Urban food markets in Africa – incentivizing food safety using a pull-push approach (Pull-Push project)

Burkina Faso stakeholders' workshop report

Michel Dione[1], Ilboudo Guy[2], Valérie Lallogo Raymonde[2] and Theo Knight-Jones[3]

1 International Livestock Research Institute, Senegal

2 International Livestock Research Institute, Burkina Faso

3 International Livestock Research Institute, Ethiopia

September 2021


ILRI
INTERNATIONAL
LIVESTOCK RESEARCH
INSTITUTE


CGIAR


BILL & MELINDA
GATES foundation


UKaid
from the British people

The Program thanks all donors and organizations which globally support its work through their contributions to the CGIAR Trust Fund

Editing, design and layout—ILRI Editorial and Publishing Services, Addis Ababa, Ethiopia.

Citation: Dione, M., Guy, I., Raymonde, V.L., and Knight Jones, T. 2021.*Urban food markets in Africa – incentivizing food safety using a pull-push approach (Pull-Push project): Burkina Faso stakeholders' workshop report*. Workshop Report: Nairobi, Kenya: ILRI

Patron: Professor Peter C. Doherty AC, FAA, FRS
Animal scientist, Nobel Prize Laureate for Physiology or Medicine–1996

Box 30709, Nairobi 00100
Kenya
Phone +254 20 422 3000
Fax +254 20 422 3001
Email ilri-kenya@cgiar.org

ilri.org
better lives through livestock

ILRI is a CGIAR research centre

Box 5689, Addis Ababa, Ethiopia
Phone +251 11 617 2000
Fax +251 11 667 6923
Email ilri-ethiopia@cgiar.org

ILRI has offices in East Africa • South Asia • Southeast and East Asia • Southern Africa • West Africa

Background

Foodborne diseases (FBD) are public health threats, causing considerable morbidity and mortality and substantial socio-economic impact. To address a range of food safety challenges in Burkina Faso, the 'Urban food markets in Africa: Incentivizing food safety using a pull-push approach (Pull-Push) project' was developed. Led by the International Livestock Research Institute (ILRI), the project aims at providing evidence that will help government authorities to better understand and cost-effectively mitigate food safety risks across various poultry and vegetable value chains. Engagement with stakeholders and government food safety authorities is vital for the successful uptake of project outputs.

On 7 May 2019, an inception workshop was implemented involving various national stakeholders of the poultry and vegetable value chains. The inception workshop served to help identify most important challenges in food safety in Burkina Faso and suggested ways of overcoming these challenges. Information obtained from the workshop was used to better shape the project objectives and activity planning.

On Friday, 27 August 2021 a workshop was held at Hotel Palm, Ouagadougou, to update stakeholders on the project's activities in Burkina Faso.

The objective of the workshop were to:

- improve stakeholder's understanding of the project activities,
- improve the usefulness and uptake of project outputs for food safety, and
- improve collaboration on national food safety activities and update and discuss upcoming activities.

The workshop was attended by 30 actors of the poultry and vegetable value chains from various organizations in the country.

1. Opening remarks

The Minister of Health, Charlemagne Ouedraogo, opened the meeting. He indicated that the project is relevant to address prevailing food chains issues in Burkina Faso, and it is aligned with the vision of the Government of Burkina Faso to promote food safety in the country. He also informed the participants of the government's draft National Food Safety Emergency Response Plan (PNRUSSA) that will be validated soon. The minister concluded his remarks by providing advice on COVID-19 prevention that cuts across all sectors of social and economic life.

After the opening speech, a break was observed for an interview with media and a group photo with all participants.

Picture 1: Interview of the minister of health by the national radio and television (photo credit: ILRI/Guy Ilboudou).

2. Plenary session

Three presentations were made on (i) the objectives and approach of the Pull-Push project, (ii) the results of the poultry and tomato value chain assessments, and (iii) the preliminary results of the knowledge, attitudes and practices (KAP) survey of tomato and poultry value chain actors.

Presentation 1: Pull-Push project

Michel Dione, the Pull-Push project coordinator, made the presentation. After recalling the importance of the impact of foodborne diseases on populations around the world, most of which are associated with the consumption of foods of animal origin, he gave the objectives of the project.

