

## Policy pointers

**Policymakers aiming to increase urban food security and safety should recognise street vendors' important role and support them and their organisations to improve the safety and quality of urban food.**

**Participatory mapping** lets local organisations in informal settlements reflect on how to expand community-based activities that improve food security.

**Mapping also reveals** communities' innovative use of public space and its informal governance, demonstrating a strong role for settlement-led development solutions.

**However, progress on food security and safety in informal settlements still depends on a foundation of sound housing, land tenure and infrastructure policies.**

## Dining with less danger: mapping food and environmental hazards in Mathare, Nairobi

Street vendors play an important role in securing access to food for the residents of low-income settlements in many cities. Yet they are often seen as providing unsafe food and contributing to environmental degradation. In Nairobi, the local federation of the urban poor, Muungano wa Wanavijiji, set out to explore how to improve food safety and work with street vendors and livestock keepers, who are in most cases also local residents. This briefing describes how community-led mapping, including innovative techniques such as balloon mapping, helps create knowledge, and identify new initiatives that reflect local communities' needs and priorities.

Poor urban households rely largely on the informal sector to buy their food. Informal food processors and vendors are also key actors in the large informal economies typical of many African urban centres, including Nairobi. Yet their important role in securing access to food for low-income consumers, providing income-generating activities for poor residents and their overall contribution to the local urban economy go largely unrecognised by planners and policymakers.

In informal settlements, food processors and vendors face constant challenges in keeping their food safe to eat. Inadequate solid waste collection, surface water drainage and often-non-existent sanitation infrastructure are hazards that affect both residents and vendors. In the crowded informal settlements, people must compete with roaming chicken and goats for limited public space. With no water to wash their hands or their fresh vegetables and no clean place to store their

food and their utensils, traders as well as consumers are exposed to an endless cycle of risk.

Recognising street vendors' important role and supporting them to improve food hygiene is a major entry point for increasing urban food security and safety. Vendors can both affect, and be affected by, the city's spatial structure, land-use and how infrastructure and services are provided. Involving food vendors and their associations is vitally important for community-led infrastructure planning.

This briefing reports a project in Mathare informal settlement, Nairobi, Kenya. Carried out by the local urban poor federation, Muungano wa Wanavijiji, with support from Muungano Support Trust, IIED and the Development Planning Unit of University College London, it set out to map the informal food web in Bondeni Village in Mathare, detailing the physical constraints affecting food

vendors and food safety, and showing how community led-mapping can help tackle poverty issues.

## *In informal settlements, food processors and vendors face challenges in keeping their food safe*

### Participatory mapping in Mathare

Accurate up to date maps rarely exist for informal settlements. In Mathare, the team combined community-led mapping techniques, group

discussions and low cost aerial photography (balloon mapping) to map infrastructure (footpaths and roads; public and private light/electricity sources; public and private toilets etc) and environmental hazards (steep slopes, dark alleyways, flooded areas, open-air sewage and dumpsites).

**Begin with brainstorming.** We started our mapping exercise with a brainstorming session where we explored what we already knew about the settlements, what to map, why and where mapping would be worthwhile, then what tools and techniques were available.

**Mobilising the community.** A consensus building and mobilising session with the community consolidated and verified our

brainstorming and led into a mental mapping exercise with street vendors and residents to establish an overall picture of the place and issues to survey.

**Mapping techniques.** We then trained the community for mapping and surveying using paper maps, a mobile phone survey app that captured locations of vending, food vending types accompanied by a photo, observations on food safety issues such as whether foods are covered or not, and aerial photography from cameras suspended from helium balloons. This balloon mapping helped us to capture current birds-eye views of the local built environment for selected sites and along our walked transect. Stitched together, they became a low cost alternative to satellite imagery.

**Discussion groups.** Alongside the mapping, focus group discussions involving vendors, consumers and livestock owners provided information about how residents use their public spaces, identifying the main streets and walkways, recording where children play, where livestock are kept, street vending locations and the types of food sold, and also noting waste dumping sites. These discussions mapped and captured people's perceptions of environmental hazards and how these relate to each other.

