



Food and Agriculture
Organization of the
United Nations

RUAF FOUNDATION



Building more sustainable and resilient food system in Kitwe city region

Policy brief





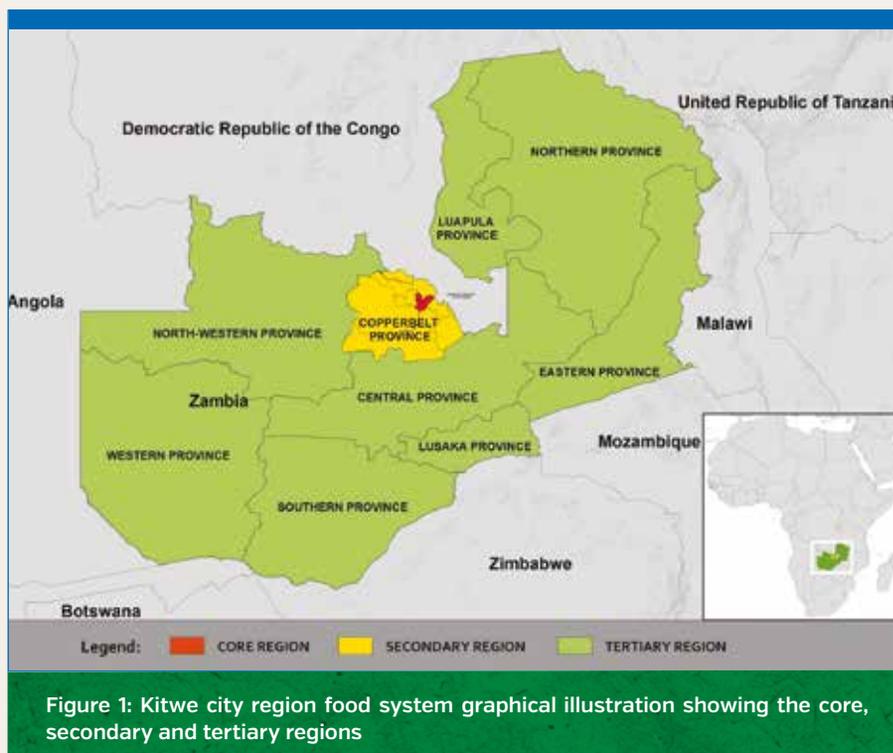
The Food for the Cities Programme aims at assessing and planning more sustainable city region food systems (CRFS). It is a global programme implemented by FAO and the RUAF Foundation in eight (8) city regions in the world. In collaboration with the Copperbelt University, a food system assessment was conducted to understand the strengths and challenges faced by the city region. A second phase of policy dialogue and planning was then conducted, involving multistakeholder thematic working groups building up strategies to make the CRFS more sustainable and resilient. This policy brief presents the main outcomes of this assessment and dialogue process, and recommendations for the way forward.



Kitwe city region food system

The Kitwe city region boundaries were defined through a participatory process. It includes the 10 districts composing the Copperbelt Province, located in north-western Zambia that covers 31,329 square kilometres. Copperbelt Province is the second most populated and dense area in Zambia after Lusaka with 2.3 million inhabitants or 39% of its population living in urban areas. Three layers have been defined to characterize the area:

1. **Primary** or Core Region, defined exclusively by **Kitwe district**;
2. **Secondary** of Peripheral Region, defined by the **Copperbelt Province**, i.e. the area defined as the city region, where most of the food consumed is produced;
3. **Tertiary** or Other Region: region outside the secondary region but from which the Kitwe food system obtains agricultural, livestock, dairy and poultry products.



The Kitwe city region has great **potential to produce agro-commodities**. However, the **demand often exceeds supply** in the city region, especially for **fresh foods**. The shortfall is made up by importing from outside the region, even outside the country. Even though substantial quantities of food are produced in the city region, **unsustainable agricultural practices** lead to water and soil pollution, in addition to the negative impact of mining activities on natural resources. The assessment highlighted the need for better access to **extension services** to change farming practices and ensure sustainable means of production. However, farmers also need better access to basic infrastructure to store, process and market their products and be able to improve their livelihoods. The assessment and participatory policy dialogue has identified specific priorities for strengthening the city region food system, which focus on: i) supporting agricultural production; ii) strengthening agro-processing, wholesale and distribution systems and iii) ensuring sustainable management of the environment and natural resources.

