

Case study on health-promoting urban food systems in Masvingo



Background

A number of initiatives promoting healthy urban food systems are underway in urban areas of Zimbabwe, but these promising approaches are not always systematically documented, known and shared to support exchange and learning. To address this, the Urban Councils Association of Zimbabwe in association with the Training and Research Support Centre in EQUINET, with review input from Ministry of Health and Child Care (MoHCC) is implementing work in 2022-23 to gather and share evidence on initiatives underway in Zimbabwean cities/towns to promote healthy food systems to share and promote uptake of promising practice through UCAZ in Zimbabwe and through EQUINET in east and southern Africa. Masvingo is one of the urban case studies, using a collectively developed shared framework.

Masvingo context for urban food systems

Masvingo, the provincial capital of Masvingo province, is one of the oldest cities in Zimbabwe. It includes six high-density formal settlements (Mucheke, Runyararo, Rujeko, Majange, Sisk, and Hillside) and three low-density suburbs (Rhodene, Zimre park, and Eastvale). The city had an estimated population of 90 286 in 2022 (ZimStat, 2022). Youth emigration to South Africa for improved economic opportunities and a reduction in rural to urban migration have led to a decline in the city's population growth (UN DESA, 2019). In 2022, emigration from Masvingo province was reported to be 23% of the population, 68% of whom were male (ZimStat, 2022). The city has a tropical savannah climate with limited and uncertain rainfall, leading to livestock management, particularly cattle ranching and wildlife, as the most prominent economic activity, together with small-scale horticulture farming, and manufacture and waste recycling of plastic products. The significant historical and cultural assets of the city also make it a tourist destination in Zimbabwe



Masvingo in Zimbabwe
GISGeography Under CC

Urban food systems in Masvingo

Food security in Masvingo city, as for the wider country, has been affected by drought, economic challenges and household poverty, with the COVID-19 pandemic adding to this. The city draws on food sources from local manufacturers and imports from South Africa, with the border about 300 km away. Informal and formal importers provide grocery items, especially dry foods (cereal grains, maize meal), cordials and carbonated drinks, cooking oil, peanut butter, sweets, and recently meat products. Many residents also practice urban agriculture (UA) to provide food and support income. There is limited nutrition data for the city, and no nutritionist employed by the Council. However available data indicate a prevalence of under 5-year-old stunting of 26.8% and of wasting of 2.8%, with 68% of this age group receiving vitamin A supplementation in the last 6 months (Knoema, 2023).

Produced March 2023. Written by Suzanne Hazel Madamombe City of Masvingo, with guidance, peer review and technical edit from Dr. R Loewenson, Mr. A Kadungure, TARSC; Mr T Machinda, UCAZ and Mr V Nyamandi, Ministry of Health and Child Care (MoHCC). The author expresses gratitude to the Town Clerk and Management of Masvingo City Council for their never-ending support for this report.

City of Masvingo

with Urban Councils Association of Zimbabwe (UCAZ), and Training and Research Support Centre (TARSC)



in the Regional network for Equity in health in east and southern Africa (EQUINET)



The city's food management system covers all food imported, produced, processed, and marketed. It aims to provide food security; protect public health by reducing the risk of food-borne illnesses; protect consumers against the consumption of unsanitary, unwholesome, mislabelled, and adulterated food, and to facilitate trade and consumer confidence in the city's food system to contribute to economic growth.

Promoting food security, food safety and control of ultra-processed foods

While food availability is important, available food must also be safe, to prevent food-borne diseases such as food poisoning from consumption of contaminated food. Control systems thus seek to monitor food quality and ensure that food is produced, handled, manufactured, consumed, and disposed of in the safest manner. Food quality monitoring is a regulatory activity by national or local authorities to ensure that foods are safe wholesome and fit for human consumption, that they adhere to safety and quality requirements, and are accurately labelled during production, handling, storage, processing and distribution (FAO, 2022). In Masvingo City Council, food monitoring is implemented by the Health services department through the Environmental Health section.

Food quality monitoring in Masvingo is implemented in line with **legal standards** on the importation, manufacture and sale of food found in the Food and Food standards Act [CAP 15:04] and the provisions relating to food safety, child nutrition, safe water and sanitation, livestock slaughter, control of animal-borne disease and appointment and duties of environmental health officers in the Public Health Act [CAP 15:17] (GoZ 2016; 2018). The city also monitors and enforces food-related by laws. By laws cover areas such as unlicensed vending in the central business district (City of Masvingo, 2022a).

