

Safe Food, Fair Food for Cambodia Project

H Nguyen-Viet¹, R Chea², F Unger¹, J Lindahl¹, K Roesel¹, T Sothya², C Ty³, M Young⁴, M Brown⁴, S Alonso¹, D Grace¹

¹International Livestock Research Institute, Vietnam and Kenya; ²National Animal Health and Production Research Institute, Cambodia;

³Livestock Development for Community Livelihood organization (LDC), Cambodia, ⁴Emory University, USA

Introduction

The Safe Food, Fair Food (SFFF) for Cambodia is a 3.5 year sub-award under the Feed the Future Innovation Lab for Livestock Systems and funded by the United States Agency for International Development (USAID). The project proposes two major research areas to tackle the above-mentioned issues: i) to generate evidence on the health and economic burden of foodborne diseases (FBD) in animal-source food value chains important to the poor and women, and ii) to pilot a market-based approach to improving food safety. Our central idea is market-based, light-touch interventions that are sustainable and scalable, changing practice through capacity building and incentives, and provision of an enabling policy environment.

Project objectives

1. Actionable evidence on FBD burden associated with animal source foods
2. Pilot incentive-based approach to improving food safety among ASF traders
3. Cambodian-led Theory of Change for improving food safety
4. Gender and equity research
5. Building capacity in food safety risk assessment, management, communication

Progress update (as of October 2019)

Stakeholder consultation workshop: Taskforce – December 2017

Training on “Food safety risk assessment for informal value chains”: Organized by NAHPRI in partnership with ILRI and WHO, 15-17th Jan 2018, 30 participants (70% male, 30% female).

Gender and livestock training: Organized by CelAgri in partnership with NAHPRI and ILRI, date 22-23 Jan 2018

A household survey in Phnom Penh: in district 7 districts, with 200 households on pork consumption practices and healthcare-seeking behaviour.

Student training and involvement: 2 PhD, 2 DVM, 5 undergraduates



Training on “Food safety risk assessment for informal value chains”



Validation protocol and training for cross contamination experiment for *Salmonella* to NAHPRI staff and volunteer students.

Multi-pathogen survey in Cambodian traditional market: The 496 specimens were collected aseptically according to the number presented in table 1, including chicken meat (n=186), chicken cutting board (n=62), pork (n=186) and pork cutting board (n=62) from retail meat shop in traditional markets in 25 provinces of Cambodia. All specimens submitted for bacteria isolation, including *Salmonella* & *Staphylococcus aureus*. Most probable number of *Salmonella* was performed in 1/3 of total meat specimens.

Prevalence of *Salmonella* and *S. aureus* in chicken pork, chicken and cutting board swab, in 25 provinces/municipal of Cambodia.

| Sample type | N. Specimen | N. positive both <i>Salmonella</i> and <i>S. aureus</i> | <i>Salmonella</i> positive | <i>S. aureus</i> positive |
|----------------------|-------------|---|----------------------------|---------------------------|
| Chicken | 186 | 38 (20.4%) | 84 (45.2%) | 78 (41.9%) |
| Cuttingboard chicken | 62 | 6 (9.7%) | 26 (41.9%) | 12 (19.4%) |
| Cuttingboard pork | 62 | 1 (1.6%) | 19 (30.6%) | 7 (11.3%) |
| Pork | 186 | 33 (17.7%) | 85 (45.7%) | 58 (31.2%) |
| Grand Total | 496 | 78 (15.7%) | 214 (43.1%) | 155 (31.3%) |

The MPN profiles of *Salmonella* from the 124 tested sample

| Sample types | <0.3 | 0.3–3.0 | 3.1–30.0 | 30.1–110 | >110 |
|----------------|------|---------|----------|----------|------|
| Chicken (n=62) | 19 | 21 | 17 | 2 | 3 |
| Pork (n=62) | 20 | 22 | 15 | 1 | 4 |

