

# Improving food safety along the pork value chain in Vietnam - PigRISK

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## INTRODUCTION/BACKGROUND

Food safety is a key concern of people in Vietnam. Pork is the most popular meat and essential both for consumer nutrition and farmer livelihoods. But is it safe? Pork is mainly produced by smallholders and sold fresh in traditional (wet) markets. And, as demand for pork grows, supporting the smallholder value chain can provide pathways out of poverty for farmers and others.

The PigRISK project was co-implemented by the Hanoi University of Public Health (HUPH), the Vietnam National University of Agriculture (VNUA) and the International Livestock Research Institute (ILRI).

The project was implemented from June 2012 to September 2017 in Hung Yen and Nghe An provinces. The project sought to improve the livelihoods of smallholder pig farmers in Vietnam by helping continuing market access through addressing food safety in the pork value chain. It built on strong national and international partnerships to address questions of consequence: Is pork in Vietnam safe? Are the risks serious? How best can these risks be managed? PigRISK also aimed to address the limited use of risk based approaches in Vietnam through capacity building on risk assessment and communication.

## RESEARCH APPROACH

Reflecting the multi-disciplinary approach, the project brought together expertise in smallholder pig systems, animal health, risk analysis, socio-economics, veterinary epidemiology, and public health.

Specific elements of the research approach included:

- Risk profiling, qualitative and quantitative risk assessment for microbiological (e.g. Salmonella) and chemical hazards (growth promoters, antibiotics, heavy metals).
- Health assessments, cost of hospitalisation and treatment due to food-borne diseases in humans.
- Economic and value chain assessments (e.g. pig producers).
- Evaluation of adoption of good agricultural practices (GAP).
- Stakeholder engagement including policy level and ownership were enabled through an explicit and structured communication strategy developed at the start of the project.

## KEY RESEARCH FINDINGS

- Salmonella—a bacterial pathogen which pigs host—is one of the most common causes of food-borne illness. We found Salmonella in 44% of pork sold at the markets in the study.
- For the first time, a quantitative microbial risk assessment (QMRA) model estimated the health impacts of food-borne disease in Vietnam. It indicated that 17% of pork consumers are at risk of Salmonella poisoning every year.
- Prevalence surveys found smallholder pork is as safe as that from the formal sector.
- Risk due to chemical hazards is low (heavy metals, growth promoters and antimicrobial residues) – overwhelming majority of meat samples negative tested.
- Other research found that much of the human health risk comes not from eating pork (which is often well-cooked and relatively safe), but from cross-contamination at household level.
- The annual costs of hospitalization in Vietnam due to food-borne diarrhoea amounted to USD2.5–7.6 million annually.
- Associated studies on the gendered adoption of good agricultural practices (GAP) demonstrated the long-term impact of participatory extension initiatives, and identified ways of increasing adoption and effectiveness of national GAP initiatives. Farmers found some GAP guidelines unreasonable to achieve or do not follow as concrete benefits are not clear.



## KEY ACHIEVEMENTS

- Evidence developed on the burden of pork-borne disease in Vietnam.
  - Various papers on the subject matters have been published in international (6) and national (16) journals.
  - Additional outputs include synthesis or discussion papers, fact sheets and research briefs. PigRISK findings and outputs have been presented at more than 60 international and national conferences and symposia.
  - Feedback workshops in the study areas included advocacy for better management of food safety and more effective communication to raise public awareness.
  - Project researchers contributed to capacity development related to food safety for partners and networks (national and regional). Two PhD students successfully defended their thesis. Sixteen more MSc students and 84 undergraduate students were trained.
- POLICY OUTCOMES**
- Scientists contributed substantially to the report: 'Vietnam food safety risk management: challenges and opportunities' led by the World Bank at the request of the government of Vietnam, launched in 2017.
  - Project researchers participated in the National Taskforce on Food Safety Risk Assessment and the Vietnam Food Safety Working Group. Support included policy analyses, training on food safety risk analysis and the development of risk assessment guidelines.

## POLICY RECOMMENDATIONS

- Biological contamination is the main cause of health risks, while chemical-associated hazards are less important. Enhancing risk communications is critical to improving the ways that related agencies inform the public of health risks.
- Strengthening hygiene practices along the pig value chain through the provision of training and clear guidelines plays an equally important role to infrastructure investment. Attention should be given to behavioral change to improve hygienic practices and provision of suitable incentives.
- Interventions also need to target consumers to manage the risk of cross-contamination at household level when handling pork.
- High disease burden (17%) due to the consumption of salmonella contaminated pork requires better reporting mechanisms and surveillance systems for food-borne diseases at all levels.

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