Supporting agricultural production

The core and peripheral regions receive a good annual average rainfall of over 1,200 mm and have an estimated **80,000 farmer households**. While the Kitwe City region has great potential to produce a wide range of food products, it has not been fully tapped. The region imports food from the tertiary region to meet the shortfall from internally produced food particularly for beef, tomatoes and chickens. A good number of farmers still practice conventional farming that constitute disc ploughing, maize mono-cropping and shifting cultivation. However, conservation agriculture is slowly being taken up by farmers. The major constraints that farmers face include difficult **access to land**, poor road **infrastructure**, **high input costs**, lack of **credit** facilities, poor **storage** facilities as well as the prevalence of **pests** and **diseases**.

Key priority actions:

1. Provide adequate extension services

Providing efficient and effective extension and technical services to farmers are key elements to increase agricultural production and productivity, as well as to encourage diversification. In order to improve agriculture production amongst farmers, technical assistance is needed in terms of input supply sources, sustainable production technologies, and integrated pest management strategies and markets opportunities.

Rationale for intervention:

- i. There are currently **inadequate extension personnel to cover all the farmers**, particularly small scale producers [currently a farmer-extension officer ratio of 400-1].
- ii. Even though large scale producers can “contract” extension services, **Zambia has not opened up to private extension services**.
- iii. **Capacity-building opportunities for extension officers is lacking**. This is necessary for continuous development and application of new technologies.
- iv. Extension personnel have no or **inadequate access to transportation** that can facilitate their access to farmers. This limits their effectiveness and levels of contact with producers.

Recommendations:

- i. **Facilitate the participation of private sector entities** through the revision of policies and legislation governing the provision of technical services to farmers. This can be anchored under



Seventh National Development Plan (7NDP) Strategy 2 (7.4.2) part (d) *Business development services provision*.

- ii. Increase **financing of agriculture extension** services as either part of the **subsidy**, Farmer Input Support Programme (FISP), or as part of reforms to **fiscal policies**. The 7NDP provides a window where this can be anchored - Strategy 1 (7.4.1) in terms of *improve production and productivity* particularly under Programme (b): *Farm block development*. This includes increasing numbers of extension personnel per farm block in order to provide technical services to farmers.

2. Ensure availability and access to good quality infrastructure for farmers

Technical assistance to farmers can only be fully useful if farmers have access to farm equipment, as well as good quality infrastructure to transport, store, and market their products. Inappropriate infrastructure leads to food losses and waste along the value chain, especially fresh food products. Exact quantities that lost are unknown, but estimates suggest that **over 50% of food is lost** between collection and retail points.

Rationale for intervention:

- i. Production areas are serviced by **fewer and non-permanent feeder roads** which require improvement to facilitate the movement of inputs, product outflows and traders all year round.
- ii. Farming areas and markets lack **bulk storage facilities** such as cold storage sheds and silos.
- iii. Lack of **access to farm equipment** and machinery for resource-poor small holder farmers.

Recommendations:

- i. **Invest in road infrastructure** between remote production rural areas and markets.
- ii. Facilitate the provision of **incentive to private actors to invest in machinery hire services** or hire purchase at low cost for small scale producers.
- iii. Promotion of **communal or group ownership of machinery** and **storage facilities** through cooperatives or other mechanisms

3. Improve access to agricultural financing

Having stable access to credit is necessary to secure and scale up agriculture in the long term, facilitating access to inputs, including agricultural tools and machinery, as well as land. Farmers, particularly small scale producers face difficulties in accessing credits.

Rationale for intervention:

- i. The agriculture sector has **inadequate tailor-made credit facilities** for small scale producers that have no collateral. The market for commodities such as maize is largely controlled by the **Food Reserve Agency** which operates on a system where the farmer supplies the commodity and is paid at a later date, denying the farmer the capacity to access resources to invest in the procurement of inputs early in the farming season.

- ii. Small scale producers **lack the ability/capacity** to develop **business plans** which can be a requirement for accessing capital.