**Sharing the findings.** Following the community-led mapping and data collection session the project team discussed, analysed and synthesised the data. Afterwards, we had an immediate reflection and knowledge consolidation session with the community. This well-attended discussion helped define the most pressing priorities and rank them by importance. The community see this consolidated and updated knowledge-base as a spur for further deliberation, dialogue and updating of the Mathare Zonal Plan<sup>1</sup> as well as for advocacy and policy action that will help the community negotiate with public authorities for infrastructure planning and for improved public spaces. See Box 1 for views expressed by the community.

### Mathare's informal food web

Mathare's informal food web includes food production (urban agriculture and livestock keeping), processing (cooking and packaging of food), retail (selling cooked and uncooked food) and transportation (getting food supplies from markets to the food stalls within the settlement and also positioning stalls so that food is accessible to customers). These entrepreneurial activities provide affordable food, income generating opportunities, and even security on the streets. Street vendors have become a focal part of slum communities.

### Box 1. Community views

1. "I think one of the most significant battles for food vendors in Mathare to fight is the right for consumers to know what's in their food, and how it is prepared" — respondent, focus group
2. "The way we eat in informal settlements has changed over time; this is because we lack adequate cooking spaces in our shanties and more so we are prone to fire outbreaks. This is why we prefer ready-cooked food" — respondent, focus group discussion
3. "Food Vendors Association is not all about lobbying for the interests of food vendors but a strategic platform to champion issues of sanitation and improved basic infrastructure in the settlements which have direct impacts on food safety" — Julia Wacera, mobiliser
4. "My security and that of the settlement is a factor that dictates my vending hours" — respondent, focus group discussion
5. "In Mathare we've become a community of technicians! We would rather focus on the know-how, and not rubber stamp studies that did not involve the community" — Willy, community mapper
6. "Open spaces are social meeting points for many slum residents, often managed on the basis of collective informal governance" — respondent, focus group discussion
7. "Never before in my wildest thoughts have I ever considered that food is directly impacted by the status of sanitation infrastructure, but now I know" — consumer, focus group discussion

Residents of informal settlements demonstrate a strong ability to provide for their own needs and survive in difficult economic circumstances. The communities in Nairobi slums, such as Mathare, struggle with issues including inadequate housing, water and sewerage networks, inaccessible and unsafe sanitation services, unaffordable electricity and muddy roads. Many residents rely on street vendors for their cooked food and often for water, clothes and so forth. All street sellers rely on a locally functioning community, and this two-way reliance is manifested in strongly ingrained community solidarity, for example not selling milk with preservatives to families with children or by providing social support such as buying food from family members and neighbours. Even strains such as theft, loans between customers and vendors that turn sour, or conflict between livestock owners and food vendors fail to dent the strong social network within the settlement.

### The challenges of food vending in public spaces

Despite these roles, Mathare's street vendors are often seen as a problem. The public spaces where they work are often contested, and poor facilities pose further difficulties. Our mapping and survey work identified many challenges facing Mathare's informal food web, including:

- Vendors compete for spaces along major streets and may have to pay formal businesses for using their frontages
- Social and commercial exchanges in public spaces can cause obstructions
- Vendors generally lack shelter and proper storage facilities, while high humidity and temperatures increase food spoilage. Some vendors add preservatives such as magadi soda to their food, which could be harmful to the customers in the long run
- Pests including rats pose problems for vendors and customers alike
- Working in public spaces means livestock faeces can contaminate food, and livestock may themselves eat contaminated foods
- Sanitation infrastructure is often non-existent, and water may be expensive or unavailable
- Uncovered surface drains bring risks of poor health and flooding
- Inadequate solid waste collection fosters food contamination
- Floods can damage food transport and stop vendors from working

### Box 2. Nairobi's Food Vendors' Association (FVA)

The Food Vendors' Association began in late 2013, formed by the Kenyan Federation of Slum Dwellers, Muungano wa Wanavijiji. Its members come from three informal Nairobi settlements: Mathare, Huruma and Kibera. It champions food security issues in the informal settlements and infrastructure needs. Its membership has grown very quickly — to almost 400 individual vendors and producers in just a few months, suggesting there is great interest in this issue.

