EMPOWERED LOCAL AGENCY, INFRASTRUCTURE INVESTMENT, AND GOVERNANCE

A MODEL AND CASE FOR TRADITIONAL FOOD MARKETS

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SUMMARY

Food systems, important for food security, nutrition, prosperity, and environmental well-being, are integral to all 17 Sustainable Development Goals. Traditional food markets are strategic entry points for food systems transformation, since a diversity of stakeholders (including local producers, vendors, consumers, and government), interact routinely in these spaces. These markets connect millions of stakeholders within and across local food systems and levels of government mandates. As food-insecure regions like sub-Saharan Africa (SSA) rapidly urbanise, most urban, low-income, vulnerable communities are reliant on food purchased from markets. As such, markets are key spaces to guide vendor practices, influence consumer food choices, and strengthen inclusive governance. Despite their critical value, markets' 'hard' (structures and equipment) and 'soft' (capacities and resources) infrastructure are significantly under-supported. Investment efforts have been challenged by a lack of understanding of how markets are embedded in the wider food system and markets' wholesale and retail dynamics, inadequate financial models, insufficient public budgets and capacity, and limited empowerment of key stakeholders.

Since 2020, the Global Alliance for Improved Nutrition (GAIN) has been refining and implementing its Inclusive Food Systems Governance Model. This model is designed to strengthen investment and empower voices, alongside increased efforts to ensure sustainability and resilience in traditional food markets. It has been shown to support effective market infrastructure investments, to foster local agency and inclusive and equitable food systems transformation, and to be adaptable across different contexts. This paper introduces the model's four elements and the tools used to implement them, and then illustrates these through the case of Marikiti Market in Machakos, Kenya - including details of specific investment components and costs. As infrastructure investments are limited, the importance of making a sound business investment case for public and private (and philanthropic) partnerships and banks to invest in traditional markets is critical. This paper provides a contribution to re-thinking hard and soft investment in these markets.

KEY MESSAGES

- GAIN's Inclusive Food Systems Governance Model is framed by tenets of Participatory Action Research and Design Thinking. It employs a pragmatic mixed methods approach using a variety of quantitative and qualitative tools.
- This inclusive governance model can support local and city governments, local and traditional food market stakeholders, and communities in locally led, contextualised food systems transformation for the benefit of people and planet.
- Experience applying this model in Kenya and other African countries like Mozambique has shown its efficacy, transferability across contexts, and value in supporting investment cases.

BACKGROUND AND OBJECTIVE

Localising Sustainable Development Goals (SDGs), with stakeholders across diverse contexts and sectors, is essential to the success of the 2030 Agenda (1). Inherent in the 2030 Sustainable Development Agenda's commitment to leaving no one behind, food systems are woven throughout the 17 SDGs (2). These goals aim to achieve the vision of healthy, prosperous, innovative, and stable communities, living sustainably within environmental system boundaries (1,2,3). At the interface of communities with their local and city governments, the complexity and inequality of food systems collapses into the routines, practices and governance-mandated relationships of daily life, as embedded in specific local contexts. To realise these stakeholders' potential to effectively and justly interpret and deliver on food systems transformation and the SDGs, local agency is essential (4,5,6,7). Where agency is, 'the capacity of individuals or groups to make their own decisions about what foods they eat, what foods they produce, how that food is produced, processed and distributed within food systems, and their ability to engage in processes that shape food system policies and governance' (4).

In many cities, like those throughout food insecure regions of sub-Saharan Africa (SSA), city governments and local and traditional food markets play a strategic role in leveraging urban food relationships for locally-led sustainable development and resilience (5, 6, 8, 9). These markets are the primary source of food for the expanding populations of urban residents, especially those vulnerable to food insecurity and malnutrition (8). Markets are also key food distribution and influencing places where vendors earn their livelihoods and where communities and government routinely interact with multiple food systems stakeholders and sectors, across urban, rural, territorial, and wider landscapes (8, 10, 11, 12).

Investment in public wholesale and retail market infrastructure is critical for lasting food system sustainability alongside strengthening communities' socio-ecological resilience – especially in traditional markets, with and for vulnerable communities (13, 14, 15, 16, 17). Infrastructure from roofing and cool rooms to water systems provide the necessary 'hard structure' market conditions that vendors, consumers, and governments need to conduct best practices, like those for food hygiene and reduced food waste. Such practices are climate- and biodiversity- smart, facilitate food safety, and foster local prosperity. However, investment experiences have mostly been partially or wholly unsuccessful, resulting in a lack of investor confidence (18, 19, 20). Reasons for this include the use of classic public- and private-sector cost-benefit models which are not fit for purpose; financial and regulatory emphasis in government's market framing; inadequate use of financial best practices; limited urban development policy frameworks and public budgets; a lack of skills; and inadequately empowered and recognised local agency (8, 21, 22). This underinvestment is part of a larger trend: Africa's annual infrastructure funding gap is approximately USD 130-170 billion, of which only about half has been committed in recent years (20). The 'Global Gateway Africa-Europe Investment Package' of EUR 150 billion (2022-2027) targets 11 infrastructure priority areas for investment, including food and non-food infrastructure, such as sustainable energy, environment, agri-food systems, health, and sustainable finance (20).

Since 2020, GAIN has been refining and implementing its Inclusive Food Systems Governance Model in cities and traditional markets in SSA, Southern Asia, and Southeast Asia. The model and supporting tools aim to facilitate local agency and effective market infrastructure investment. In this working paper, we introduce the model and tools and illustrate the application thereof through the case of Marikiti Market in Machakos, Kenya.

FOOD SYSTEMS GOVERNANCE MODEL AND TOOLS

AN OVERVIEW OF THE MODEL

GAIN's Inclusive Food System Governance Model adopts a systemic approach to food systems transformation, underpinned by a participatory ethos – emphasising the value of effectively including all stakeholders. Key to the interpretation of the model is the human-centric appreciation of locally relevant solutions as well as broader governance best practices. This model supports rapid iterations and refinements through creative, critical-thinking processes and practical application. GAIN has used this model to co-produce evidence, capacitate and invest in traditional food markets, and foster local agency. It has been central to co-developing and supporting implementation of inclusive governance mechanisms and engaging sub-national, local and city governments together with Market committees, food-specific group leaders, and vendors in SSA, Southern Asia, and Southeast Asia. The model has proven to be scalable within similar contexts in Kenya and transferable across different contexts, such as Pemba and Beira (Mozambique) and Bogor (Indonesia).

