

Case study on health-promoting urban food systems in Bulawayo



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. Bulawayo is one of the urban case studies, using a collectively developed shared framework.

Bulawayo context for urban food systems

Bulawayo, Zimbabwe's second largest city, is located in the south west of the country. It is on a savannah plain, close to the watershed between the Zambezi and Limpopo drainage basins. Bulawayo has a semi-arid climate with a mean annual temperature of 19°C, a dry, cool winter, a hot dry early summer and a warm wet later summer. October temperatures are high (30 °C). Bulawayo is vulnerable to droughts and sharply varying annual rainfalls. In 2022, the population of the city was of 653 337, with 46% male and 54% female (ZIMSTAT, 2022). The majority (85%) of Bulawayo's household heads were economically active in 2018, particularly those 17 to 59 years old (FNC, 2019). A small share of households (0,2%) were headed by children, and 9.6% were headed by elderly people, with these and other vulnerable households at risk of economic and food insecurity (FNC, 2019).



Bulawayo in Zimbabwe
GISGeography Under CC

Urban food systems in Bulawayo

Dietary diversity in Bulawayo was higher than the national average in 2018. The major foods consumed, as for the rest of the country, are maize and vegetables, with access to food dependent on household socio-economic features (FNC, 2019). Nutritional deficiencies in the population, together with insufficient, quality nutrition services are major challenges in Zimbabwe and generate the largest burdens on the health system (UNICEF, 2006). Bulawayo residents engage in peri-urban and urban agriculture in residential stands, in peri-urban plots and on available vacant land. Unemployment rose after closure of the city's industries, as a result of wider political and economic factors and instability, and urban agriculture provides an important source of food and income (Bulawayo City Council, 2007). Modernisation has, however, changed diets in the city, with a shift towards processed foods.

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**City of
Bulawayo**

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 lack of legislation controlling production and marketing of these foods hampers efforts to promote healthy diets. Various interventions are underway to promote health in the city's food system, including providing an enabling environment for urban agriculture; promoting consumption of unprocessed foods and healthy diets; fortifying staple foods to provide micro nutrients to under-five year old children and their mothers, and inspecting foods to prevent falsification and adulteration.

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

The city carries out routine inspections to ensure compliance with legislation and local by-laws covering public health and food standards (GoZ 2016a; 2018). Failure to comply with standards, including on quality, composition and labelling, results in condemnation of the non-compliant foods or prosecution of offenders. Ground nuts are a popular food and are tested for aflatoxins, given link of the latter to cancer. Most fines are too low to be deterrent, however, undermining compliance, and public health law infringements may not be treated with urgency in the courts.

Food production is monitored 'farm to fork' to ensure that it is done under sanitary conditions without risks to health. There are minimum legal requirements for food processing factories and food preparation premises and inspections are conducted to ascertain compliance. For food processing operations the law requires provision of water (a sink, wash hand basin), a minimum preparation area of not less than 20 square metres, floor to ceiling height of not less than 3 metre, impervious floors graded to enable drainage and painting of walls with light coloured washable paint to clearly assess state of cleanliness (GoZ, 2016a; GoZ, 1972a).

Sampling is done of fortified foodstuffs to determine the presence of fortificants. The law requires that certain foods be fortified to curb micro nutrient deficiency in populations (GoZ, 2016b). The city inspects to check compliance with these requirements on foods displayed for sale, although with resource constraints hampering the exercise.

With many fresh foods marketed in the city, the council health department assessed the presence of residual pesticide levels in vegetable produce and poultry in the city and in surrounding farms. The findings indicated traces of chemicals present, suggesting that farmers supplying city markets were not adhering to withdrawal periods for pesticides (Bulawayo Health Services Department, 2012). Recommendations were made to promote health education and ensure enhanced enforcement of the law. The city intended to also test meat products for antibiotics but were not able to, due to the lack of local laboratory capacities. This gap calls for increased local laboratory capacity in the city.



Agriculture produce displayed at 5th Avenue Market, P. Ncube, 2023

Routine health and hygiene education is given by environmental health practitioners to vendors, covering proper waste disposal and sourcing of wares from reputable producers. Vendor representatives are encouraged to form site committees to manage issues, including those related to health. Committee meetings provide an opportunity to include health education. The Council has a vibrant health promotion unit that also sensitises the public on health issues. Mothers coming to clinics are informed on healthy diets, and nutrition messages are aired on television screens at local clinics.