The Council is drafting a number of proposed new by-laws under the Public Health Act [CAP 15:17] to control health risks from environment, food, solid waste, air pollution and other nuisances. A Food Hygiene by-law has been drafted for national approval. It stipulates the minimum standards food traders should adhere to; the process for licensing; and offenses related to poor food safety. This by-law aims to address gaps in current law due to changes in the food system, such as in the growth of open-air food providers. Stakeholders from commerce, industry, councillors, academia, and the community were consulted during the drafting.

Current law requires that plans of all **food premises** (bakeries, hotels, takeaways, general dealers, supermarkets, butcheries, restaurants, school, hospital and other institutional kitchens, abattoirs and markets) are approved before construction commences. Environmental health officers, town planners, and engineers work as a team to approve plans and to license establishments that meet standards. The council then routinely monitors maintenance and improvement on standards. A range of issues are scrutinised during this assessment, including adequate floor space for working surfaces, refrigerators and cookers; ventilation (a window area that is 10% of floor space, 50% of which must be able to be opened); provision of an extractor fan, sinks with both cold and hot water and adequate lighting; a ceiling that is at least 3m from the floor and use of rodent-proof materials at all entrances. Food premises should provide food handlers with light coloured uniforms, headgear and medical checks from a public hospital; and should regularly fumigate and lay traps for insect and rodent pests. Once construction is commenced, the premises are inspected by building inspectors, and must be issued with an occupation certificate before the building can be used.



Environmental health officer conducting a food inspection. S Madamombe, 2023

Routine food inspections are implemented daily by environmental health practitioners (EHPs) of food premises in both formal and informal sectors. More inspections are now being done in the informal sector where sub-standard premises may expose food to contaminants. While there are legal standards, their implementation remains a challenge due to resource and economic constraints, particularly for low income vendors and small businesses seeking to sustain their families and make ends meet.

Where conditions are highly unsafe, premises can be issued with closure notices. Generally, where problems can be remedied, the health inspector educates the operator on issues to address. Food vendors in market places, schools, and clinics are educated weekly to increase food safety awareness. The same education is also provided to informal food traders before they are issued with legal notices, although their adherence to recommendations is often weak. Informal food traders are allocated vendors stalls with adequate facilities for public health, but they often do not use these as they prefer to compete for customers at shop entrances. When the municipal police disrupt this to enforce sale at established sites, vendors resist and police face an angry backlash.

During inspections, food that is unsuitable for human consumption is usually detained and destroyed to avoid risk to the public. A team dispose the condemned food, including the EHP, municipal police, the Zimbabwe Republic Police and the owner's representative, to confirm satisfactory disposal. If the food can still be safely eaten by animals, it is provided to the animal welfare organisations (SPCA). If not, it is buried or burned. The food most commonly condemned in rural butcheries is meat. Masvingo has experienced an anthrax outbreak since October 2022 and the City Council declared Masvingo province as a 'non-inspected meat zone', with all uninspected meat condemned.



Environmental health officer conducting a food inspection. S Madamombe, 2023

Vending of cooked meat and maize meal also often takes place in unlicensed settings by informal vendors. These vendors also are a major market for uninspected meat, including meat from stock theft, or from unauthorized abattoirs, commonly referred to as "bush kills." The latter are known for unhygienic killing and processing methods, raising the risk of food-borne disease. These meat sources increase consumer health risks in Masvingo, and when found on inspection, the meat sold is condemned.



Food from illegal Sadza Vendors being condemned. S Madamombe, 2023

Ultra-processed foods such as sweetened drinks, crisps, sweets, and other foods containing high levels of sugar, fats, salt and additives are mainly imported into the city. Masvingo city does not have a local food manufacturer. Periodic inspection is also done of the marketing of these foods, with samples collected and taken to the Government Analyst Laboratory for analysis. For example, samples of a sweetened orange juice manufactured in Zambia were recently taken to the Government Analyst Laboratory. When the product labelling was found to fail to meet the recommended standards, including on declaration of contents, the product was removed from sale.

During inspections, EHPs verify operating certificates, test food handlers by taking swabs of hands, and also take swabs from working surfaces and samples of the food itself. The food samples and swabs are sent to Masvingo Provincial Hospital to isolate the microbes. Preservative ingredients and chemical contaminants are isolated at the Government Analyst Laboratory and at the Standards Association of Zimbabwe Laboratory. Once the results are determined, they are communicated to the food handlers or operators, and follow-up action is taken based on the result.