The model's four interconnected elements are: ***Know your local food system***, ***Nutrition-mobilised communities***, ***Inclusive Food Systems Governance***, and ***External network***s (Figure 1). Although the starting point is always ***Know your local food system***, once the model is in implementation, all four elements are designed to continually inform and strengthen each other. All elements involve on-going active learning that is respectful of culture and community knowledge and uses multiple forms of evidence.

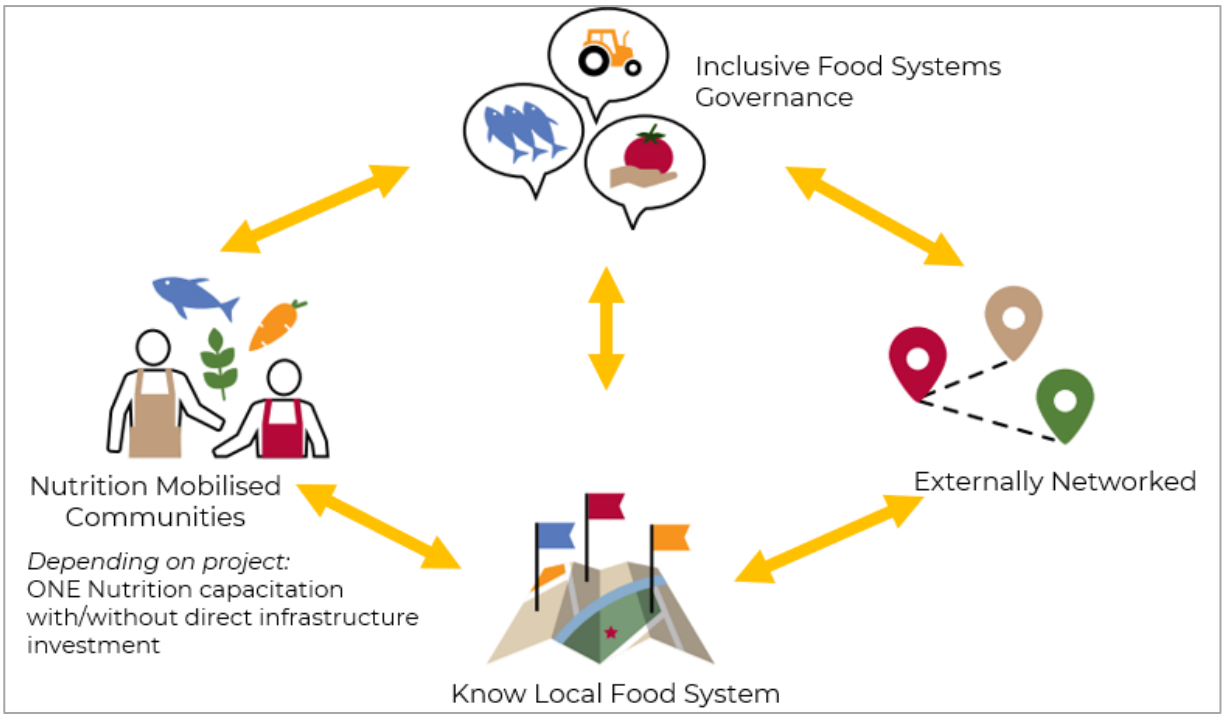

Figure 1. GAIN's Inclusive Food Systems Governance Model

During GAIN's Keeping Food Markets Working COVID-19 interventions (2020-2022) in cities/towns and markets in Beira and Pemba (Mozambique), Rawalpindi and Peshawar (Pakistan), and Thika-Kiambu and Machakos (Kenya) the model's design was developed. Policy option toolkits, co-designed by GAIN and the aforementioned six city/town governments and markets, offered practical insights into the evolving design of the model,

implementation, and outputs in the form of evidence informed, and locally led solutions (23, 24, 25, 26, 27, 28)[1]. The refined model (Figure 1) is presently used in GAIN's Food Systems Governance Resilient Markets and Veg4All interventions (2022+) in five urban communities in the Kenyan counties of Nairobi, Kiambu, Machakos, Mombasa, and Nakuru.[2] It is also used in GAIN's Nourishing Food Pathways programme to support secondary Milan Urban Food Policy Pact signatory cities, traditional food markets ,and street market interventions in Pemba (Mozambique), Arusha (Tanzania), and Bogor (Indonesia).

UNPACKING THE MODEL'S FOUR ELEMENTS AND TOOLS

The model adopts a pragmatic mixed-methods approach, using quantitative and qualitative tools. While attentive to the requirements of each method, this combination provides a rich, multifaceted understanding of contexts alongside empowerment and supported action in ways that strengthen local agency and amplify voices, especially of those who are often less included (like vulnerable, low-income communities).

This paper illustrates the model in action, attentive to each of its four elements, and describes a variety of tools that are used to implement it (Annex Table 1). Several of the tools, such as challenge and solution trees and photo elicitation, are adapted from well-known approaches. How these tools are used, by whom, and in what sequence are important considerations, especially in efforts to build trust, share learning, deepen understanding, empower participants, and provide sufficient time for all stakeholders to reflect, revisit, and progress during the co-design phases.

GAIN's Food Systems Governance programme, and consequentially the model, is informed by Participatory Action Research and Design Thinking. The approach strongly aligns with the Participatory Action Research commitment to bring stakeholders together, inclusively, to learn and act in context and have influencing voice according to their priorities (29). It adopts a Design Thinking empathetic framing of challenges, with innovative creative and iterative co-design of solutions underpinned by participant reflections (30, 31). The implementation of the model and tools involves stakeholders, like government and market representatives, working together to co-design and implement solutions. It also entails referencing best practices and taking inspiration from other sources (Annex Table 1). Active learning and reflection are core components throughout the model. For example, nutrition mobilisation requires stakeholders to actively engage, reflect, and connect their experiences, culture, family, and community relationships to new knowledge. Almost all tools support the disaggregation of insights by role, gender, and age. The next subsections explore each part of the approach in turn.