Non communicable diseases (NCDs) linked to changing diets are a rising challenge in the city. Between 1990 and 1997 the annual prevalence of NCDs per 100 000 people increased: for hypertension from 1000 to 4000; for diabetes from 150 to 550; and for cerebrovascular accidents from 5 to 15 (Mufunda et al., 2006). Sale of ultra-processed foods at school gates by unlicensed vendors compounds the problem of unhealthy eating habits amongst young people.

High levels of consumption of sugars, salt, oils, and fats is associated with higher prevalence of obesity, specific forms of cancer, and other NCDs (Srouf et al., 2019; UNICEF, 2022). There is limited legislation to control ultra-processed foods, making it difficult to control their display and sale. Review of the law to address this is implemented through the MoHCC, and the MoHCC also provides circulars to local authorities outlining actions to be taken. While routine inspections and samples intend to check on the suitability of food for human consumption, limited laboratory capacity also militates against analysis for this.



Sale of processed foodstuff and carbonated drinks along 5th Avenue. P. Ncube, 2023

Efforts have also been made to reduce the incidence of NCDs through city health service promotion of healthy diets, and through measures implemented to meet MoHCC annual targets to reduce NCDs. The city is currently tracking hypertension and has enrolled over 14 000 people for routine blood pressure checks at health facilities. Those with elevated blood pressure are treated and monitored, and health education provided to them to address dietary factors such as excessive salt consumption, high saturated fat and transfat consumption, low intake of fruits and vegetables. Those at risk are advised to promote physical activity, and to reduce consumption of tobacco and alcohol. Children diagnosed with malnutrition are also routinely weighed and intensively monitored until they reach recommended levels.

Urban agriculture in Bulawayo

Urban agriculture (UA) refers to crop-cultivation and livestock-rearing for food, aesthetic and commercial purposes within urban and peri-urban areas, including the production and delivery of inputs, and the processing and marketing of products. The scale of UA is determined by the availability of land, water, skills, labour and finance and by the legislative framework (Bulawayo City Council, 2007). The demand for land for UA has always been high in Bulawayo, with 5% of residents seeking land for UA and 63% of respondents in one assessment indicating legal constraints as a barrier (ZimVac, 2020). With the depressed economy and the scarcity of formal employment in the city, households have engaged in a range of informal sector activities to secure livelihoods and access food, and UA provides both a means of generating income and a source of healthier unprocessed foods.

Bulawayo City Council approved an urban agriculture policy in 2000, noting that urban and peri-urban gardens promote household food security, generate income from sales of surpluses for vulnerable groups, and ensure affordability, availability and accessibility of unprocessed food (Bulawayo City Council, 2007). The policy affirms the local authority's support for UA, and outlines permitted activities, including growing crops and rearing livestock, depending on land sizes.



Urban Agriculture Emakhandeni Suburb, P. Ncube 2023

Urban agriculture in Bulawayo is practised in residential stands, open municipal spaces and peri-urban plots, with activities including horticulture, animal husbandry and agronomy, and crops grown including choumoulier, tomatoes, carrots, and seasonal maize. Peri-urban agriculture also provides residents with fresh vegetables and dairy produce. Much of the UA in high density urban areas of the city takes place 'off-plot' in open council land, with plots ranging from 10 square meters to over three hectares, depending on available land. The land used is not zoned for agriculture, but allocated for UA while awaiting other development. The council offers different lease periods depending on the site, with longest leases up to 25 years with a provision for renewal. UA in these open plots carries the risk of losses through theft of the crops and faces challenges of access to water. Development partners have assisted the city with sinking boreholes for UA.

The city has also designated nutrition gardens in residential areas. These gardens are allocated to vulnerable groups identified by the council social workers, including elderly people, those with disabilities and child headed households. Development partners offer expertise on the operation of the gardens to ensure that the ventures sustain livelihoods. Some partners have sunk boreholes to enable irrigation of gardens throughout the year.



Nutrition Garden, Nketa 7, P. Ncube, 2023.