He also explained the supply-demand model underlying the project approach. There are consumers who are increasingly demanding healthy food, which is the key innovation in the approach following awareness campaigns and, on the other hand, we have the supply chain made up of actors in the value chain who are ready to meet the demand for healthy food. This will only happen through capacity building and the incentives that benefited both sets of actors. The result of such an approach is value chain environment improvement through the reduction of foodborne illness, the professionalization of the informal sector and better governance. He said that the value chains selected for the Pull-Push project are poultry and tomatoes, but interventions trials will focus on street chicken restaurants in Burkina Faso. The project coordinator recalled and commented on the seven (7) work packages (WP) of the project presented below:

WP 1: Estimated burden and cost of foodborne illness

WP2: Understanding the value chains of meat (poultry) and vegetables (tomato)

WP 3: QMRA (quantitative microbiological risk assessment) and cost-effectiveness analysis of candidate interventions

WP 4: Strengthening the capacity and motivation of regulators to manage food safety

WP 5: Empowering value chain actors to manage food security

WP 6: Design and implement a consumer campaign

WP 7: Impact analysis.

Before closing his presentation, Dione outlined upcoming project activities. Thus, for the work package WP4 (Training of regulators on food safety), the International Livestock Research Institute (ILRI) is in collaboration with Ki-Zerbo University to develop a training module for high-level regulators. The government of Burkina Faso will subsequently be asked to nominate participants for the training.

As for the WP5 (Support to actors in value chains), basic training in food safety is planned, for the benefit of street vendors, and supply of equipment (disinfection, cleaning) and training of local regulators. Concerning the WP6

(Consumer awareness campaign), the planned activities include a consumer information campaign on the promotion of the purchase of clean and quality meat, and hygiene in households, places of sale and consumption, which will be implemented by the selected national communication bureau.

The implementation of the WP7 (Impact assessment) will require baseline data collection, which will start before end of 2021. The methodology will be a combination of mixed methods including interviews with focus groups and regulators, consumer surveys (quasi-experimental), and photo voices.

Presentation 2: Summary results of the poultry and tomato value chain survey assessment

The presentation was made by Valérie Lallogo from ILRI. It was built around five points, namely introduction, methodology, results, risk practices and recommendations.

After recalling the importance of the prevalence of foodborne illnesses and their persistence in developing countries due to the consumption of undercooked products (chicken and vegetables) and especially the relevance of the Pull-Push project in responding to this problem, Lallogo presented the methodology of the study. The assessment was carried out in the Greater Ouagadougou area from December 2019 to January 2020.

She noted that this is a qualitative study based on direct observation, interviews with key informants, household surveys and focus group discussion with actors in the chicken and vegetable value chains. The outputs of the study will serve as an input to develop chicken and vegetable value chain maps that will be used by other project WPs as a framework for risk assessment.

The study also documented risky practices of actors that need attention by the researchers. For example, these practices in the poultry value chain include:

- lack of quality control over inputs and products sold,
- non-compliance with withdrawal period for drugs in farms,
- administration of inappropriate drugs for the immediate sale of birds (for example, Tramadol - Unopoid).
- unsanitary conditions in slaughter areas (slaughter, plucking and evisceration) – no separation between clean and dirty areas,
- inappropriate management of waste at slaughter points (e.g. poor water drainage, no dedicated places for slaughter),
- improper handling of carcasses before cooking: improper water use; handling chicken after cooking without proper utensils; use of the same utensils for vegetable cutting,
- slaughter of poor-quality, weakened or diseased birds,
- sale and processing of carcasses of weakened, diseased or dead birds,
- poor storage practices.

While for the vegetable value chain, the risky practices include:

- use of wastewater (e.g. around hospitals and plants) .
- failure to observe the withdrawal period of pesticides before harvest,
- uncontrolled and abuse of chemicals (pesticides) in gardens,

- excessive use of chemical fertilizers compared to organic fertilizers,
- the construction of latrines close to the gardens (about 50 meters),
- the use of dirty water to clean vegetables at the market,
- sale of damaged tomatoes, improper hand washing during handling,
- lack of knowledge or negligence has been noted since there are perceptions that 'sometimes vegetables are not as rotten as we think; it is just the heat in the bag in which they are kept that change their colour and texture'.

The value chain assessment also explored consumption patterns among the low-, medium- and high-income household. Indeed, access to quality food is also linked to people's socio-economic status, with medium to high income households likely to eat raw vegetables and to have a high purchase capacity to access for example non-damaged tomatoes. Among recommendations by value chain actors to improve food safety is education and training of consumers on the risk that represent consumption of unsafe food; and training of poultry vendors and processors on good handling practices. Capacity building of regulators was also seen as an important activity.

