



# Making food safety interventions benefit the most vulnerable urban consumers in Vietnam and Cambodia

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## Key messages

- Benefits of market-based food safety interventions should be harnessed to improve access to safer food among urban low-income households in Vietnam and Cambodia.
- Most urban households live in close proximity to traditional food markets, but they have difficulties in acquiring affordable, safe fresh produce.
- Consumers are concerned about chemical contamination in food but often prioritize other aspects of food choice such as taste and convenience.
- There are various typologies of traditional food markets.
- Future interventions should explore business models to expand retailers' customer base to help them gain profit without increasing prices while shifting consumer food safety concern from chemical contamination to microbial contamination.

## Introduction

Access to safe food is an important aspect of food and nutrition security, as agreed upon by global policymakers (1). As the availability and consumption of fresh food is rising rapidly in urban areas globally, safeguarding urban population from foodborne illnesses has become an urgent agenda (2). In responding to this agenda, the International Livestock Research Institute (ILRI) has developed and tested market-based food safety interventions in the pork supply chain in urban areas in Cambodia and Vietnam through recent programs such as 'Reducing disease risk and improving food safety in smallholder pig value chains in Vietnam' (3), 'Market-based approaches to improving the safety of pork in Vietnam' (4), and 'Safe Food Fair Food for Cambodia' (5). These programs have trained retailers and slaughterhouse workers on food hygiene while and procured equipment such as grids, tables and cutting boards for use by meat vendors. These light-touch

interventions have been showed to improve food hygiene awareness among these value chain actors and improve the food safety profile of pork sold in traditional food markets.

Yet there remain challenges in translating the benefits of these market-based interventions into improved health and nutrition of the most vulnerable urban dwellers such as children and women of reproductive ages from low-income households. This is because, first, low-income households may acquire fresh food from both traditional, informal food markets and other sources such as backyard gardens and mobile vendors (6), such that better food safety in informal food markets alone may not guarantee safer food for these households. Second, investments in hygiene equipment and behaviors may increase the operation costs for food sellers and eventually increase food price for consumers, which impede economic access to safe food for the low-income consumer. Third, low-income households may prioritize other aspects of food choice such as taste, convenience, and relationships with vendors such that consumers do not switch to vendors with better food hygiene profiles and, as a result, vendors have little incentive to adopt these food hygiene practices.

In this brief, we characterize food access, food safety perception, and food acquisition behaviors among low-income urban households in Vietnam and Cambodia and propose how to harness the benefits of market-based food safety interventions to improve household access to safe food.

## Methodology

The content of this research brief is from mixed-method analyses, which were part of the Safe Food Fair Food Cambodia project and the CGIAR Program on Agriculture for Nutrition and Health (A4NH) in Vietnam. These include a spatial description of the distribution of fresh meat markets in Cambodia (7), a cross-sectional food access survey with 200 mothers from urban households in Cambodia who lived within 1km perimeter of the informal food markets (100 in Phnom Penh and 100 in Siem Reap) (8), a cross-sectional food safety perception survey with 158 adults in Vietnam and 150 adults in Cambodia across the rural-urban districts, and lastly, 16 in-depth interviews and a focus group discussions with mothers of preschool children in the urban districts in Vietnam (9).

## Result

### Urban food access in Cambodia

*Physical access to food markets* - The distribution of fresh food markets is uneven across geographical areas in Cambodia with high density of large markets in populated areas and fewer markets in areas with low population density (Figure 1). Approximately 75% of the urban households live within 2 km of fresh food markets and less than 5% live more than 5 km away (Figure 2) (7).

*Sources of food acquisition* – The food access survey in urban households who lived within 1 km of the informal food markets revealed that, despite the close distance to food markets, many households acquired fresh food from more than one source. In Siem Reap, for example, about 30% of households acquire meat such as pork, chicken, and seafood from more than one source. Approximately 75% acquired meat such as pork, chicken and seafood from wet markets, 34% from street vendors, and 22% from backyard gardens or wild rivers. In Phnom Penh, about 23% acquire meat from more than one source, with 90% relying on informal food markets, 27% on street vendors, and 7% on backyard gardens or rivers (8).

Figure 1: Food markets distribution in Cambodia with regional boundaries (7).