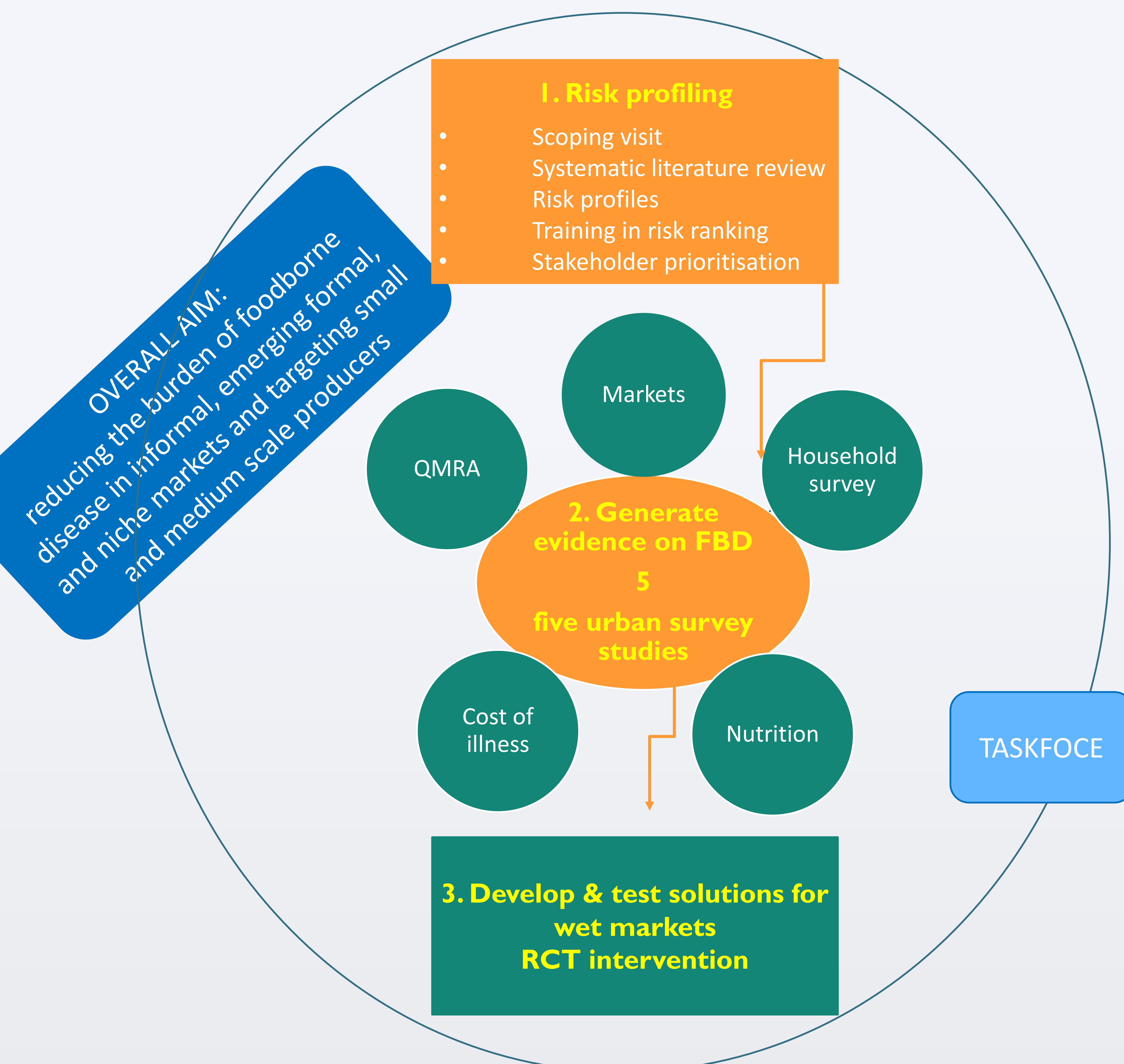
Cost of Illness in Phnom Penh and Siem Reap: 266 cases of FBD on direct and indirect cost were collected from national, provincial hospitals and in health centers in both provinces. The cost of one foodborne disease was 63 USD.

Nutrition survey in Phnom Penh and Siem Reap : Focus on qualitative nutrition study and quantitative nutrition study.

- Chemicals contamination is of a larger concern than foodborne pathogen contaminations
- Women resort to growing or catching their own food
- More unfavorable perception of food environment and food safety in Siem Riep
- **Fruits and vegetables:** unfavorable perception is linked to less frequent intake in both mothers and children.
- **Meat:** unfavorable perception, city of residence, wealth and food insecurity are linked to less frequent intake in both mothers and children.



One of the common daily meal for family in urban area.



Research method and approach

The overall research method is ‘participatory risk analysis’ to working in informal markets that combines risk analysis and participatory learning and analysis. A unique aspect of this project is to develop a systematic and structured approach, starting with risk profiling and moving to risk assessment and risk management, while investing in risk communication and capacity building.

The project will adopt a gender-sensitive approach in the design and implementation of planned activities to ensure that project outcomes and impacts will be gender inclusive.

Next steps

Taskforce: food safety risk assessment group working for [policy makers]

QMRA, risk communication

Interventions 2020



Activities during chicken and pork sampling, seller participated in interview and sampling meat and cutting board.



Picture shows the most common way that chicken seller exhibit raw chicken product for selling in Cambodian traditional market.

Acknowledgement

This projects is made possible by the generous support of the American people through the United States Agency for International Development (USAID) and its Feed the Future Innovation Lab for Livestock Systems managed by the University of Florida and the International Livestock Research Institute. The contents are the responsibility of the presenter and do not necessarily reflect the views of USAID or the United States Government.

Contact: Hung Nguyen-Viet, h.nguyen@cgiar.org, ILRI, Vietnam