Know your local food system: This element aims to ensure that stakeholders can make well-informed decisions. It is typically the starting point of the model roll-out. Activities under this element aim to rapidly assess, then widen and deepen, knowledge of the food

[1] Short YouTube video clips of the model in action, in these six cities, can be accessed here: https://www.gainhealth.org/resources/reports-and-publications/policy-options-toolkits
[2] Kongwea Market (Mombasa County), Soweto Market (Nairobi County), Free Area Market (Nakuru County), Marikiti Market (Machakos County), Madaraka Market (Kiambu County)

system. This includes understanding how key stakeholders are socio-ecologically embedded within the system. The overarching interest is understanding the local social, economic, political, and environmental context. This is supported by mapping usual and unusual stakeholders, learning how each market is a food environment with infrastructure, and capacitating stakeholders so that they can continue to gather evidence and share it. The focus is also on understanding the extent to which markets are places where diverse, safe, healthy foods are available, accessible, and affordable to consumers and where vendors can pursue prosperous livelihoods, contribute to local economic development, and help reduce and valorise food waste. Since much is often unknown and/or tacitly known about traditional food markets, ***Knowing your local food system*** is important. Having evidence and a clear, explicit understanding of local food systems helps stakeholders better identify their shared and different priorities, leverage relationships with each other and with the environment, and be more aware of the specificities of gaps and challenges. Tools often used to implement this element of the model are: rapid desktop studies, rapid field exploratory studies, and structured field visits guided by checklists. The latter two tools can include observation, stakeholder mapping, exploratory and key informant interviews, focus groups, group meetings, surveys, infrastructure audits, and photo-elicitation (Annex Table 1).

Nutrition mobilised community: This mobilisation aims to empower government and communities with nutrition knowledge, skills, and, where possible, infrastructure investment. This enables them to make more informed decisions, act, and have voice at home, in the market and in governance platforms. Depending on the project, activities under this element deliver on a) ONENutrition learning (Box 1); b) Basic business skills for vendors; and/or c) Market infrastructure investment.

ONENutrition, a tool designed and tested by GAIN in multiple countries since 2023, is always implemented under this element as an essential pre-condition of market infrastructure investment. ONENutrition (Box 1) can be delivered in workshop format and/or as a series of short sessions to targeted groups within the markets.

A checklist tool is currently in development to support market stakeholders' implementation of the Codex Guidelines for Food Hygiene Control Measures in Traditional Markets for Food (32, 33). This checklist can be used by local authorities and market leaders (and vendors), either by being incorporated into their localised version of the ONENutrition tool or used as a routine management tool by vendors, market commitees, and local authorities.

Inclusive food systems governance: This element establishes the foundation for stakeholder interactions and guides local interpretations of policy and goals such as the SDGs, as well as the co-design and implementation of mechanisms like multistakeholder platforms (MSPs) and solutions. MSPs serve as a key tool for this element, providing a structured space for effective engagement of stakeholders. These platforms can be set up with a few stakeholders, such as market leaders, women vendor group representatives, and local/city government representatives. They can later be expanded and diversified to include other markets and/or wider groups of stakeholders, including those from multiple sectors such as transport. GAIN's experience shows that initially, a small, focused platform works well in vulnerable contexts where issues of trust and shared experiences are of particular importance and where understanding of how such platforms operate is new to stakeholders.

BOX 1. ONENutrition

ONENutrition is a comprehensive tool that systemically links nutrition and markets to the wider environment, food hygiene and safety, and reduction in food waste. It facilitates active, two-way, locally relevant learning while integrating globally recognised information and best practices. A key feature of the tool is its structured flow, which first establishes contextual relevance and then connects local knowledge and culture with new insights. ONENutrition consists of multiple components, including participatory mapping, reflective activities, and structured learning sessions. Five key pieces of information and/or best practices are taught for each focus area (nutrition, food hygiene and safety, and food waste).

While maintaining a universal structure, ONENutrition is designed to allow for local adaptation. For example, it typically incorporates country-specific dietary guidelines, inputs from country nutrition officers, and locally relevant food images to ensure relevance in different contexts. The tool has been successfully scaled and transferred across settings, thereby supporting sustained impact after project activities, usually through 'trainer of trainer' initiatives involving government health workers and/or market champions.

Beyond its learning function, ONENutrition generates valuable data in the form of basic demographics disaggregated by gender, age, stakeholder type and role; feedback surveys; co-produced sketches of typical versus aspirational, nutritional and planetary based meals; participatorily mapped food systems; and narratives. These outputs are fed back into the model, supporting further formative research and strengthening ***Inclusive Food Systems Governance*** platforms and mechanisms.

These platforms provide an inclusive and equitable space and impetus for stakeholders to co-design, implement, monitor, learn and refine market specific, food systems governance solutions. It is also a place where quieter, often excluded voices can be heard and later amplified to influence national, regional and/or global agendas (refer ***External networks***).

As illustrated by the policy options toolkits, co-designed by city and market leaders during GAIN's aforementioned COVID-19 pandemic interventions, MSPs do not require big budgetary investments (although this helps) to activate local agency and have the potential to be highly impactful and sustainable. Available time and routine agenda-setting are the main constraints. These can be addressed by leveraging champions and/or strategic and systemic linking to priority agendas. For example, MSPs have proven successful in city-market interventions because they are situated within the Inclusive Food Systems Governance Model rather than being standalone mechanisms. They function as a broader mechanism made up of multiple interconnected processes, enabling stakeholders to co-design and support solutions.

GAIN uses a series of inclusive governance workshops, which may or may not lead to the creation of an MSP (as this is dependent on the priorities and mechanisms that local

stakeholders identify). It is important to be open to stakeholder inputs while also providing technical support and sharing best practices like MSPs. An existing governance mechanism may already exist, but this may not be fully optimised, which provides an opportunity. GAIN's workshop series builds from evidence to co-design governance solutions, most notably MSPs. In GAIN's experience, single workshops or a targeted workshop week tend to entail quick and intense stakeholder engagement but constrain the effective inclusion of all stakeholders, especially vulnerable market vendors and market leaders. It may also limit the extent of buy-in, which is needed to operationalise MSPs and other mechanisms.

Once stakeholders have established an MSP or other inclusive governance solution, GAIN provides initial technical support, including assisting with the development of agendas, tracking actions, and facilitating learning reviews. As part of this support, GAIN shares information that often fails to reach city and market stakeholders in accessible forms (e.g., countries' Nationally Determined Contributions towards climate goals and UNFSS National Food Systems Pathways commitments).

External Networks: This element connects bi-directionally with all model elements. It facilitates the connection of local interventions to national, regional, and global food systems, food security and nutrition networks and fora, and vice versa. In this way evidence, inspiration, experience, and best practices can be shared; donors and investors are made more aware and informed; and advocacy and influencing activities are grounded in interventions across multiple contexts. An example of this are GAIN's efforts drawing on formative research and market and governance programmatic experience to advocate for universal, science-based, and practical hygiene guidelines in traditional markets for food through the CODEX body (32). Other examples are the Food Action Cities platform, which facilitates city-to-city sharing of learning and resources, and working with cities that are or would like to be signatories of the Milan Urban Food Policy Pact (a city food systems governance network, connecting more than 200 cities worldwide)[3] (12, 34).