MASVINGO PROVINCIAL HOSPITAL LABORATORY	
Title: Laboratory Request Form	Document Number: MPHL-QMS-F-078
Revision Number: 0	Effective Date: 01/11/15 Page 1 of 1
Patient's Names: CARAVAN Park	Nature of Specimen: Culture
Hospital/OI No: DUTE	Examination required: Non lactose fermenting Coliform and a growth of Klebsiella species obtained
Doctor: [blank]	Clinical data: [blank]
Date Received: 26/07/22	Date of collection: 27/08/22
Time: [blank]	Time of collection: 11:00 AM
Test run by: [blank]	Reviewed & Authorised by: [blank]

An example of the Results of swabbing of the plate, Primary Data, 2022

The swabs test for sources of food-borne disease. This includes contamination by bacteria and viruses, such as staphylococcus, salmonella clostridium perfringens and campylobacter, or by parasites, and microorganism (fungal) toxins. Samples should also test for metals such as lead, mercury and cadmium, which may contaminate food through air, water, or soil pollution; and for organic pollutants, such as dioxin and polychlorinated biphenyls (PCBs), which are by-products of some industrial processes (Boslaugh, 2023). Tests for infectious agents or toxins require faecal or other bio-samples, but Masvingo faces a constraint in doing this, and the public health laboratory lacks the reagents to test the samples. Addressing this challenge is important for improved protection against health risks.

Urban agriculture and local food processing in Masvingo

Urban and peri-urban agriculture offers a further strategy for food security in Masvingo. While urban agriculture (UA) is generally understood to include crop-growing and livestock-rearing in urban areas, there are wider definitions that include the associated value chains, such as local processing and marketing of urban grown food (FAO, undated).

Prior to Zimbabwe's independence, urban residents were allowed to grow food crops in their backyards, but the black population in townships lacked both the space and tenure for UA, and were expected by authorities to farm in their rural homes. Urban food production was thus heavily controlled and attempts practice off-plot UA was illegal.

After independence as tenure became permanent backyard gardens and off-plot UA have expanded in residential areas and open spaces in the city. To address the rise in UA practice, and its role in urban food security, Masvingo City council developed an Urban Agriculture by-law in 2022 (City of Masvingo, 2022b). This by-law stipulates the eligibility criteria and process for obtaining a piece of land for agricultural purposes. It sets the standards for and offenses related to UA, such as watering of crops using wastewater; engaging in agriculture in undesignated areas or without a permit; or stream bank farming and other practices that lead to siltation. The local authority strategy draws from and is guided by Zimbabwe's Food and Nutrition Security Policy (Goz, 2012) of Zimbabwe (2012). This policy sought to move beyond narrow technical interventions to facilitate multi-sectoral broad-based collaborative approaches for addressing food and nutrition security.

The city identifies UA as one of the important livelihood strategies for many urban residents and a method for alleviating poverty and improving household food security. To facilitate multi-sectoral broad-based collaborative approaches, the local authority identified open spaces to be used for agricultural purposes, and set aside land for this within the city. The plots were identified with town planners and, in compliance with the national Environmental Management Act and the Wetland Act, prohibited UA in wetlands and along stream banks.



Plot along Great Zimbabwe with Urban Agriculture
S Madamombe 2023

All residents are eligible to be beneficiaries of land allocated for UA, and applications for land are made through the Council Housing department. The agricultural land is leased for as little as US\$30 per hectare per planting season. While lease payments generate income for the council, the approach has made land available at an affordable price to residents, while taking into account protection of water bodies and the environment in the allocation of land. Urban farmers are also trained through the Department of Agriculture and Rural Extension (AREX) to increase productivity on these plots. There are still challenges. In 2023, for example, as has been the case in earlier years, there are indications of a poor harvest due to poor rains received in Masvingo, with low rainfall leading to crop-wilting.

A further UA strategy in the city is enabling **nutrition gardens**. Most backyard gardens grow green vegetables such as rape, kale, onions, tomatoes and carrots and local residents in some areas form farming clubs of more than ten members per garden (Chiwanza et al., 2015).