Recommendations:

- i. **Promote “Pass-on-the-Gift” schemes**, secured by government, such as the one under Heifer International. In this scheme, a producer can be provided with a female animal from which an offspring is passed to the next producer.
- ii. **Establish a farmers’ credit facility supported by government** with reduced taxes and interest rates as incentives for the farmer to borrow.
- iii. Provide extension services to farmers to **build capacity in business development and management**.

4. Secure land tenure

Even when access to credit is facilitated and insured, accessing land can still be a challenge for farmers to secure their livelihoods. Legally, land in Zambia is divided into two categories, state and customary land with 94% of the country’s land under customary tenure.

Rationale for intervention:

- i. Even if recognized by the state, land under customary tenure does not provide the land holder with exclusive rights over the land as it belongs to the community. It is then **not recognized as collateral by financial institutions**, limiting access to credit for small scale farmers. Additionally, population growth in the customary areas is leading **to land pressure and land fragmentation**, increasing the difficulty in obtaining contiguous land parcels of sufficient scale to support commercial farming. While it is possible to change from customary tenure to leasehold, the **procedures can be very lengthy and few farmers are aware of its existence**.
- ii. There are currently fewer control measures for **unregulated agricultural expansion**, primarily in forest areas under customary land and to a lesser degree in protected forest areas. While protected forests are governed by rules and are under state jurisdiction, customary land is not.
- iii. It is difficult for small producers to access state land in the core region due to high demand combined with **competition between agriculture and urban development**. Additionally, integrated land use planning is absent and affects both land use and conflicts related to access to and ownership of land.
- iv. **Women face difficulties with regard to ownership of land** despite being the most active in the agricultural production sector. According to the Food and Agricultural Organization (FAO), only 19.2% of the land in Zambia is owned by women as compared to 80.8% for their male counterparts.

Recommendations:

- i. Develop a **land policy for Zambia to facilitating access to land and improved tenure**. There is presently a draft land policy which is hoped to create policy harmony in the context of land use, access and tenure.

- ii. Hasten the **decentralisation process of the Ministry of Lands and Natural Resources**. Zambia has a decentralisation policy related to institutions and governance infrastructure that has not been fully implemented. This can have the **potential for local governments** to plan how to allocate land, with limited central government control, and to resolve conflicts locally, thus helping to facilitate improved access and/or tenure for the farmer.

Strengthening agro-processing, wholesale and distribution systems

Governance and actors in the distribution of fresh foods within the city region is complex, involving several policies, legislations and actors along the supply chain. Formal and informal markets characterise the retail sector. Fresh foods are also distributed and retailed by street vendors and supermarkets. Associated with poor road infrastructure, inappropriate storage facilities and insufficient agro-processing of fresh food often lead to high food wastage especially for small producers.

Key priority actions:

1. Encourage agro-processing of fresh products

The city region has significant challenges in processing or adding value to locally produced agro-commodities. The availability of dried mango slices and vegetables in supermarkets and markets suggests there is a market even for semi-processed products. The establishment of **low cost processing facilities** at the small scale producer level has the potential to ensure that the bulk of the commodities produced in the region are available for consumption. This would limit food losses and waste, increase food security potential, improve household incomes and contribute significantly to tackling nutritional challenges that currently result in the high number of stunted children under 5 years old.

Rationale for interventions:

- i. There are **no significant investments nor policies providing incentives** for small scale processing of fruits and vegetables. The challenge relates to significant quantities of mushrooms, vegetables and fruits that are seasonally produced, and lost.
- ii. **High taxes and duties for imported machinery** for small scale production prevent easy access to proper equipment for on-farm processing.



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Recommendations:

- i. Facilitate the provision of attractive **tax incentives for private sector investments** in processing agro-commodities.
- ii. Design and implement **awareness raising programmes** to help stimulate improved practices and innovation, especially in relation to reduction and recycling of waste.
- iii. Establish **multi-stakeholder forums** that engage and involve small producers, the private sector, civil society, government and research institutions in improved practice and innovation.
- iv. Build **capacity in low technology and low cost processing methods** for drying and packaging commodities such as vegetables and fruits.