Presentation 3: Preliminary results of the knowledge, attitudes and practices (KAP) survey of tomato and poultry value chain actors

The presentation was made by Guy Ilboudo of ILRI. The study was conducted in the Greater Ouagadougou between February and June 2021 among 100 vegetable markets sellers, 50 vegetable street sellers, and 100 poultry street vendors.

Preliminary analysis show that for the **tomato value chain KAP,** 98.7% of sellers are women selling 10–31 kg/day for street vendors versus 18–66 kg/day for vendors in markets. Four types of tomatoes sold were listed; they range from intact tomatoes to slightly damaged tomatoes (low to moderate damage), severely damaged tomatoes (substantial damage) to rotten tomatoes. On average, 20% of tomatoes are damaged by vendors, 16% of which are lost for various reasons.

The main causes of tomato damage according to the sellers are pesticides, fertilizers, high temperature, long storage time and transport conditions. In terms of handling, it was noted that tomatoes were frequently exposed to direct sunlight in most street vending areas. Most sellers (97%) do sort tomatoes when selling and a higher proportion of respondents also reported sorting during transport and storage. About one half of the respondents reported that tomatoes were exposed to flies and 34% reported that tomatoes were exposed to rodents during storage. Over 93% for sellers said cleanliness and hygiene were important to guide their choice of safe tomatoes. However, their main concern is contamination with chemicals and dirt rather than germs. While sorting was recognized as important to reduce damage and waste by most vendors, most of them (90%) do not recognize washing as a measure to reduce tomato waste.

For the **poultry value chain KAP**, preliminary results show that 93% of actors are men, almost half of outlets are not inspected, and most actors (89%) have not received any training. Regarding processing, it has been observed that in 85% of the cases, the chicken is slaughtered for immediate consumption and the slaughter is done on the ground. Considering KAP of food safety, it was noted that customers are more concerned about the appearance and the flavour of what they eat, and hygiene is poorly cited as a cause of complaints from customers. Customers and sellers are concerned about hygiene and germs rather than chemicals. Few people have heard of foodborne diseases, although they are aware of the importance of water quality and cooking temperature in food safety.

In conclusion, it mostly appeared that certain practices may endanger the health of poultry and tomato consumers through poor general hygiene and buying and processing, etc. Appearance and taste are more important in customer choice and knowledge of vendors in food safety is limited. People are more worried about chemicals than germs for tomatoes but vice versa for poultry.

After the presentations, participants made comments and asked questions. Suitable answers were given to the most important issues. Thus, presenters indicated that the main reason why the project is focusing on poultry street vendors for the interventions is its relative importance in the poultry consumption (90% of poultry are consumed in street restaurants). The other concern was the reason why concern was only for tomatoes and not onions? This issue was debated, and tomato was chosen because the texture of this vegetable is more prone to contamination than onion. The participants were eager to know the practices at pre-market level especially at farm level, and thinking to address such practices will minimize the risk at post-farm node. They also pointed out lack of research on antibiotics use in livestock and pesticides at farm level.

3. Group discussions

Potential interventions targeting chicken street vendors/restaurants were presented during group discussions as described below.

Intervention 1: Repeated training on slaughter and processing of chickens and general hygiene + certification (with equipment given) + registration on a website – so consumers can see and compare outlets.

Intervention 2: Repeated training on slaughter and processing of chickens and general hygiene and provision of chemical sanitiser (like chlorine/hypochlorite/ permanganate) to put in water to wash vegetables and chicken carcasses to kill germs and/or provision of organic sanitizer (like salt water, vinegar, lactic acid, lemon juice) to wash vegetables and chicken carcasses.

Intervention 3: Repeated training on slaughter and processing of chickens and general hygiene and provision of water purifier with chemical (like chlorine or iodine-based compound) for safe water, not a chemical sanitiser to kill germs on food, and provision of water filter to clean the water instead, even if it is less effective at removing germs

Participants worked in three groups; discussing one of the three interventions. Each group evaluated the suggested issues in terms of (i) their feasibility (technical and economic), (ii) their acceptability given the socio-cultural context and their potential negative impact, and (iii) their sustainability (adoption-continuation after the project). After one hour of group work, the three groups came back to another plenary session to share their respective findings.