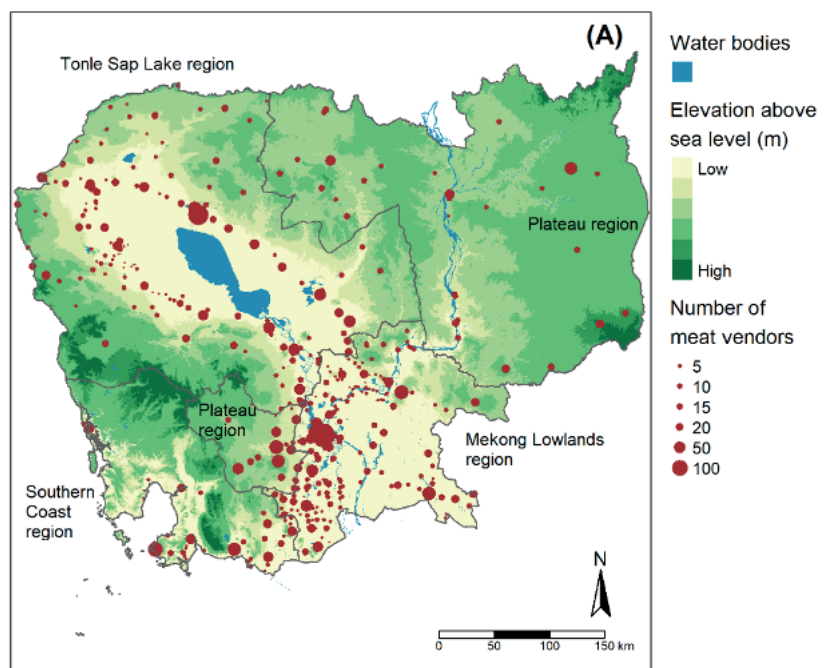
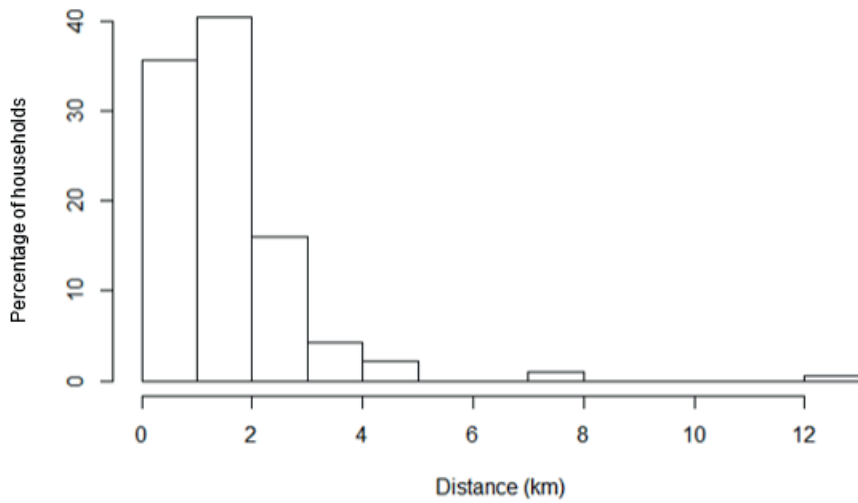


Figure 2: Histogram of distance from urban households with children to the closest food markets from urban households in Cambodia (n = 188) (7).

