

Safer indigenous pork and healthier ethnic minorities in Vietnam through better management of parasitic pig-borne diseases



Background

Pig production plays an important role in generating livelihoods for ethnic people in Vietnam. Both indigenous breeds and wild pigs are traditionally kept under extensive management systems. Indigenous pig production enables ethnic minorities to produce and consume more animal-source foods which improves nutrition status. However, food safety risks pose potential human health problems that need to be addressed.

Pig parasites are a major challenge to human health and animal productivity. The Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO) consider cysticercosis (*T. solium*) the most important foodborne parasite and trichinellosis (*T. spiralis*) the 7th ranking. While information is scarce, the parasites are likely endemic in parts of Vietnam, especially in the northern mountainous areas. Both are underrecognized causes of disease characterized by a range of clinical signs in humans including epilepsy for cysticercosis, and muscle pain with fever for trichinellosis. This can result in society condemning pork as the source of the problem and rejecting it from the food chain, leading to considerable economic and nutrition impacts.

Goal and objectives

The project's goal is to assess and reduce both parasitic pig-borne diseases (PPBDs)—cysticercosis and trichinellosis—in ethnic minorities of selected areas in Vietnam.

Specific objectives include:

- Assessing the presence of both PPBDs in indigenous pigs and humans living in those communities based on serological testing.
- Understanding the perception and awareness of indigenous pig farmers and pork consumers on PPBDs.
- Addressing capacity gaps (e.g. meat inspection) and diagnostic test using improved diagnostic tools.

- Developing and testing promising interventions to reduce PPBDs and promote a brand for safer indigenous pork.
- Developing capacity and engaging with policymakers to support application of interventions.

Study site

Hoa Binh, a mountainous province on the northwest entrance of Vietnam, was identified as the study site. The ethnic minorities account for approximately 74% of the province's population. Hoa Binh has high proportion of indigenous pigs among provinces north of Vietnam.



Hoa Binh is also the study site of the “market-based approaches to improving the safety of pork in Vietnam”—SafePORK project (2017–22)—funded by the Australian Centre for International Agricultural Research (ACIAR) and aims at food safety interventions.

This project will complement other food safety projects while SafePORK focuses on market-based interventions for safer pork by reducing microbiological contamination.

Key partnership

The project is funded by the German Federal Ministry of Economic Cooperation and Development (BMZ) and implemented by the International Livestock Research Institute (ILRI) from 1 January 2018–31 December 2020.

It is built on the existing One Health partnership between ILRI and two key Vietnamese research partners—the National Institute of Veterinary Research (NIVR) and the Hanoi University of Public Health (HUPH).

The Free University of Berlin (FUB) and the Federal Institute for Risk Assessment (BfR), leading German institutions in the field of food safety, will be responsible for capacity development on meat hygiene/inspection (FUB) and advanced diagnostic tests (BfR) for the targeted PPBDs.

Project achievements

- Results from serological surveys indicate that both PPBDs appear sporadically in pigs but only rarely in humans in the study area. While the risk for humans is very low, risky pork consumption habits and knowledge gaps on PPBDs preventions still exist.
- A multisectoral awareness campaign on prevention of PPBDs was implemented and reached at least 25% of Da Bac population across all 21 communes. The majority of them were women.
- The campaign was led by trained trainers (community health staffs and veterinarians) to ensure sustainability.
- An impact assessment showed a knowledge increase of ethnic people on PPBDs and related risk factors.
- 18 Vietnamese researchers and technicians were trained on diagnostic techniques for trichinellosis in pork with the support of BfR. Some of them are trained trainers.
- Hands-on training on meat inspection was organized together with the Department of Livestock Production and Animal Health of Hoa Binh Province with the support of FUB. Through this effort, more than 50 butchers and veterinary staff from Hoa Binh and Hanoi were trained. Some of them are trained trainers.

- Communication and training materials were developed and distributed, which include:
 - Posters on prevention of PPBDs (HUPH and NIMPE)
 - Butcher guidelines (lead FUB)
 - Video on digestion method to detect trichinella (lead BfR and NIVR)
- Collaboration with international and national partners have been strengthened. This included the National Institute of Malariology, Parasitology and Entomology (NIMPE) and the National Institute of Animal Science (NIAS) (Vietnam), but also the Centers for Disease Control and Prevention (CDC) Atlanta (USA).
- Results of the project have been recognized at international events (e.g. SafePORK Berlin, 2019) and two papers have been submitted to peer reviewed international journals.

Next steps

- Finalize booklets to guide on safer and better hygienic practice along Ban pig value chain actors.
- Share relevant materials on prevention of PPBDs with the OIE Regional Representation for Asia and the Pacific.
- Maintain the information hotline in case of any human suspected cases on PPBDs (NIMPE).
- Align to the ongoing SafePORK project in Hoa Binh by following up on Ban pig brand with local authorities and including a Safe Pork label under the SafePORK project.
- Train butchers linked to a Ban pork producer cooperative on more hygienic pork handling and detection of pork parasites.

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