Nutrition gardens for clubs are strategically placed at boreholes, with solar energy driving the machinery. Nutrition gardens are also established at schools. The Council provides the land and non-government partners support the infrastructure for the gardens. The produce is sold and proceeds invested to fund other activities that members prioritise. While no vegetable processing is yet underway, the activities include purchase of plastic waste to make products from reclaimed recycled waste.

Food harvested from nutrition gardens is mainly consumed in members' homes. Where there is surplus food from the gardens and other UA sites, the produce is sold at the vegetable and fruit market in Chitima (a zone in the city). The market has over 300 stalls for local vendors and also for those selling farm produce from neighbouring districts.

Non-government partners support these garden activities, such as the French agency Action Contre La Faim (ACF), which has supported vulnerable groups in seven high-density suburbs in Masvingo city (ACF, 2013), or the work of CARE-Zimbabwe in the city (Bornard, 2010). These partnerships have supported work with the council, such as drilling boreholes that are used for watering the nutrition gardens. ACF supported to the nutrition gardens included providing water for UA, as well as clean potable water, and promoting sanitation and hygiene.



Nutrition garden at Sisk township 2022

The city also has a memorandum of agreement with the Great Zimbabwe University to trial crops and to identify recommended seed types and crops that are more suitable for the seasonal conditions in Masvingo. This will go a long way toward supporting food security.

Other aspects of Masvingo's urban food system

The UA strategy has had other advantages for health in the city. Open spaces that were being used for illegal refuse disposal are now being used for more productive UA activities. The reduced illegal dumping has had a positive impact on the aesthetics of the environment, as well as on fly-breeding, reducing fly-borne disease.

Dialogue and co-production in the food system

The City of Masvingo holds quarterly client surveys to obtain feedback and suggestions on issues, with the link to the survey sent widely to various stakeholders. Currently, food management issues are not yet incorporated in these surveys. Committee meetings and full Council meetings discuss a range of issues, but food management systems have also not yet been on their agenda. However, the city works with a range of different ministries and partners in the urban food systems.

The local authority links with:

- The MoHCC on imported foods, external inspection of food-producing industries, on development of food and Codex standards and for co-ordination, technical advice and other national roles in food quality and safety.
- The government veterinary department on prevention and control of animal diseases with human impact, such as through meat consumption.
- AREX, for technical support in agriculture and to assist the community in crop-growing and animal husbandry.
- The community on food needs and actions for food production, in health clubs, and with community-based and civil society organisations such as Zimbabwe Chamber of Informal Sector Associations and vendor associations on food practices, information and awareness.
- Non-government agencies as partners in resourcing and implementing UA and other activities noted in the brief.

The City Council establishes memoranda of understanding with various non-government organisations, such as those noted earlier, to formalise partnerships and roles, and reports are produced monthly on the activities implemented.

Enablers and challenges

The City Council has the capacity to draft and formulate food management systems that ensure adequate production and safeguarding of food quality in the city, and to implement the programmes and services that support this. The Council has land resources for UA. The local authority in dialogue with partners has an urban agriculture concept and strategy that can contribute to household food security and reduce malnutrition in the city, especially if the activities are coordinated with other departments like AREX, and with community farmers to improve planting methods, pest control, and good harvest and storage techniques.

Masvingo also has land for industrial development, and investors are given lucrative payment plans to assist them to purchase land that to establish manufacturing industries. There is a predictable supply of treated water, ideal for food manufacturing. The tourism sector is currently untapped, and tourism can be this can be a great opportunity to start an industry that can enhance food tourism.

There are, however, also challenges and barriers. At present the city does not have a functional co-ordinating committee on food systems at the district and local authority level. At the same time not all stakeholders are actively involved in using the existing consultation mechanisms described earlier. On food systems, the City Council lacks a specific nutrition section or nutritionist to champion and be responsible for nutrition and food security, and thus no reporting system to monitor and provide evidence for improvements in this area. One strategy could be to set up a nutrition section in the Health or the Housing department.

While there is a reasonable city supply of treated water, irrigation systems are not available in some of the areas designated for urban agriculture. The presence of drought and resource constraints can lead to a dependency on external funders in the community. An expectation of assistance during droughts or emergencies can displace engagement in initiatives that can prevent emergencies or sustain food needs during dry seasons. Many in the community perceive that maize is the only starch grain that should be grown in UA. This has been a barrier to, and has led to a decline in the planting of more drought resistant traditional grains.