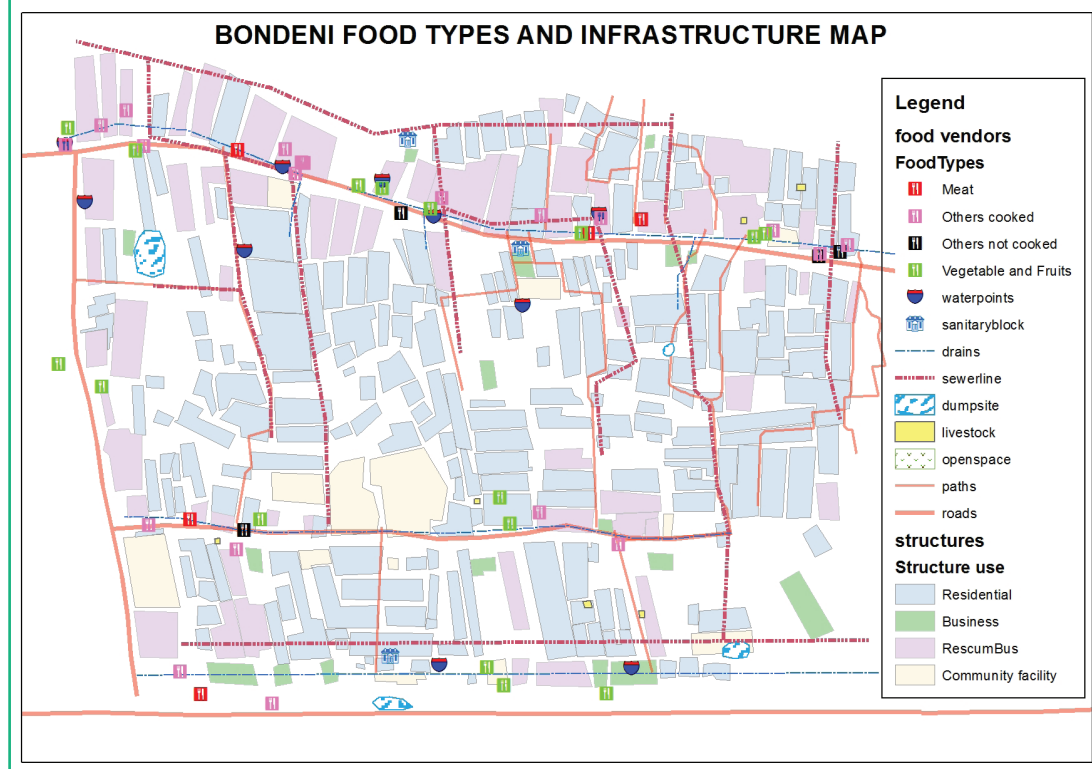
The members include women who sell vegetables and cooked food, people operating butcheries, kiosks owners selling food and cereals and livestock keepers. Members are organised in local groups who jointly buy maize flour and soap and develop a saving scheme from which they can get loans to expand their businesses (up to three times the value of their savings).

The FVA sees itself as a change agent taking a strategic initiative and championing issues of sanitation and other infrastructure in the settlements. It can integrate and scale up individual and personal actions, drawing on the deep social networks that exist in the informal settlements. FVA proposes several opportunities that food vendors and livestock keepers can embrace to enhance food safety in Mathare. These include: monthly trainings on food security and sanitation to create awareness of the importance of hygiene and how to enhance cleanliness at food vending spaces, and team clean up exercises to create collective responsibility among food vendors, livestock keepers and residents for keeping the settlement clean.

- Power cuts and black outs reduce physical security for both street vendors and their customers. When power cuts force vendors to close, their own earning potential is curtailed, as is their customers' access to cheap cooked food
- Food for urban livestock must be sourced from shops, markets/food vendors, neighbours or acquaintances. But contrary to popular perception, this need for animal food means street food vendors produce very little waste — peelings go to livestock food.
- Livestock diseases are difficult to control. Livestock keepers sometimes give sick animals human drugs, may keep their ill animals indoors, or may administer only remedies like aloe vera, pepper and vitamins. Sick animals are also sold or slaughtered before they can die
- Livestock are slaughtered in the settlement where waste removal is inadequate. So slaughter waste or whole dead animals may be left in the river or along the streets
- Street vendors often suffer evictions or forced closure by city authorities during disease outbreaks. This puts their livelihoods at risk and reduces access to food for the poorest residents of low-income settlements, who tend to be most dependent on street vendors.