MODEL IN ACTION: MARIKITI MARKET AND MACHAKOS COUNTY CASE

GAIN's partnership with Marikiti Market and Machakos county government is an example of applying the Inclusive Food Systems Governance Model (Box 2). It includes progressive investment in hard and soft infrastructure as part of ***Nutrition mobilised communities***. During the 2020-2022 period, GAIN's emergency COVID-19 response strove to keep markets working to support livelihoods and access to food for the most vulnerable. Support included supply of water tanks, face masks, and hand sanitiser to facilitate compliance with hygiene rules aimed at reducing COVID-19 transmission. It was also during this time that the model was developed and operationalised by working closely with market and county government leaders. This section provides an overview of this partnership, between 2020 and 2025, through the elements of the model.

[3] See www.foodactioncities.org

BOX 2. Introducing Marikiti Market, Machakos

Marikiti Market is in Machakos, the capital of and largest town in Machakos county. Characterised by an arid urban-rural landscape, this county is rapidly urbanising. Machakos town forms an important part of the flows of people and food between Nairobi, Kiambu, and Machakos counties (23, 24). While subsistence crops like maize, sorghum, and beans as well as mangos for commercial sale are grown in the county, residents of Machakos county are highly dependent on purchased foods, with nearly 90% of all foods consumed being purchased (24, 35). Moreover, almost a third of Machakos county residents, 32%, experience food poverty, underscoring the importance of Marikiti market as a place where local consumers buy their food (9, 35). This market, like many others in Kenya, comprises a mixture of wholesale vendors selling larger quantities of food and smaller retailers. Although eggs, live chickens, and some processed foods are sold in the market, most of the food sold is dry staples and fresh vegetables and fruit. Marikiti Market vendors source the foods they sell from surrounding counties, including agriculturally rich Kiambu and Busia counties, and from locations across the border from Tanzania (24).

Machakos County Department of Trade, Industry, Tourism and Innovation is the mandated public authority that oversees Marikiti market. Revenue, in the form of vendor fees, is efficiently collected each day using a cashless payment system connected to vendor identification numbers. In turn, the county government, with intersecting mandates from various departments (e.g., Departments of Health Services, of Agriculture, Food Security and Cooperative Development, and of Finance, Economic Planning, Revenue Management and ICT), is responsible for providing services such as electricity, waste management, cool rooms, cleaning, food safety inspections, and security (23). Daily operations are coordinated by a Market Master, recruited by the County Assembly of Machakos, and an elected Market committee. Presently, the majority (75%) of this 12-member committee comprises women vendors. Over the years, market and governance challenges have included basic service interruptions, lack of dry and cool room storage, vermin, blocked drains, vendor produce exposed to direct sunlight, heat and rainfall, poor infrastructure maintenance, insufficient food hygiene practices, lack of nutrition knowledge, food waste, and a service management-dominated arrangement with the county government (9,24, 36, 37, 38).

MACHAKOS: KNOW YOUR LOCAL FOOD SYSTEM

During the pandemic, GAIN was able to gather data about Markiti market and the county government using vendor surveys, desktop studies, and rapid assessment studies involving focus groups, key informant interviews, satellite imagery, observation field visits (24, 36, 37). Attentive to best practice and pandemic rules, data had to be gathered rapidly whenever possible, using a mixture of in-person, hybrid, and fully remote engagements. The purpose of this data collection was to support market and government leaders' decision-making during the pandemic and to better inform how GAIN could best support the market. These

efforts were also supported by an advisory body, comprising global and local experts in different food system fields (e.g., economics, food safety, nutrition, and governance) (24). Stakeholder meetings were held to share and ground-truth the evidence and then to co-design an inclusive governance mechanism with clearly defined activities and responsibilities.

In 2022, GAIN scaled and deepened its support from two counties (Machakos and Kiambu) to five counties (Machakos, Kiambu, Nairobi, Mombasa, and Nakuru). The previous interventions and trust-building during the pandemic provided a solid foundation for this; locally expressed interest and necessary permissions were also essential. Efforts started by updating the evidence base for Machakos. In 2022, vendor (n=215) and consumer (n=140) surveys were conducted in Marikiti market to learn about the market food environment (9, 38). They encompassed availability and types of food sold; physical accessibility of the market; food safety; dietary behaviours; vendor practices; consumer food purchasing; and governance (38). The Diet Quality Questionnaire (DQQ) for Kenya was included in both surveys to understand vendors' and consumers' diets (Annex Table 1) (39). These market-specific survey data were analysed and later pooled with data from four other county markets and analysed to obtain a territorial perspective on markets in this region (9, 38). The findings confirmed that Markiti market was the primary source of consumers' food and contributed to dietary outcomes. It also showed that many vendors knew of and engaged with the Market committee and that vendors were eager to learn more about nutrition, food safety, and basic business skills. Together with literature reviews and the pandemic data, the Marikiti market survey data was shared and ground-truthed during the first inclusive governance workshop involving vendors and representatives from the Market committee and county government.

An infrastructure and market operations audit was conducted in 2022 to assess the design, layout, and types of existing infrastructure as well as how these were used and for which purposes. The audit included a review of recently introduced infrastructure, such as the addition of raised concrete counters for vegetable vendors to keep their products off the ground as well as the expansion of pitched, corrugated metal roofing and concrete slab flooring, which provided an additional 438 m^2 of usable and sanitary market vending space. Given the prevalence of vendors selling fresh fruits and vegetables, which have high nutritional value but are highly perishable especially with hot temperatures, a key identified investment was a cool room (38, 40). Cool rooms in markets can enhance efforts to realise multiple food security and nutrition objectives, such as increasing the shelf life of perishable produce and reduced food waste, with co-benefits for the environment, vendor prosperity, consumer access to (and potentially also more affordable) fresh vegetables and fruits.

MACHAKOS: NUTRITION MOBILISED COMMUNITY

Investments were made in hard and soft infrastructure (Table 2). This helped facilitate ***Nutrition mobilisation*** of the key stakeholders. Critically, it is the combined investment in hard and soft infrastructure for nutrition mobilisation as well as the model elements of evidence, governance, and networks that provide the enabling structural and capacity conditions for long-lasting, sustainable, and resilient markets.

An example of mobilised local agency following hard and soft infrastructure investment was the appointment by the Market committee and vendors of a paid cleaner to maintain bathroom WASH facilities during the pandemic. The cleaner's fee was determined by the committee and vendors and paid for by those who used the facilities. Part of the cleaner's responsibilities are to inform the Market committee of issues like interrupted water services or non-operational pipes. This in turn enables the Market committee to timeously notify the county government. Another example of activated local agency is the vendors' routine removal of waste from drains. Polluted drains attract vermin and, when blocked, cause flooding in the market during heavy rains. This damages vendors' food, even when stored on mats or in baskets.

