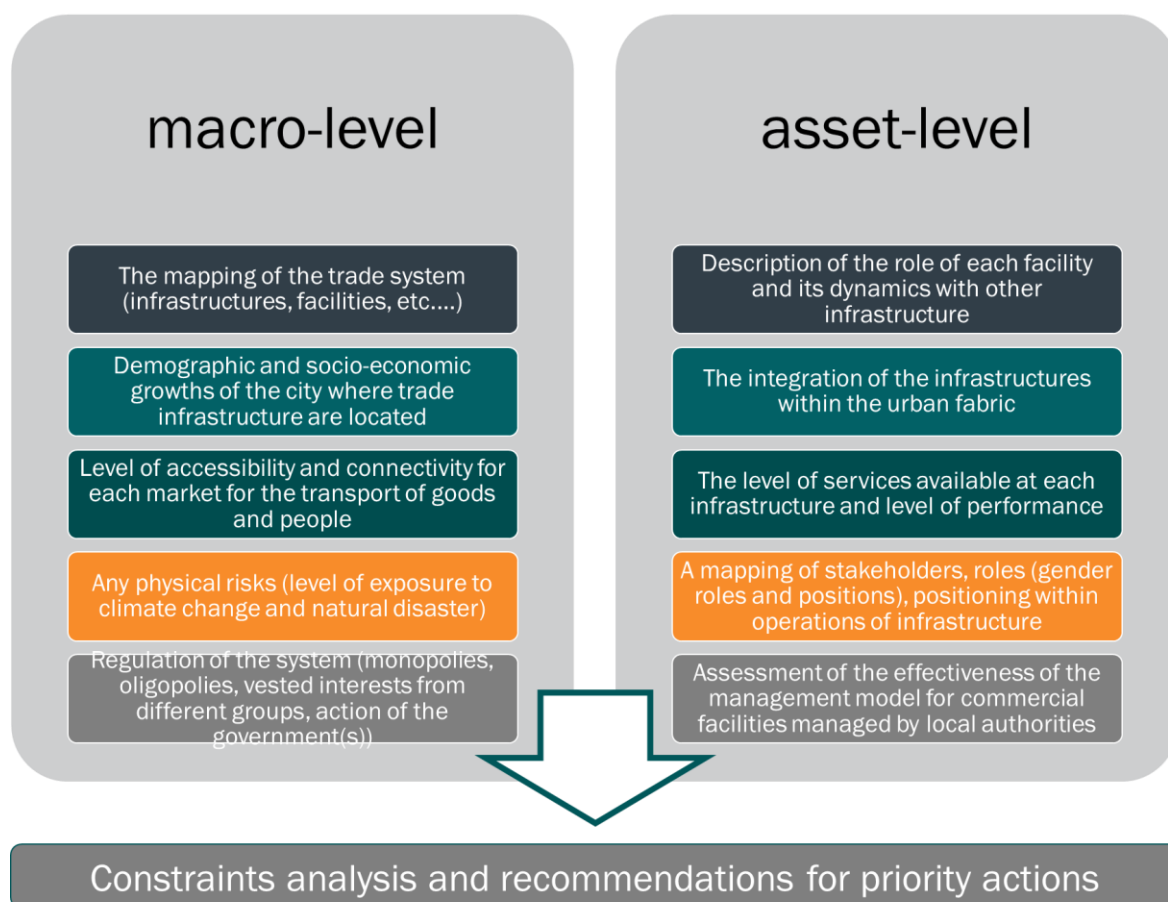


## Activity 2: Assessment of the commercial supply and distribution chain within both cities

The assessment focused on existing infrastructure within the two cities that directly cater to the key value chains identified, broadly categorized as (1) production and processing hubs such as landing sites for fisheries and processing hubs for drying fish or producing fish fillets; (2) trading hubs such as common storage infrastructure for fresh produce, distribution hubs for wholesalers and retailers, market infrastructure and among others; and (3) other support infrastructure for food value chains such as ports and airports for exports of fish and other fresh produce, bus stations and parking facilities used for transporting food products.