2. Promote value addition and interactions along the value chain

In addition to improve agro-processing capacities and possibilities, value needs to be added along the whole value chain, from production to consumption. By improving packaging, grading, labelling systems, farmers and processors can find better market opportunities and therefore buttress their livelihoods. The value chain cannot be seen as an aggregation of individual steps products need to go through before being consumed. Interactions among actors within the value and supply chain is needed, to ensure an adequate distribution of the value between all stakeholders.

Rationale for intervention:

- i. Small scale producers have **poor or no information** on the importance of product packaging, grading, labelling and sorting, or to other actors in the value chain, leading to poor access to high value markets that provide good prices for processed products.
- ii. **Mistrust exists among value chain actors** particularly between producers and middlemen in market places. Middlemen act as brokers between producers or suppliers and retailers but are instrumental in determining a low market prices for producers or suppliers.

Recommendations:

- i. Establish institutional mechanisms to **promote and regulate product packaging, grading, labelling and commodity sorting** for small scale producers.
- ii. Establish **knowledge sharing platforms** where small scale producers interact and strengthen their relationships with traders' associations and other related actors.
- iii. Foster **Public Private Partnerships to promote the provision of tailor made credit packages** and capacity building in developing viable business plans targeted towards agro-processing and market linkages.



Ensuring sustainable management of the environment and natural resources

Without looking at environmental sustainability of the agricultural and natural resources management practices, there cannot be any long term perspective for the city region, farmers and all actors involved in the food sector. Agriculture by its nature competes with other uses for land such as urban industrial development and settlements, and conservation especially of forests. In the Kitwe city region, the main challenges facing the environment and natural resources include conversion or expansion of small scale agriculture to forests, and pollution of aquatic and terrestrial ecosystems from mining operations and agrochemicals applications affecting fish and natural products such as wild vegetables, mushrooms and medicinal plants.

Key priority actions:

1. Ensure sustainable land and soil management

Management of natural resources across agriculture landscapes pose a challenge particularly the clearing of forests by small scale farmers. Expansion of small scale agriculture into forests is a threat to Zambia's environment. Prior to farming, small scale producers either directly or indirectly engage in the felling of trees and production of charcoal which leads to deforestation or forest degradation. This is despite that forests provide necessary ecosystem services for agricultural production and human activities.

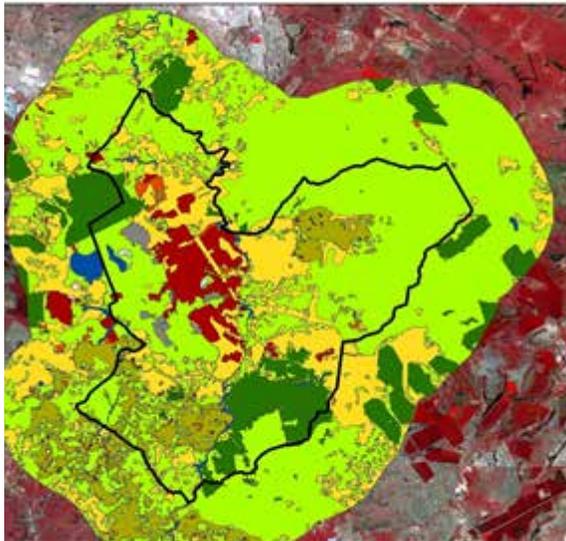
Rationale for intervention:

- i. Poor land husbandry practices, mainly due to weak law enforcement or lack of knowledge, lead to **loss of fertility in farm lands**. Fuelwood and charcoal production as part of land clearing and off-season revenue generation, and late season human-induced bush fires are common practices in small and medium scale farming.
- ii. Lack of awareness of the need for sustainable natural resources management, and limited capacity of small scale farmers has contributed to **deforestation and forest degradation**. Access to tree seedlings is difficult because it is costly.