Some of the products from UA are marketed in the city. Local UA largely provides cereals and vegetables, while fruits mainly come from farms outside the city from all other provinces of the country. There are both indoor and open markets. Indoor markets are privately owned, while outdoor markets are areas designated by council. Areas have been designated throughout the city for the sale of agricultural produce, and individuals are allocated bays for which they pay a monthly rental. Vendors marketing in designated areas of the city centre provide a 'one-stop-shop' for all types of agriculture produce. These city markets for fresh foods are popular, particularly with older residents, as they provide access to a range of the fresh and unprocessed foods that they prefer at affordable cost.

Council has tried to decentralise vegetable markets to the high density suburbs to decongest the central business district and provide food markets closer to people's residential areas, but with limited success. The city has currently established markets in Pumula, Luveve, Cowdray Park and other suburbs, but the uptake of bays at these markets has been poor, and some markets have remained unused. Vendors largely perceive business to be better in the central business district.



Vegetables on sale Pumula Vegetable Market, P. Ncube, 2023

Health and hygiene issues are an issue in markets, especially where vending takes place in unlicensed sites. The Council policy requires all vending to be conducted from areas where there are basic requirements to safeguard health, including a water supply for washing hands and products, and ablution facilities for proper disposal of human waste. If these facilities are not in place, both vendors and customers face health risks. A recent rise in vending in unlicensed and un-serviced sites thus poses a risk of disease outbreaks, and is recognised to need urgent attention. There is also a challenge in ensuring the safety of foods washed with water from city boreholes. The 294 boreholes sunk in the city have been tested by the Council and most have been found to provide water that is unsuitable (if untreated) for direct human consumption.

Dialogue and co-production in the food system

One of the city's core values is consultation. All activities involving stakeholders are done in consultation with those involved and with the beneficiaries. The participation of stakeholders assists in ensuring ownership of projects by stakeholders and community leaders. Their presence makes it easier for programme activities to cascade to their peers and in communities, as information comes from trusted sources. The city council identifies individuals and organisations that are interested in the issue in focus. For food systems this includes groups in the community (elderly people, those with disabilities, women), non-government and social welfare organisations, various sectors of government, churches, councillors and council officials. Consultation processes aim to chart agreed options for designation, allocation and operation of land for UA, food markets and other activities noted in this brief. Partners bring technical expertise and funding, and social welfare officers assist in identifying vulnerable groups for inclusion in line with clear criteria.

Peer education is often used to effect change in knowledge, attitudes, beliefs, or behaviours at individual level, but also at the group or societal level, such as by modifying norms and stimulating collective action. These processes and the various forms of inclusive multi stakeholder engagement generate a working relationship between council and partners that levers and ensures support for the initiatives taken.

Enablers and challenges

The city has a functional town planning department that contributes to key areas of food systems, such as for assigning land use areas, or for co-ordination across council departments to produce the urban agriculture policy. Other stakeholders bring capacities to processes, such as the contribution of social services personnel in the Housing and community services department to beneficiary identification in line with clear vulnerability criteria for the allocation of nutrition gardens. Partners bring technical and financial support to processes, as earlier described. They do this through a memorandum of understanding with the local authority that sets the terms of reference of the partnership. The council brings capacities and procedures for the allocation of plots for UA in response to expressed interest by farmers. The applications are considered at the Town Lands Committee and, if approved, a recommendation is made to council for consideration and subsequent allocation. Terms and conditions are set to ensure that all land allocated is put into use within stipulated time frames and that lease conditions are fulfilled, failing which the land is repossessed by the Council and allocated to other deserving applicants.

The city has aimed to create an enabling environment for its urban food system, such as in the decentralisation of vegetable and fruit markets, including the traditional unprocessed food market located in Makokoba and new markets in Lobengula West and Pumula Old. Wholesale markets for sale of vegetables and fruits to local vendors aim to cut the operational costs for vendors and make food more affordable for consumers. Further, council has identified food distribution markets and vending sites closer to the places of residence to decongest the city and to meet the policy aim of a resilient food supply chain. While many of these efforts intend to provide enabling environments for food producers, processors, retailers and consumers, they do also face challenges, some noted earlier in the brief.