The assessment was carried out at two-levels, i) a macro-level assessment, taking in the physical and socio-economic context of the trading system infrastructure; and, ii) an asset level assessment of the key trading facilities as follows:

### Trade system assessment: conceptual framework

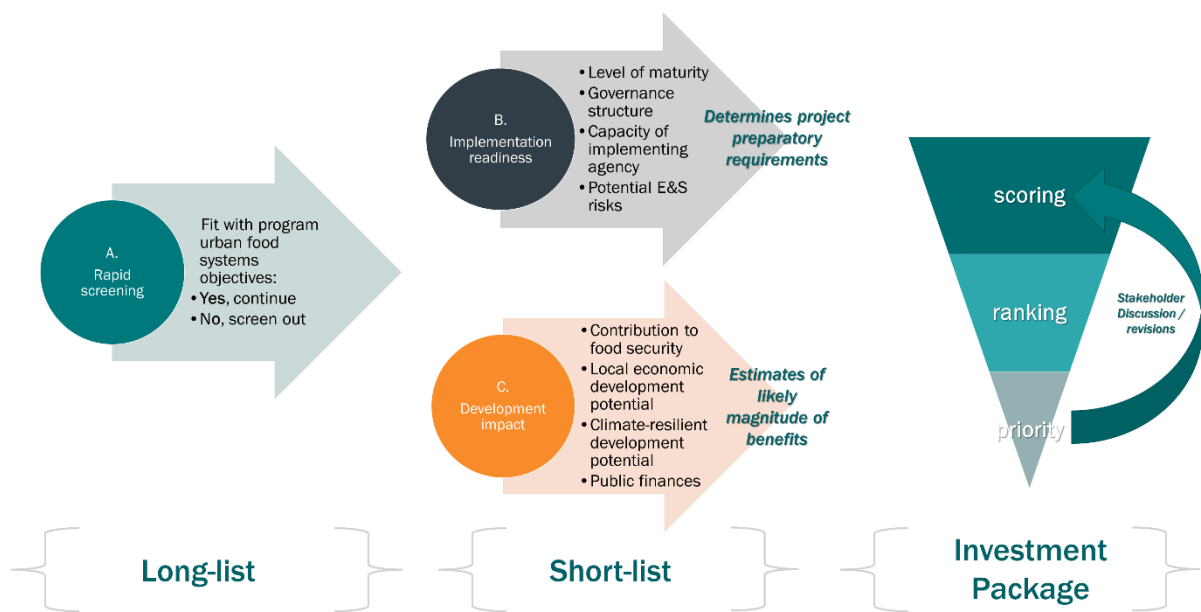


## Activity 3: Assessment of the proposed list of projects in both cities

The Pre-Feasibility Assessment builds on the value-chain analysis and trade systems assessment. The primary objective of this assessment is to arrive at a shortlist of potential infrastructure projects for each council that would deliver on sustainable urban development objectives, framed by an understanding of the importance of urban food systems.

The figure below shows the step-wise process followed for PFA. At the first step of the process, projects are screened against two relevance criteria to proceed to pre-feasibility assessment stage. They must (1) align with analysis of constraints to urban food systems and provide potential to make contributions to local food security, livelihoods, jobs and income earning opportunities, and the building of resilience to climate change; and (2) be included in local development plans or master plans or has otherwise been formally identified as a priority by the city council.

## Step-wise Pre-feasibility Assessment Process



The second step includes a multi-criteria analysis of implementation readiness to determine the ease of implementation and potential project preparatory requirements.