The deepened roles and responsibilities of trained and mobilised market stakeholders are evidenced by the co-designed Inclusive Governance market vision, principles, and action plan for and by Marikiti (Box 3). Furthermore, there is a reciprocal relationship between step-by-step hard and soft infrastructure investment in Marikiti Market, technical support, and stakeholder interest in becoming more informed and empowered.

Cool Room 'Hard' Infrastructure Investment

Building on previous investments, technical support, and stakeholder nutrition mobilisation, in 2022, the Market committee and county government identified a space within Marikiti Market as the site for a cool room. As part of its technical support and investment, GAIN commissioned a firm to undertake a cost-benefit feasibility study for the proposed cool room. The cool room was designed with a temperature range primarily suited to storing green leafy vegetables and other vegetables and a limited selection and quantity of fruits. The focus on these food types was informed by their nutrient value, local dietary preferences, their perishability, and the fluctuating availability and accessibility of vegetables and fruits in Machakos (9, 38, 40). Notably, cool rooms designed to store fish and/or meat require colder temperatures, with an associated increase in cool room construction and service costs.

Construction of the 302.4 m^3 cool room was completed by June 2024 with power provided by a hybrid (solar and traditional energy) system. Details of the types of infrastructure and costs are presented in Table 2, and roles and responsibilities for management, maintenance, and technical support are outlined in Table 3. Additional training on how to use and manage the cool room was provided by the team who constructed it. County government officials, Market committee members, and some vendors received training in use and basic maintenance of the cool room as part of the service provider's handover. The overall implementation period from technical study to operational cool room was less than a year; although spanning two years with breaks in between due to procurement, review, vendor space allocation and training processes. Marikiti Market's cool room was officially inaugurated with the support of the county governor, several county departments, the Market committee, and vendors on 15 January 2025.

Table 2. Infrastructure Investment in Marikiti Market *

2020-2022	Infrastructure Investment	Approximate Cost (USD)
Installation of concrete slabs/counters and pavement paving blocks	i) Concrete counters (for vegetable vendors); ii) Cabro slabs; iii) Installation of culverts and drains.	44,200
Water tanks and handwashing stations; and Toilet Renovation	i)Installation of two 5000-litre tanks; ii) Installation of 8 handwashing stations (I and I – USD 13,300) ; and ii)renovation of 4 door toilet (USD4,700)	18,000
Fixing of market roof/ shade	Substructure: excavation and earthworks; anti-termite treatment; concrete works; formwork, plinth finishes, cement, and sand. Superstructure: metal stands (75 X 75 x 2.5 mm thick), 2700 mm high poles firmly fixed to the ground floor using bolts, holding down plates and welded to the joining trusses on top with support brackets to both the top and bottom as. Epoxy zinc-rich primer coat applied to metal. Roofing: Galvanised mild steel sheet (14 gauge) and steel joints and connections. Finishes: Paving slabs installed.	85,700
Sub-Total		**147,900**
2022-2024		
Infrastructure and Market Operations Audit	i) Mapped market entrances and key infrastructure (e.g. toilets, hand basins, waste bins). ii) Assessed quality of structure; iii) Feasibility study on cold room installation including location and sustainability plan; iv) Assessed market management, vendor operations, gender and age insights; vendor fees.	7,500
Cool room installation (Volume 302.4 m^3; area 126 m^2)	i) Construction of masonry walls, partitions, and a cleaning station; ii) Plaster and paint, terrazzo floor finishes; iii) Installation of PVC ceilings, windows, door, electrical points and insulation panels; iv) Supply of cold room store equipment, including bins and signage.	94,600
Solar harvesting equipment installation	Supply and installation of integrated solar harvesting and distribution solution to power electrical equipment of capacity 20 KW and provide utility to associated power points and lighting in cool rooms. Hybrid system with ability to connect to batteries.	41,100
Sub-Total		**143,200**
Total Infrastructure Investment Cost		**291,100**

* Costs provided are based on actual costs but should only be taken as approximate reference points. These costs exclude in-kind support from county and market stakeholders as well as GAIN Technical Assistance and were calculated using USD–Kenyan Schilling exchange rates as of 6 November 2024 and with some costs benefiting from bulk purchases for 3 – 4 markets

Table 3. Marikiti Market Cool Room Stakeholder Responsibilities

Stakeholder	Agreed upon Responsibilities
County Government	**Fee Collection and Fund Management:** Implement a cashless payment system to collect cool storage fees from vendors. Open a special purpose account for the collected funds. Ensure accountability and availability of funds to pay cold room bills and cover maintenance costs. Employ and manage cold room operations personnel. **Operational Oversight:** Monitor the overall performance of the facility. Ensure that collected funds are used appropriately for maintenance and operational needs. Offer technical support for maintenance and repair of the cold room infrastructure. Assist in securing funding and grants to support sustainability initiatives and upgrades. Conduct periodic audits to ensure operational efficiency
Market committee	**Custodianship and Oversight:** Daily stewardship of the cool room, including oversight security and operations such that market regulations are followed. Monitor the facility's use and operations, ensuring transparency and vendor inclusivity, that the rights of vendors are always protected, and that the cool room is meeting the needs of vendors. **Facilitate effective communication** between vendors and county government authorities.
GAIN	**Monitoring and Access:** Retain the right to access information and the facility to ensure effectiveness, use and monitor the management.
Construction related Contractors	**Technical Support:** Training for users; Repairs or adjustments post installation. Conducted cooling efficiency tests and storage condition verification after installation and after electricity connection, including with vegetable samples over the course of 5 days. Continued provision of technical support for one year, and option for the county to extend for regular maintenance.

ONENutrition and ONEBusiness

In 2023/4, together with the County Department of Trade, Industry, Tourism and Innovation, the Department of Health Services, Marikiti Market committee, and market vendors, GAIN localised, tested, and implemented its ONENutrition tool (See Box 1). In Machakos, 52 market stakeholders, most (85%) of whom were women were trained in nutrition knowledge and practices, including environment considerations, food hygiene and safety, and reducing food waste. Participants valued ONENutrition's approach, which they found to be respectful of their knowledge and cultural practices while also teaching them about nutrition, food hygiene and safety and waste. The localised version of the ONENutrition tool has now been adopted by five county governments (Machakos, Kiambu, Nairobi, Mombasa, and Nakuru). As part of a ONENutrition Training of Trainers activity, in 2024, GAIN trained 25 government representatives from all five counties in the use of the tool; 60% were nutritionists and 40% public health officers, and 68% were women. These trained representatives then trained 217 vendors in four of these counties, including Machakos. The plan for 2025/6 is for these trainers to each train 60 market vendors and some last mile vendors per each of the five counties in the five respectively targeted markets, including Marikiti (Machakos), and for these vendors to then act as ONENutrition champions, reaching more vendors and facilitating sustainability of the ONENutrition intervention.