As noted earlier, decentralised markets in residential areas are not widely used by vendors. Further, beneficiaries of nutrition gardens, while vulnerable, are not always well-organised, and this leads to the demise of many of these gardens. Projects supported by external partners also collapse when partners stop their support, if they did not successfully ensure ownership by and sustainability with those community members involved.

Rain-fed agriculture in the city is uncertain, and the city usually faces critical water shortages. The water challenges affect some of the nutrition gardens, especially during the dry months of the year. Gardens that have boreholes, as earlier described, have been better able to secure a more continuous source of water for irrigating crops. However the boreholes require maintenance. While beneficiaries were taught the basics of maintenance, there is a challenge in organising clear roles and responsibilities to ensure that boreholes are always functional.

Constraints in access to water also mean that the city faces a challenge in some farmers using sewage to water their crops. This violates legislation that prohibits the use of waste-water on food crops as it poses a health threat to consumers (GoZ, 2000). The law requires that no person discharge any effluent liquid onto land or use any effluent liquid for the irrigation of any land, without approval by the appropriate health authority, including for irrigation of crops from sewage-treatment installation or oxidation ponds (GoZ, 2000). Bio-accumulation of heavy metals in crops irrigated by waste-water has also been reported, with a negative impact on human health, especially for those crops consumed directly by people, such as vegetables and maize (Manzungu, 2012).

While routine inspections are conducted by the Council, and those who are non-compliant with the regulations on waste-water use are prosecuted, the violations are wide-spread relative to council resources to manage the issue, and some offenders are not prosecuted.



Crops grown in sewage, Luveve, Bulawayo , P. Ncube, 2023



Plants grown on sewage flows, Nkulumane, Bulawayo, P. Ncube, 2023.

There is also a challenge of UA in undesignated areas. While these areas, such as stream banks and wetlands that are not permitted for cropping are usually clearly marked by the local authority, residents may disregard the markings. If the city then cuts the crops in these areas it generates a conflict with residents. This is an area for ongoing dialogue and education, to enable the council to enforce the law to protect environments without such conflict

It is a challenge that no legislation has been crafted to date to deal with the sale of ultra-processed foods at schools or other retail outlets, given the impact on rising levels of NCDs. Zimbabwe's National Health Strategy 2021-2025 includes aims to promote healthy diets, including through enacting legislation discouraging the sale of unhealthy food. Policy measures proposed for this include increasing the price of unhealthy foods through taxes, and prohibiting certain foods at ports of entry. Ensuring this under the Public Health Act Chapter 15:17, and the Food and Food Standards Act Chapter 15:04 is important, as is updating legal protections and strengthened monitoring and enforcement of the law. The National Health Strategy 2021-2025 has a focus on strengthened monitoring of food fortification, as well as on strengthening food analytics, inspection of food imports and exports at ports and strengthening monitoring of food poisoning (MoHCC, 2021). Implementing these national strategy proposals will enable the city to better carry out its role in these areas, as will capacitating the Government Analyst Laboratory to manage the samples from expanded food monitoring and testing.

Future plans

Urban agriculture continues to grow as communities strive to provide food for their families. The demand for farming land in urban areas continues to soar amid the competing needs for land for other urban developments. Urban agriculture has graduated from being a pastime for urban dwellers, and has become a source of livelihood.

The city will thus continue to embrace UA as a means of empowering the communities and supporting access to affordable, fresh food within the city. New areas are being designated to meet the increasing demand for agricultural land. Partnerships with private sector and non-government organisations are planned to provide a platform for improving farming methods. A pilot contract site is in place, with contracting to improve returns for farmers. Methods to address and curb water shortages are underway, with sinking of boreholes and investment in solar power to augment electricity which is in short supply. The city also plans to further develop ecologically sustainable methods, such as drip irrigation, and other water conservation techniques, to conserve water and enhance yields.



Contract agriculture Dunstall agriculture lots, Bulawayo, Dr. N.P. Sibanda, 2021

Bulawayo city also plans to widen and sustain access to unprocessed fresh foods that are beneficial for health. Residents of the city benefit immensely from freshly produced produce. The city has embraced this through setting enabling policies. Actions to implement this policy vision are underway. The city plans to widen implementation through planning for and ensuring viable urban agriculture, marketing and local processing, conducted under safe conditions.



Onion crop ready for the market, Dunstal, P. Ncube, 2023

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