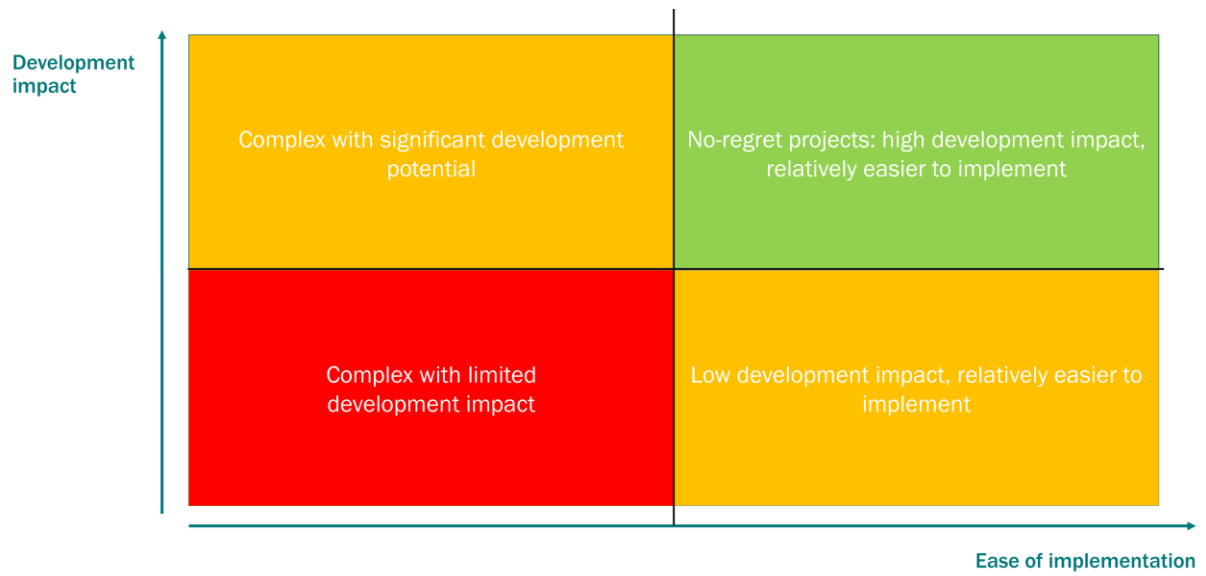
Coherence with existing local plans/ national policies	• Policy fit should with specific reference to economic development and poverty reduction. Projects that may project demonstrate a logical case for intervention but are not a policy priority are not shortlisted.
Project development stage	• Determined by how advanced the project is and how long it has been in the pipeline.
Governance	• Determined by the complexity of the governance structure needed for successful implementation.
Technical capacity of potential implementing agency	• Extend to which the scope and location of proposed project activities are within the existing capacity of the implementing agency. For some projects complementary TA and capacity building support may be required.
Likelihood/impact of potential E&S risks	• Extend of potential environmental and safeguarding risks for proposed infrastructure and associated value chain enhancement investments and activities.
Size of project (value in EUR)	• Required capital investment, where a smaller capital investment is taken to imply a smaller, simpler project.

In the third step multi-criteria analysis is used to estimate the likely magnitude of benefits.

Local economic development	• Extent to which the project could be expected to generate economic development benefits that are broad-based in nature.
Food security	• Potential contribution to local food security.
Pro-poor job creation	• Extent to which the project could be expected to generate employment or income earning opportunities or support sustainable livelihoods
Climate resilience development potential	• Extent of opportunities to adapt to the impacts of climate and other hazards (i.e., reduced exposure/ vulnerability to flooding, drought, landslides etc.) or extent of opportunities to reduce GHG emissions – (i.e., production, processing, transport, distribution of food)
Improved environmental management potential	• Extent to which the project provides opportunities for mitigating environmental risks or enhancing ecosystem assets.
Gender and Social inclusion (GESI)	• Extent to which the project provides opportunities for promoting inclusion of vulnerable groups (including women, girls, elderly, and people with disabilities)
Public revenue	• Extent to which the project would generate revenues for the local authority taking into account CAPEX and OPEX.



Results from the multi-criteria assessment are then presented according to Quadrant Analysis as shown below.



## Annex 2. Climate risk and vulnerability assessment approach

Tanzania is highly vulnerable to the impacts of climate change, notably increased seasonal variation in rainfall and temperature and frequent exposure to both droughts and floods. In addition, economic development within Tanzania is responsible for increasing contributions to emissions through industrial, construction, transport and agricultural sectors. Cities themselves are at the frontline in terms of exposure to climate hazards and contributions they make to global warming. As such climate change issues are at the center of this PFA and the future program support tied to CICLIA funding.

More generally, the environmental sustainability of economic activities needs to be fully considered. There is potential for food value chains to create environmental externalities from production to distribution and trading.

