

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

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## BACKGROUND

Pig production is an important livelihood activity for ethnic minorities in Vietnam. Indigenous breeds have traditionally been kept under extensive management systems facing various challenges, however, studies by the International Center for Tropical Agriculture (CIAT) and the International Livestock Research Institute (ILRI) suggest that indigenous pig production should allow ethnic minorities to produce and consume more animal source foods while food safety risks needs 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 food-borne parasite and trichinellosis (*T. spiralis*) ranks seventh. Both are under-recognized diseases characterized by a variety of clinical signs in humans including epilepsy for cysticercosis and muscle pain with fever for trichinellosis. Both can result in pork being condemned and lost from the food chain with important economic and nutrition impacts. Both zoonoses likely endemic in parts of Vietnam, especially in indigenous pig systems. Limited data suggests 0.1-12.0% of people are afflicted by taeniasis/cysticercosis depending on the area while interventions studies are missing.

The pork value chain in Vietnam has been identified as a system where the 'incentive-based, light touch' approaches to food safety can scale, and being currently addressed by bilateral projects such as PigRISK and SafePORK projects which are funded by the Australian Centre for International Agricultural Research (ACIAR). The flagship Improving Human Health under the CGIAR Research Program on Agriculture for Nutrition and Health (A4NH) phase 2 addresses zoonoses with cysticercosis as a priority disease. Linkages are also foreseen CGIAR Research Program on Livestock Agri-food Systems.



## OBJECTIVES

The project goal is to assess and reduce both parasitic pig-borne diseases (PPBD) in ethnic minorities (50% are pork eaters) of selected areas of Vietnam.

Specific objectives include:

- To gather information on the presence of both PPBD in indigenous pigs and their burden in ethnic commune members based on serology and records (e.g. vet stations or hospitals).
- To determine the perception and awareness of indigenous pig farmers and other value chain actors (e.g. traders, retailers or restaurants) on both PPBD.
- To address capacity gaps (e.g. meat inspection) and diagnostic difficulties (e.g. specificity of available commercial test) using improved diagnostic tools (e.g. western blot) or rapid tests (ILRI currently developed lamina flow test for porcine cysticercosis).
- To develop and test promising interventions to reduce both PPBD and promote a brand 'Healthy livestock and people' or 'Parasitic free pigs for healthier consumers'.
- To build capacity and engage with policymakers to support application of interventions.

## MATERIALS AND METHODS

- Literature review (presence of both zoonoses, available tests and control).
- Prevalence survey for both zoonoses using a probabilistic sampling design in households (up to 300) with pigs and humans in up to 9 ethnic communities.
- Gender disaggregated data collection on risk factors for zoonoses and perception of respondents by questionnaires, focus group discussion, interviews and checklists.



- Training courses for improved meat inspection/hygiene and address diagnostic challenges for both zoonoses, supported by German partner.
- Trials to test intervention package to reduce PPBD (1 commune). Interventions may include new rapid tests, awareness campaigns or vaccination (Cysticercosis).
- Feed back meetings and consultations with groups and stakeholders .
- Campaigns to promote a brand name for safer indigenous pigs.

## OUTPUTS

- Prevalence estimates for trichinellosis and cysticercosis/taeniasis in pigs and human, determined risk factors, respondent's perception on both zoonoses.
- Trained meat inspectors (≥ 100) on field based diagnostic (commune/district).
- Established improved laboratory diagnostic capacity through the use of more specific test (provincial, national). ≥ 20 lab technician trained.
- Village based brand model 'parasitic free pigs and healthier consumers' tested
- Publications, policy briefs, flyers, radio campaigns.

## PARTNERS

### National partners:

Hanoi University of Public Health (HUPH)  
National Institute for Veterinary Research (NIVR)  
Government: Department of Agriculture and Rural Development (DARD), Ministry of Agriculture and Rural Development (MARD), Vietnam Food Administration (VFA)

### German partners:

Freie Universität Berlin (FUB), Vet Med Faculty  
Federal Institute for risk Assessment, BfR, Germany

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