The council faces a number of barriers to implementing its policies and practices supporting food systems, including limited knowledge amongst EHPs on the Hazard Analysis Critical Control Point system (HACCP) and on ISO22000 food management systems. Food manufacturers and the community also lack knowledge of these food management systems, and the community has limited information on their legal rights.

Food premises are usually small to medium businesses, with very little exposure to good standards of practice, or approaches such as HACCP and ISO22000. This can compromise food safety and food quality standards. Inspecting and supporting the improvement of standards, and ensuring adherence to the standards noted in this brief demands resources for both the operators and the Council. A lack of financial resources can thus be a barrier to improvements.

In response to such challenges, the council is implementing the various activities outlined in this brief, making resources such as land available for UA, engaging non-state agencies to collaborate on infrastructure for initiatives, and community members to collaborate on interventions. Having a Council policy helps to align different actors and personnel. Opportunities are tapped to make best use of resources, such as integrating community and operator education during inspections, or in community settings such as for school children and in health club meetings for community members and vendors.

Future plans

The Council plans to set up a coordinating committee in line with the 'whole-of-government' and One Health Concept and this committee should be in a position to hold consultations and produce a policy document on Masvingo urban food management systems.

The Council also plans to run refresher courses for EHPs on HACCP and ISO 22000, and in turn disseminate this information to players in the food system, adding to the refresher courses run by the MoHCC. In doing to the council notes that HACCP needs to be tailor-made to suit small- to medium-food businesses.

The Council, with input from AREX, plans to engage the community to plant traditional grains that are more resilient to drought conditions, and to introduce communal composting, to reduce the level of biodegradable waste collected for landfill and use the bio- and food waste as fertiliser for nutrition gardens. The composting concept is already in place, and domestic residents are being encouraged to compost all biodegradable waste for communal composting. Communal composting will be initiated in the second quarter of 2023, financed by the council. This will assist those homes that have smaller yards and who are not able to dig compost pits.

There are plans to engage partners and government to support service and infrastructure needs for planned improvements, including irrigation equipment for UA, and microbiological laboratories to isolate bacteria responsible for food-borne illnesses. If Masvingo City Council had its own independent laboratory, this would reduce the burden on the Provincial Hospital Laboratory and reduce specimen turnover time, for earlier feedback and better food safety control.

References

1. Action Contre La Faim (ACF) (2013). Who we are. At: www.missions-acf.org/who_we_are/ (accessed February 2023).
2. Bornnard, D. (2010). Identifying the Drivers of Sustainable Rural Growth and Poverty Reduction in Zimbabwe. International Food Policy Research Institute. Harare.
3. Boslaugh, SE. (2016) Foodborne illness. Encyclopedia Britannica. UK
4. Chivanza, K., Mapuranga, B. Pombi, I et al. (2015). The effectiveness of donor-funded nutritional community gardens in the city of Masvingo. *Jo Poverty, Investment, and Dev.* 13:37-43
5. City of Masvingo (2022a) Hawkers & Street Vendors By-laws, Masvingo City Council
6. City of Masvingo (2022b) Urban Agriculture by-law, Masvingo City Council
7. Food and Agriculture Organisation (FAO) (2022). The State of Food Security and Nutrition in the World, FAO, Rome
8. FAO (undated) . Urban and Peri-Urban Agriculture. FAO, Rome
9. Government of Zimbabwe (GoZ). (2001). Foods and Food Standards Act (CAP 15:04). Govt Printer, Harare.
10. GoZ (2012) Food and Nutrition Security Policy for Zimbabwe: In the Context of Economic Growth and Development, Govt Printer, Harare.
11. GoZ (2018). Public Health Act (CAP 15:17). Government (Govt) Printer, Harare.
12. Knoema (2023) World Data Atlas, Zimbabwe. Online. At: <https://knoema.com/atlas/Zimbabwe/Masvingo-Province> ((accessed March 2023).
13. Migration Data Portal, (2021). Zimbabwe. Online At: https://www.migrationdataportal.org/internationaldata?i=stock_abs_&t=2020&cm49=716. (accessed February 2023).
14. UN DESA. (2019). International migration stock 2019: South Africa. At : <https://www.un.org/en/development/desa/population/migration/data/estimates2/estimates19.asp> (accessed February 2023).
15. Zimbabwe Statistical Agency (ZIMSTAT) (2022), 2022 Population and Housing Census Preliminary Report on Population Figures. Zimstat, Harare