The PFA adopted an ecological approach towards understanding the potential for expanding and or improving the sustainability of value chain and trade systems in Mwanza and Tanga. To ensure both environmental and climate-related concerns were considered the PFA used a number of methods to identify key risks and recommend mitigative measures:

- **Profile environmental sensitivities, climate and natural hazards, risks, and vulnerabilities for each city council area** - consulting existing plans, policy documents, and literature to define baseline climatic trends, exposure of people, infrastructure and other assets to climate hazards, underlying stressors that may contribute to risk.
- **Value-chain and trade system analyses** – key informant interviews with value chain actors to establish any ecological limits to value chain operations; plus, any specific vulnerabilities from climate or other natural hazards, and any emissions related concerns related to value chain activity; analysis of data/media reports etc. relating to exposure and losses from historic climate events (floods, heatwaves etc.); geospatial analysis of exposure of trade systems infrastructure to climatic hazards (flooding, drought, heat, sea-level rise etc.)
- **Screening of proposed projects against climate risk, vulnerability and mitigation, and environmental impact criteria** –we used best available data and professional judgement to assess the potential reduction in exposure or emissions that projects could be expected to deliver subject to design considerations.

Some provisos are nonetheless required. The climate assessment at the PFA stage should be seen as an overview of climate-related risks and vulnerability, rather than a full assessment. The findings of the assessment usefully suggests the locations and/or topics where more thorough, detailed and fit-for-purpose climate change vulnerability or impact assessments should be undertaken during the program preparatory phase.

## Annex 3. List of policies and regulation

#	Policy/Regulation	Brief Description
1	National Fisheries Policy 2015	Policy is a replacement of the former 1997 fisheries policy. It emphasizes on fisheries resource management, aquaculture development, aquatic environmental promotion and need for varied types of investments (including acceptance of PPPs) to address wider challenges in the sector. The policy provides guidance on existing challenges and types of interventions required to achieve National Development Vision 2025.
2	Tanzania Fisheries Research Institute Act 2016	Tanzania Fisheries Research Institute Act No. 11 of, 2016, identifies TAFIRI as a Parastatal body responsible for carrying fisheries and aquaculture research in all fresh and marine water bodies. The institute has been mandated to promote, conduct and coordinate research within and in relation to any part of the territorial waters.
3	Fisheries Act 2003	The Act is a written ordinance that outlines the roles of responsibilities of the Ministry of Livestock & Fisheries to promote and protect the fisheries industry. It further outlines a legal requirement to establish various institutions and regulations to manage and control fish and fish landing sites, issuance of licenses, enforcement of quality and standards, and various penalties applicable if the Act is not followed.
4	Aquaculture Development Act 2019 (Amendment to Fisheries Act 2003)	The Fisheries Act was amended to include promotion of aquaculture industry in Mainland Tanzania. The amendment includes drafting of Aquaculture Development Plan and Aquaculture Development Fund (both work in progress) and various regulations to monitor the industry.
5	Deep Sea Fisheries Management & Development Act 2020 (Amendment to Fisheries Act 2003)	This is an amendment to the Fisheries Act to legally establish Deep Sea Fishing Authority and its roles and responsibilities in (a) issuing fish vessel and fishing licenses, (b) monitoring fishing activities, including surveillance and suspension of licenses in case of fraud practices and among others. The Act is applicable to Mainland Tanzania and Zanzibar.
6	The Fisheries Laboratory Fees Regulation 2020 (Amendment to Fisheries Act 2003)	This amendment provides revisions in fees applicable to inspect all fish resources whether used for consumption or ornamental purposes (in aquariums).
1	Livestock Identification, Registration & Traceability Act 2010	The Act requires all livestock in Mainland Tanzania to be registered at the place of origin and traced in the supply chain. Establishment of livestock markets and inspection centers have contributed to improved traceability.
2	Meat Industry Act 2006	The Act mandates establishment of Annual Council within the Ministry of Livestock & Fisheries, Tanzania Meat Board and requirements to register meat processors and traders
3	Tanzania Livestock Research Institute Act 2012	This Act was introduced to legally establish the Livestock Research Institute and provide guidance on its mandate, operations, financing and organizational structure
4	Animal Diseases Act 2003	This Act was the earliest one to recognize the need to inspect animals for consumption purposes. The Act lays down all the quality inspection

	requirements for live animals, with specific emphasis on detecting diseases.
5 Veterinary Act 2003	The Act provides guidance on registration of veterinarians, enrollment of paraprofessionals and assistants and establishment of the Veterinary Council
6 Grazing-Land and Animal Feed Resources Act 2010	An Act for the management and control of grazing lands, animal feed resources and its trade
1 National Horticulture Development Strategy and Action Plan 2021-31	The strategy identifies various hurdles in the horticulture sector and elaborates of 8 strategies comprising of 30+ interventions to expand the sector in domestic and export markets