Group 1 (Intervention on training and certification) found the intervention technically and economically feasible. It is aligned with the regular role of the government through the department in charge of enforcing policies on hygiene at food markets and restaurants under the local government through the commune.

The interventions should be embedded in existing framework and build on what is already going on. Therefore, actors will have no choice, but to comply with regulations because they will be pushed to them by relevant authorities. Online registration of certified restaurants will be technically and economically feasible in principle but needs to be aligned with the current context and support obtained by the relevant regulators. This will be an exciting model for the consumers who will make informed choices.

Capacity development training is important for the street vendors most of whom complained of lack of knowledge of best practices. However, some constraints may appear, such as lack of human capacity of regulators (there is not enough staff hired by the government; and those hired lack logistic capacity such as transport options); additional costs and training time which could be deemed to be a loss of time and lead to a loss of motivation.

Regarding the acceptability of this intervention, Group I members noted the absence of barriers of any kind (economic or social) but they found that restaurants and consumers capacity building demand is high, and restaurant owners will be happy to be trained and certified. Similarly, consumers will be also happy to finally have safe places to shop for good-quality chicken.

- However, the sustainability of this intervention was questioned for the following reasons:
- It is not obvious that actors can bear the additional economic costs after the project.
- Sale outlets may be unstable (not permanently settled in a location) due to strong staff turnover or loss of clients.
- In the long-term, profit maximization could be promoted at the expense of food safety.
- Non-compliance with restaurant commitments could affect poultry quality and affect sustainability.

However, they noted that sustainability of this intervention could be reinforced through a good communication campaign towards consumers on certified restaurants, a specification bill made available to vendors and monitored by the government technical services and working with the Ministry of Health, the local government and the consumer league as key implementing partners.

Picture 2: Figure 2: Group 1 debate (photo credit: ILRI/Michel Dione).

Group 2 (Training and use of disinfectant) members addressed both the vegetables and poultry value chain.

For vegetables, they found this intervention technically and economically feasible. Chemical disinfectants are more reliable than organic ones. Organic disinfectants, despite being less reliable are harder to promote through advertisement campaigns. Disinfectant quality control is needed. As for the acceptability of this potential intervention, the group members found no social or cultural barrier/impact to disinfectants on vegetables, although awareness campaigns are needed. The durability of this intervention is subject to consumer's level of demand; upstream certification and actors' awareness.

For poultry, there is limited relevance for organic disinfectants (chlorine, permanganate, etc.). Although technically feasible, organic disinfectants, their economic feasibility is limited for some products (lactic acid and citric). Some other local products such as salted water, vinegar, lemon juice could be used. The use of local organic disinfectant is already happening and have been reported by stakeholders. Regarding the acceptability of disinfectants use on poultry, the group members claimed that there exist some barriers due to cultural mindsets and considerations which end up with some reluctance from the consumers' side. This is illustrated by the quotes below by a participant to the workshop:

'To disinfect (even wash) the meat is to remove from it the essential (nutrients linked to sweetness),'

'Mentalities take time to change, we must start with what is acceptable by strengthening current good practices (organic disinfectants), and gradually shifting to more less accepted good practices (e.g. use of chemicals)'

Disinfectants may negatively affect the poultry quality. The durability of this intervention was questioned given its low potential of acceptability. Participants of Group 2 formulated some final notes which can help the implementation of this intervention, namely:

- Technical training of meat processors on the formulation of disinfectant liquids, particularly dosage to avoid risk of under or overdosing.
- Provide the actors the scientific proof of the relevance of carcass disinfection before promoting.
- Ensure that the upstream disinfection conditions are adequate and put emphasis on the hygiene and handling after sale, during processing
- Vinegar and lemon are highly accepted for use both as a disinfectant and to tenderize carcasses. However, lemon is very expensive.

Group 3 discussed training and water processing. Participants indicated that the intervention is feasible where there is a source of drinkable water. If training in water recycling is found to be of a limited feasibility, the use of filter is technically and economically feasible.

As for the acceptability of this potential intervention, the group members found that there are no barriers and pill disinfectants, and water filters are also of good acceptability. Use of pills in water may also be sustainable, if consumers are aware that there is no side effects or long-term health impacts of adopting the practice. The sustainability of the use of filters depends on their type (industrial or not) since there will be a cost implication.