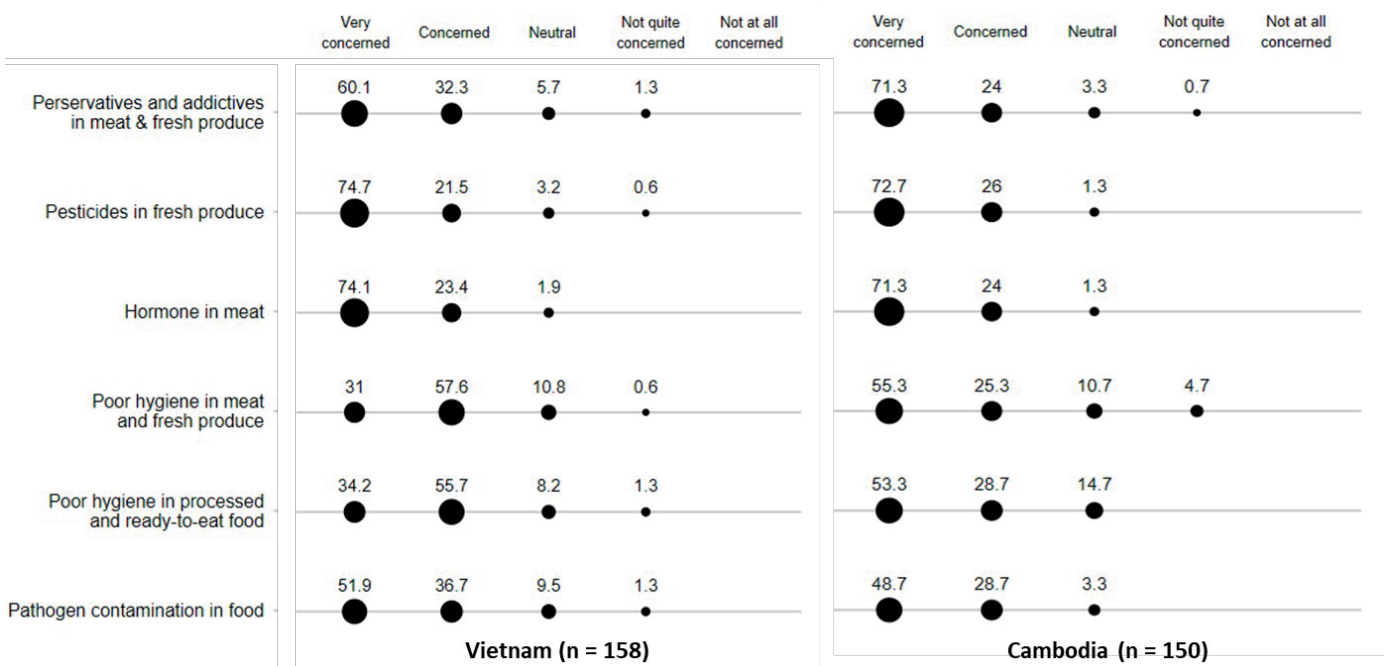


### Food safety perception

The food safety perception survey showed that respondents expressed strong food safety concerns, and chemical contamination in food was ranked higher than concern for microbial contamination. In both Vietnam and Cambodia, between 60% and 70% respondents were very concerned about preservatives, pesticides, and hormone content in meat. In contrast, just about 50% of respondents in Cambodia and 40% of respondents in Vietnam were very concerned about pathogen contamination and poor hygiene practices (Figure 3).

Food safety concern nevertheless does not always affect food choice, and such practice depends on the location and the types of fresh produce. In Vietnam, about 75% of the respondents very often or sometimes limited their purchase of meat or vegetables due to food safety concerns but 90% of them reported similar practice when it comes to fruits. In Cambodia, just about 15% of the respondents limited their purchase of meat, fruits, or vegetables due to food safety concerns.

Figure 3: Percentage of participants by the level of food safety concern (the size of the dot and the number indicates the percentage).





## Food choice behaviors

In-depth interviews and focus groups discussions with peri-urban mothers of young children in Vietnam reiterated and explained the results described above (9). Most mothers were greatly concerned about the use of pesticides, growth hormones, and preservatives in meat, fruits, and vegetables, but few discussed food hygiene or microbial contamination in food. Symptoms of foodborne illnesses such as vomiting and diarrhea were often attributed to chemical content in food. As a result, mothers often emphasized the importance of 'food origin' and 'fresh food', the latter referring to food freshly caught, harvested, and sold directly by farmers. They thus expressed the preference to acquire food from 'toad markets', which is a form of spontaneous wet market formed along the street or alleys without any facilities such as tables or water pipes, as mothers believed that foods sold here were fresh from the farms.

Despite these concerns, mothers displayed the tendency to cut down on fruit consumption, but rarely meat and vegetables consumption, as one mother said 'It is impossible to avoid antibiotics or chemicals in the meat, or else we cannot eat anything' (mother of a three-year-old). Such behaviour may be rooted in the food traditions that emphasizes meat and vegetables but not fruits, as one mother indicated, 'Fruits are only a side dish, just for dessert, but we cannot live without the main dishes of rice, meat, vegetables' (mother of a four-year-old).

Other aspects of food choice were also emphasized over food safety such as affordability, convenience, and taste. Several mothers indicated that they wished to get safe food for their children but were deterred by the high cost of food sold in the 'clean food store' or the long distance from their houses to the stores. Nevertheless, for families who can afford more premium food, taste may matter more. For instance, one mother indicated, 'Yes, I also usually buy kinds of fruits that are not common and brought over from other places, I am not sure if they are clean but I buy to try the taste' (mother of a two-year-old).

## Recommendations

Our research findings recommend that future market-based food safety interventions adopt the following approaches to translate their benefits to improved nutrition in low-income mothers and children:

First, since affordability is the primary driver of food choice among low-income urban households, the price of food sold using better hygiene practices should not be too high. Thus, business models should be tested to improve the customer base for retailers and processors

who are willing to invest in hygiene practices and facilities such that they achieve the economies of scale to gain better profit without the need to increase price. Prior work has started to develop such models and similar efforts should be continued (10).

Second, since food safety concern does not necessarily translate to consumers' choice of safer food and other aspects of food choice such as taste and convenience also matter to consumers, demand-side interventions are needed to create consumers' awareness and desire for food prepared with better hygiene and low microbial contamination. In particular, consumers should be educated to differentiate the causes and symptoms of foodborne illnesses versus those of chemical food contamination. Community perception of 'clean food' and 'fresh food' should be redefined and shifted from being primarily about food origin and chemical contamination towards food hygiene and microbial contamination.

Lastly, many households also displayed preferences for small, spontaneously formed markets (i.e., toad markets) as they believed that food sold in these markets was more affordable, fresh from the farms, and contains minimal chemical content. Thus, for scaling-up, there is a need to tailor the existing food safety interventions to various typologies of traditional food markets (semi-formal, informal, mobile markets) to ensure that safer fresh foods reach most people in low-and-middle-income countries.

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## Photo credit

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