Vendor business training aimed to foster entrepreneurial and financial management skills of vendors and assist them in better managing types of stock and stock flows, which could have positive impacts on their business and the environment. In Machakos, GAIN worked together with a local ONEBusiness training provider to train 51 market stakeholders in 2023. These included Marikiti Market committee members, vendors, and a representative from Machakos County Government; 94% of participants were women.

MACHAKOS: INCLUSIVE FOOD SYSTEMS GOVERNANCE

The Machakos Policy Option Toolkit, which was co-designed by market and county government stakeholders during the pandemic, continues to guide and provide confidence and inspiration to those stakeholders today (24). Many of the options therein are practical and low cost, and several target women and youth; and they clearly assign shared roles and responsibilities between the committee, government, and market vendors. At the start of the next investment phase, in 2022, the vendor survey revealed that most vendors understood and valued the role of the Marikiti Market committee. Of the vendors surveyed, 53% stated they had eagerly participated in the activities of the Market committee in the prior six months. Many vendors also showed interest in continuing their participation and in improving their knowledge and skills in areas like business practices (57%), food safety handling and practices (47%), and marketing (36%) (9, 38).

GAIN facilitated a series of four inclusive governance workshops with Marikiti Market stakeholders (vendors, committee members, and government). Throughout there has been a consistent expression of political commitment by, and deepening of social trust with, various government representatives (e.g., Office of the Governor, County Department of Health Services, County Department of Trade, Industry, Tourism and Innovation, and County Department of Gender, Youth, Sports and Social Welfare). The overarching goal of these workshops was to ensure effective inclusion in sharing knowledge, co-producing knowledge, and co-designing solutions, with shared responsibilities and an aspirational market narrative. Workshops began with ground truthing and sharing evidence from the surveys; they then included co-producing evidence about how the market and county government are embedded in their local food system and identifying priorities. Food systems maps were gender-attentive and linked policy, strategy, and plans like the County Integrated Development Plan (CIDP) and Hustler Fund (a local financial inclusion initiative (41)) as well as legislation to the daily operations and experiences in the market.

Expressed stakeholder priorities focused on nutrition, food hygiene and safety, food value addition to reduce food waste, governance relationships, enhanced access to food systems information, infrastructure, access to finance, and improving the quality of supply chains Key outputs of workshops 3 and 4 were the co-designed market aspirational vision, guiding principles, and an action plan with detailed roles and responsibilities (Box 3). The vision and

BOX 3. VISION AND PRINCIPLES OF MARIKITI MARKET

Vision: Marikiti Market to be a locally and globally recognized market where consumers and vendors get quality, affordable, safe, diverse, nutritious food and services.

Principles: Marikiti market will:

- Ensure safety of the food and security for vendors and buyers at all times.
- Facilitate the highest standards of hygiene through appropriate personal hygiene, waste handling and disposal.
- Be transparent and accountable to the wholesalers, customers and vendors on a day-to-day basis.
- Advocate for good governance by ensuring fair representation leadership at market level.
- Collaborate with relevant key stakeholders to ensure supply of fresh healthy food products.
- Establish and facilitate gender equity in the allocation of the working spaces in the market.
- Sensitize customers on nutritional values of the products sold in the market and the importance of fair-trade policies.
- Promote global recognition through adoption of modern technologies, e.g., Online marketing.

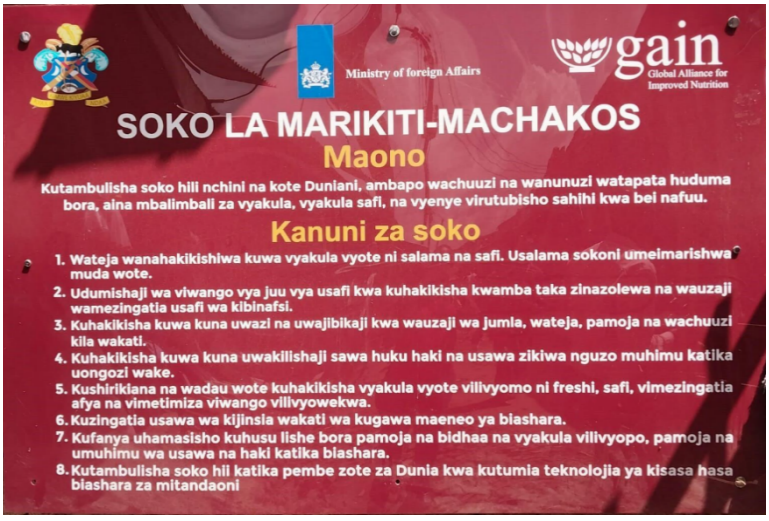

Figure 2. Vision and principles signage in Marikiti Market

principles are visible as a constant inspiration on signboards in Marikiti market in English, Swahili, and Kamba (Figure 2).

The cool room infrastructure investment in Marikiti market harnessed this growing inclusive governance culture of working together for a more prosperous and resilient market for all. While this market is a publicly governed food place, built on public land and managed by government, over the years market leaders and vendors have shown that they view themselves as part of this place and part of solutions designed to increase accessibility to a diversity of safe, nutritious foods, reduce food waste and support the management of infrastructure and basic service provision. As the market is technically a government mandate, approval to construct infrastructure like roofing and the cool room was an essential prerequisite. GAIN also facilitated the engagement of the Market committee and vendors in this decision-making.

At the official inauguration of the cool room, GAIN's handover certificate to the county confirmed the county's ownership of the cool room and detailed the county's responsibilities to finance operational costs and maintenance, including electricity and equipment servicing, and to conduct annual inventory assessments. The cool room will now be managed by the County Department of Trade, Industry, Tourism and Innovation, with its use and supporting maintenance determined together with the Market committee (Table 3). This includes the determination of a cool room use fee of Ksh 10 per crate per day (determined based on costs and through engagement with vendors). Furthermore, a joint decision was made that only vendors who are registered to sell in the market on a daily basis can use the cool room. Currently, the market has between 800 and 1,200 vegetable vendors who are registered to use the cool room.