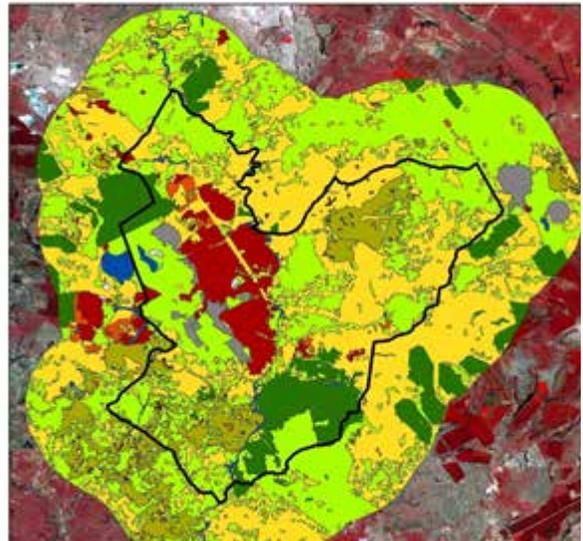
Recommendations:

- i. Ensure the **enforcement of existing legislation** to control deforestation and charcoal production.
- ii. Enhance extension services, farmer field days and other knowledge sharing platforms to improve **farmer ability to manage their soils**.
- iii. Electrify peri-urban and poor urban neighbourhoods and provide affordable energy saving stoves and other **renewable (green) energy sources** such as solar and Liquefied Petroleum Gas (LPG), at an attractive price, to offer other energy options than charcoal.

LAND COVER MAP KITWE DISTRICT - 1989



LAND COVER MAP KITWE DISTRICT - 2016



Land cover of Kitwe district in 1989 and 2016

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2. Limit agrochemicals contamination of rivers and wetlands

Synthetic (inorganic) agrochemicals available to farmers include pesticides, herbicides, fertilisers and plant hormones. Some of these agrochemicals can be harmful to other organisms when they accumulate and reach high concentrations. Agrochemical use in agriculture has been associated with increases in crop yield, animal production and reduced post-harvest losses, and has helped to prevent the loss of fruits, vegetables and cereals from pests. However, pesticide poisonings and deaths occur in developing countries due to inadequate safety standards, lack of protective clothing, insufficient labelling, illiteracy and awareness of the hazards of pesticides.

Rationale for intervention:

- i. Both river bank and wetland **crop production release pesticides** and other agrochemicals into the aquatic environment that affect aquatic fauna and flora.
- ii. Pesticide spills, leakages from storage facilities and the **improper disposal of pesticides** or the pesticide containers can possibly affect drinking water, wildlife habitats and food crops.

- iii. Use of **unsafe water in urban and peri-urban agriculture** increases risks to consumers from unsafe foods produced with such water.
- iv. The small scale agriculture sector **has low uptake of and technical services related to sustainable or conservation agriculture.**

Recommendations:

- i. Increase investment in technical services related to the benefits of climate smart and **conservation agriculture.**
- ii. **Raise awareness and build the capacity of producers to manage agrochemicals** to minimise the impact that agriculture exerts on river beds and wetlands.
- iii. Facilitate **enforcement of public health laws** to control the use of agrochemicals.
- iv. Establish **knowledge sharing platforms** where information on IPCM and management of agrochemicals can be transferred or acquired.
- v. Improve the **capacity to enforce environmental regulations** in ZEMA and municipal authorities sustainably manage environment and natural resources.

Conclusion

The CRFS assessment and stakeholder engagement led to the identification of eight (8) key interventions, belonging to three (3) thematic areas, among a much longer list of potential interventions in the Kitwe CRFS to make it more resilient and sustainable.

These interventions include changes in or revision to **policies and regulations** (processing facilities, land policy, etc.), **awareness raising** campaigns (use of agrochemicals, innovations on the reutilization of food waste, etc.), **enforcement** of regulations and laws (public health to control the use of agrochemicals, natural resources management, deforestation, etc.), **institutional changes** (for the promotion of value addition, etc.), education, training and **capacity building** (on conservation agriculture, soil management, processing methods, etc.), establishment of **knowledge sharing platforms** (information on IPCM), concrete **investment** undertakings (extension services, etc.), and establishment of **public private partnerships** (access to credit by farmers and machinery, etc.)

Inter-sector or integrated planning is essential in the improvement of the city region food system. **Joint planning between Kitwe and the surrounding districts** is proposed in the Urban and Regional Planning Act Number 3 of 2015, but guidelines and standards are not available yet. This would provide a policy and institutional framework to anchor implementation processes.



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