Yet mapping also revealed how the spaces near environmental hazards are positively attractive to

Figure 1. Bondeni food types and infrastructure map



food vendors and consumers, because competition and costs there are low. Customers in Mathare opt for lower prices over higher quality when purchasing food.

## Opportunities and policy priorities

Food vendors play a significant role in informal settlements such as Mathare, and food vendor associations (see Box 2) and their initiatives on infrastructure can complement formal planning policies. In Nairobi and other cities there are opportunities for vendors' associations to collaborate with initiatives such as the Kenya Slum Upgrading Program and the Kenya Informal Settlement Improvement Project. Participatory mapping is a way to build this relationship.

Mapping can become a tool for communities to engage with public authorities. In Nairobi, the FVA has embraced balloon mapping as both a knowledge creation and a mobilisation tool. Such iterative and participatory tools offer the community leverage when advocating better access to water and improved sanitation. They can also showcase community-led infrastructure improvement and better social, health and environmental practices that have started to raise food safety in slums. Following the pilot study in Mathare, food mapping is now taking place in

Mukuru and Kibera, two other large informal settlements in Nairobi.

Mapping has also revealed how local communities use public spaces innovatively, managing these on the basis of informal governance. Policies on community lands should entrust communities with settlement led development solutions for such open public spaces (community markets, designated waste disposal points, and toilet and water blocks).

However, good food safety practices depend on a foundation of proper inhabitable and affordable housing and on basic infrastructure in low-income settlements. Without sound policy on housing, land tenure and infrastructure, rapid urbanisation will ensure poverty, food insecurity and poor health standards continue to coalesce in urban slums.

### Sohel Ahmed, Edwin Simiyu, Grace Githiri, Adrienne Acioly, Shadrack Mbaka, Irene Karanja, Leonard Kigen

Sohel Ahmed is a research associate at the Development Planning Unit, University College London, <http://iris.ucl.ac.uk/iris/browse/profile?upi=SAHMB67>. Edwin Simiyu is a programme officer working on community planning at Muungano Support Trust (MuST) and is a surveyor by profession. Grace Githiri is a community planner at MuST. Adrienne Acioly is a graduate of the DPU and an intern at MuST. Shadrack Mbaka is a programme officer working in communications at MuST. Irene Karanja is the executive director of MuST. Leonard Kigen is finance and administration manager at MuST.



## Knowledge Products

The International Institute for Environment and Development (IIED) promotes sustainable development, linking local priorities to global challenges.

Muungano wa Wanavijiji is a Kenyan settlement-based network of slum dwellers. This movement of the urban poor addresses the challenges of forced eviction, insecure tenure and livelihoods in poor communities. The Muungano Support Trust is a Technical Secretariat to Muungano wa Wanavijiji. [www.mustkenya.or.ke](http://www.mustkenya.or.ke)

The Development Planning Unit, University College London conducts research and postgraduate teaching helping to build the capacity of national governments, local authorities, NGOs and aid agencies in the global south.

### Contact

Sohel Ahmed  
sohel.ahmed@ucl.ac.uk

Edwin Simiyu  
esimiyu@mustkenya.or.ke

Cecilia Tacoli  
cecilia.tacoli@iied.org

80–86 Gray's Inn Road  
London, WC1X 8NH  
United Kingdom

Tel: +44 (0)20 3463 7399  
Fax: +44 (0)20 3514 9055  
[www.iied.org](http://www.iied.org)

IIED welcomes feedback via: @IIED and [www.facebook.com/theiied](http://www.facebook.com/theiied)

This research was funded by UK aid from the UK Government, however the views expressed do not necessarily reflect the views of the UK Government.



## Notes

<sup>1</sup> [www.mustkenya.or.ke/index.php/settlement-zonal-plans/mathare-zonal-plan](http://www.mustkenya.or.ke/index.php/settlement-zonal-plans/mathare-zonal-plan)