The final remarks of the group members are summarized as follows:

- there may a potential effect of disinfectants on food taste that could affect both consumers and vendors acceptability,
- training should focus more on proper water use than disinfection of water; it is therefore suggested to include it in the certification training,
- it should be considered to standardize quality of water used in chicken preparation.

Annexes

Annex 1: Notes during group work

Group 1: Training and certification (with equipment given)

Feasibility (technical economic)	Acceptability (given socio-cultural context, potential negative impact)	Sustainability (e.g. adoption-continuation after the project)
Technically and economically feasible: This is the sovereign role of the state (hygiene service). This is already done with the Hygiene control service Actors will have no choice but to comply with Putting certified restaurants online is technically and economically feasible After training, restaurants will themselves be able to recognize poultry that are unfit for consumption, given their appearance **However:** • Personnel issue may raise • Additional costs may incur for restaurants • Permanent staff and sites instability could be observed • The time of training could be seen as a waste of time for restaurant managers and therefore cause demotivation Certification should be based on: Staff health Technical compliance of facilities General hygiene for buildings Health quality of marketed products	No significant negative impact for this intervention No social, cultural or other barriers **On the contrary:** Demand is strong in terms of building restaurants and consumers' capacities Restaurants will be happy to be trained and certified Customers will be happy to finally have safe places to shop for chicken The association of large restaurant customers could facilitate further communication for the benefit of restaurants.	**Sustainability is quite difficult:** It is not economically obvious that actors can bear the additional economic costs after the project Strong instability of sales points in terms of personnel and installation site In the long term, maximizing profit could be promoted at the expense of food safety Non-compliance with restaurant commitments could affect poultry quality and raise a sustainability issue **The intervention can be sustainable if:** A good communication campaign is done on certified restaurants towards consumers Bill specifications are made available to managers and monitored by the technical services Training of trainers (hygiene officers) is organized to ensure the sustainability of the training at least once every 6 months

Group 2 : Training and use of disinfectants in food

Feasibility (technical economic)	Acceptability (given socio-cultural context, potential negative impact)	Durability (e.g. adoption-continuation after the project)
1. On vegetables Technically and economically feasible Chemical disinfectants are more reliable Organic disinfectants are less reliable and difficult to promote in advertising campaigns Notes: Quality control of disinfectants is needed **2. Chickens** Limited relevance for organic disinfectants (chlorine, permanganate, etc.) Organic disinfectants are technically feasible but economically the feasibility is limited for some products (lactic acid and citric) Salted water, vinegar; lemon juice	Lack of socio-cultural barriers, no impact, so acceptability Awareness is needed Hardly acceptable Mentalities and cultural considerations are barriers due to possible degradation of chicken, and value decrease; therefore some reluctance may be noted	The intervention sustainability is subject to consumers' demand Upstream certification and awareness are helpful factors Sustainability questioned due to difficult acceptability

Group 3: Training and water processing

Feasibility (technical economic)	Acceptability (given socio-cultural context, potential negative impact)	Durability (e.g. adoption-continuation after the project)
If no existing drinking water source High feasibility of tablet disinfectant training: Training in non-potable water recycling has a limited technical and economic feasibility Filter use will be economically and technically feasible	Tablet disinfectant has good acceptability Filter has good acceptability	Disinfectant tablet: the sustainability depends on the potential positive impact on customers Filter: its sustainability depends on the type of filter: less acceptable if industrial filter

Annex 2: Workshop agenda

Time	Activity	Responsible
8:30-9:00	Arrival/ participants registration	ILRI-Yawa Fahouzia
9:00-9:30	Opening remarks by a high level representative of the Ministry of Health	CAPES-Daniel Kaboré
	Interview with media and family photo	
9:30- 11:00	Pull-Push project presentation	ILRI-Michel Dione
	Presentation of the poultry and tomato value chain survey results	ILRI-Valérie Raymonde Lallogo
	Presentation of the KAP (knowledge, attitudes and practices) survey of tomato and poultry sellers	ILRI-Guy Ilboudo
	Discussion	CAPES-Daniel Kaboré
11:00-11:30	Coffee break	
11:30-12:00	Presentation of potential interventions	ILRI-Michel Dione
12:00-13:00	Group discussion on potential interventions	All participants
13:00-13:30	Plenary session for group results presentation	CAPES-Daniel Kaboré
13:30-14:00	Perspectives and next steps presentation-closing remarks	ILRI-Michel Dione