MACHAKOS: EXTERNAL NETWORKS

Examples of External Networking activities, which involved local/city government and traditional food market stakeholders, their priorities, enabling conditions and learnings, including those from Machakos, include:

- The first SSA Markets and Governance 'Kongamano'[4], co-hosted by GAIN and the Kenyan government, was held in April 2024 to share approaches and learning and to network and better synergise for greater impact. The workshop brought together government representatives from National and County governments in Kenya, the five Market committees from the aforementioned Kenyan markets, partners and donors, and GAIN staff working on market and food systems governance across the world.
- An expert meeting in Rome, co-hosted by FAO, GAIN, and Rikolto, in June 2024. This brought together global experts in markets, governance, and public food procurement to critically engage and build bridges across disciplines and to raise the prominence of markets in global food systems, nutrition, environment and economic discourses. This meeting built on the growing impetus around local and city governments and local and traditional markets as a strategic entry point for food systems transformation.
- Technical inputs and championing of the development of the Codex Alimentarius Guidelines for Food Hygiene Control Measures in Traditional Markets for Food (32, 33).

These networking activities are further informing GAIN's efforts elsewhere, like in Arusha (Tanzania), Pemba (Mozambique), and Bogor (Indonesia), which aim to support local and city governments and market leaders to localise their countries' Food Systems Pathways for transformation. A case study on Machakos county and Marikiti Market - together with five other cases linked to GAIN - is also included in ***The Global Handbook on Cities and Markets*** which will be launched on 31 March 2025 at the Climate Chance Europe Africa Summit. The development of this handbook was led by ICLEI CityFood with contributions by GAIN, the World Farmers Markets Coalition and various ICLEI regional offices worldwide.

[4] This 4-day workshop and market visit event was branded: Kongamano i.e. Swahili word for 'conference'

CONCLUSION

GAIN's Inclusive Food Systems Governance Model was designed to support programmatic interventions and on-going locally led sustainable development. This encompasses county, local, and city government mandates and the routines and practices of traditional food market stakeholders like committees, food group leaders, and vendors. All four elements of the model and supporting tools facilitate the empowerment and voice of government and market stakeholders in exercising best practices and local agency. This model, with its participatory and innovative Design Thinking frame, offers an evidence-based, dignified, scalable, and transferable approach that can help increase market infrastructure investment. It is especially attentive to leaving no-one behind, fostering local economic development, and nurturing positive socio-ecological food system relationships for long term sustainability and resilience.

A fundamental market investment challenge is the limited evidence on and understanding of how these markets (and stakeholders) are embedded in the wider food system. Other challenges include contextualised understanding of the wholesale and retail dynamics within these markets, inadequate 'fit for purpose' financial models, insufficient public budgets, limited capacity, and constraints to local empowerment. Classic financial models that purely focus on monetary cost-benefits need to be set aside for innovative models that value social, ecological, economic, and governance realities in low-income communities. This proposal is not new; examples like the MPESA finance system prove the scale of the financial opportunities in these communities. A typical response to market investment challenges in regions like SSA is to support climate smart infrastructure and technology for perceived less risky, wholesale and larger retail market investments, supported by large loans to national governments. However, this approach fails to leverage the diversity and enormous potential of existing, integrated, and sustained networks of local and traditional markets. There is a missed investment opportunity to leverage market-related government mandates that are underpinned by inclusively governed and locally led food systems transformation involving multiple market stakeholders. Such governments and market stakeholders are often more fully embedded in local, territorial, and cross-border food systems than national governments.

Since infrastructure investments by donors and national governments are relatively limited, it is important to make a sound business case for public and private (and philanthropic) partnerships and banks to invest in traditional markets. Part of making this case is proving that local and city governments and market stakeholders lead, are actively responsible for, and inclusively engaged in the process; approaches must also be clearly evidence-based and robustly implement best practices like food hygiene as well as robust financial practices. They should also be connected to city networks and food systems fora. Ensuring these conditions are met helps improve investor confidence, especially by offering tangible proof of various ways in which investment, particularly in hard infrastructure, is and can be de-risked. Activated and empowered local agency, from the government and market sides, further offer substantive ways in which hard and soft infrastructure investment models can be innovated upon and enhanced. Showing how markets are key systems connectors between smallholder farmers and rural and urban consumers can also increase motivation for investment. Investors should be able to build

on what has been proven to work and to design more diverse and innovative financial options that are fit for traditional markets and local-city governments, which are central to local communities.

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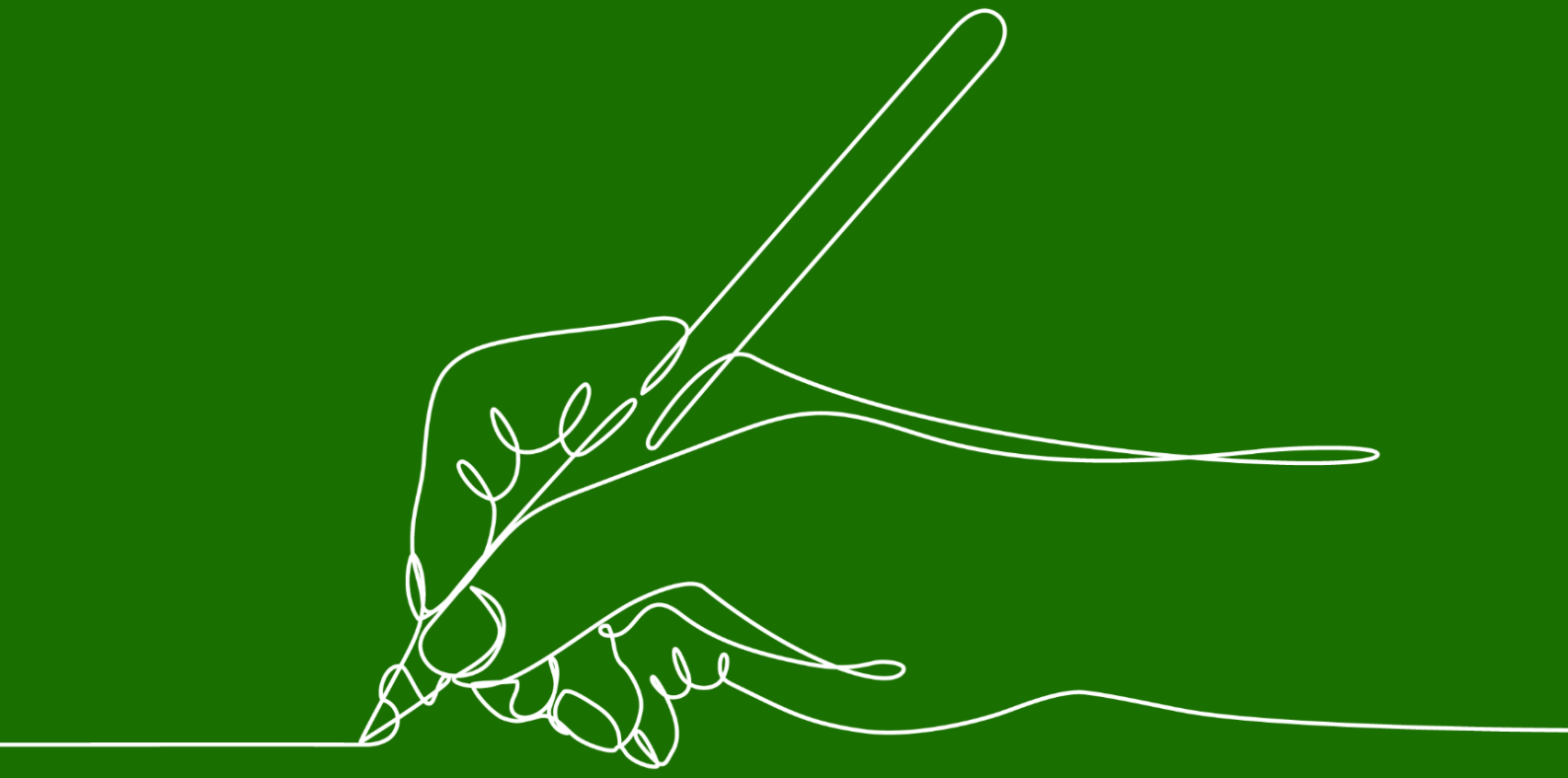
Annex Table 1. Selection of Tools used in the Inclusive Food Systems Governance Model

Tool	Used in Model	Adapted from	Brief Notes
Desktop studies	All four elements	Various literature review methods as per best practices	Review of peer-reviewed and grey literature to contextualise programmatic frames and learnings; operationalise key concepts and approaches; and disseminate knowledge. Stand-alone outputs and used as part of other tools like mapping and rapid assessments.
Mapping	All four elements	Community Mapping; World Health Organisation (WHO) Organigraph Governance Mapping (42); Stakeholder Mapping	Several interpretations of these mapping tools are used throughout project activities including use within tools like ONENutrition, where participants map how they are embedded in their local food systems considering nutrition, then food hygiene and safety, then food waste. Mapping is used to support baseline landscaping and for project activities like workshops, monitoring, learning, advocacy, and influencing – with routine mapping updates. Importantly, in low-income communities, traditional markets and under-resourced and capacity-constrained local and sub-national governments, it is insufficient to use stakeholder mapping, which confines assessment to interest and influence.
Surveys	Know your Local Food System	Designed by GAIN	These build on market (vendor and consumer) and government surveys designed and used during GAIN's pandemic market response initiatives. They are typically used at the start of initiatives as part of exploratory or baseline assessments and can be used in end-of-project evaluations. In Kenya complementary vendor and consumer surveys were used in 2022-23 in five markets and analysed per market as well as using pooled data to understand urban food environments and dietary quality (9). These surveys usually include the DQQ (39).
Feedback Questionnaires (Surveys)	All four elements	Designed by GAIN	Typically a mix of basic socio-demographic questions with choices presented in pre-set categories, five-point Likert scale questions, and 1 – 2 open questions. Designed for use following many project activities, including exploratory and routine field visits to markets.

Tool	Used in Model	Adapted from	Brief Notes
Dietary Quality Questionnaire (DQQ)	Know your Local Food System	Used as designed by the Global Dietary Quality Project (39) (Gallup, Harvard Department of Global Health and Population, and GAIN).	A stand-alone tool that can be incorporated into other tools like the previously noted vendor and consumer surveys. Gathers data on populations dietary quality. A global tool with country specific versions.
Rapid Assessments	Know your Local Food System	Designed by GAIN	Often used for exploratory and initial landscape assessments of governance and markets and customised for emergency assessments. Combines desktop studies and observation checklists with exploratory interviews and/or focus groups and/or key informant interviews.
Infrastructure Audits	Know your Local Food System	Project-specific. Designed and led by technical service providers with GAIN inputs.	
Photo Elicitation	All elements	PhotoVoice and Photo Elicitation methods (43; 44)	Consistent with Photovoice attention to capturing priorities, empowering, reflecting and enabling voice of women and others like marginalised market vendor communities. Adapted GAIN version tends to be more photo elicitation than strictly Photovoice, with refinements to support specific contexts (e.g., type of instrument used to take photographs, individual and/or group design and composition).
ONENutrition	Nutrition Mobilised Communities	Designed by GAIN	Includes several participatory versions of tools like mapping and sketching typical and imagined meals that reflect locally and culturally meaningful, nutritious, and sustainable diets. For further insights see Box 1.
ONEBusiness	Nutrition Mobilised Communities	Project-specific. Designed and led by technical service providers with GAIN inputs.	

Tool	Used in Model	Adapted from	Brief Notes
Checklists	Know your Local Food System Inclusive Food Systems Governance	Designed by GAIN	Used by GAIN, local champions, and Market committees to routinely assess governance and market contexts and transformation.
Bubbles	Know your Local Food System Inclusive Food Systems Governance	Mind-mapping Visual data display bubbles	Complements mapping tools and is particularly useful when sharing and ground-truthing evidence, such as survey findings and co-designing governance solutions.
Challenge and Solution Trees	Know your Local Food System Inclusive Food Systems Governance	Challenge and Solution Tree methods sometimes also called Problem Trees	
Bellwether	All elements	Harvard Family Research Project (policy) as adapted by Cook and Mumford to track policy saliency and will (45)	From inception of programmes, GAIN team members are themselves 'Bellwethers', reporting on their interactions and identifying key moments that could and/or do result in a vital step forward, such as political buy-in from a city mayor. Ongoing field discussions are also viewed as 'bellwether' insights. Once a multi-stakeholder platform is established and/or the ONENutrition tool is adopted, then influential stakeholder 'bellwethers' are identified who can provide routine, informal, but structured insights into the local interpretation and implementation of food systems governance and best practices.



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ABOUT GAIN

The Global Alliance for Improved Nutrition (GAIN) is a Swiss-based foundation launched at the UN in 2002 to tackle the human suffering caused by malnutrition. Working with governments, businesses and civil society, we aim to transform food systems so that they deliver more nutritious food for all people, especially the most vulnerable.

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