

# Hygiene and microbial contamination along the pork value chain in Vietnam

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## Introduction

Pork accounts for 75% meat consumed in Vietnam and the most popular protein food. Contamination of food may occur at any stage in the process from food production to consumption ("farm to fork"). Among many potential food-borne pathogens, *Salmonella* and *E. coli* were selected for investigation along the smallholder pig value chain and were assessed at pig farm, pig slaughterhouse and pork market. Thus, this study aimed to assess the hygiene and microbial contamination along the pork value chain in Vietnam with a focus at those three nodes.

## Methods

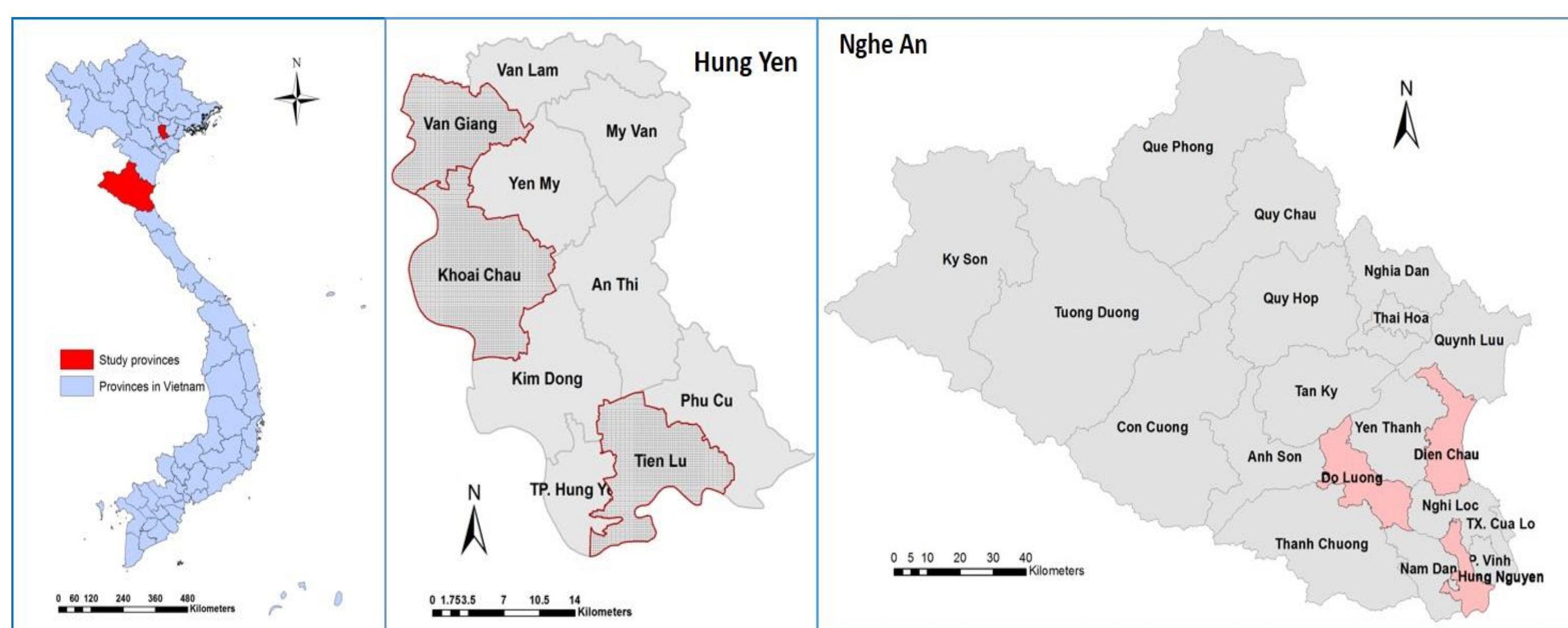


Fig 1. Studied districts in Hung Yen and Nghe An provinces

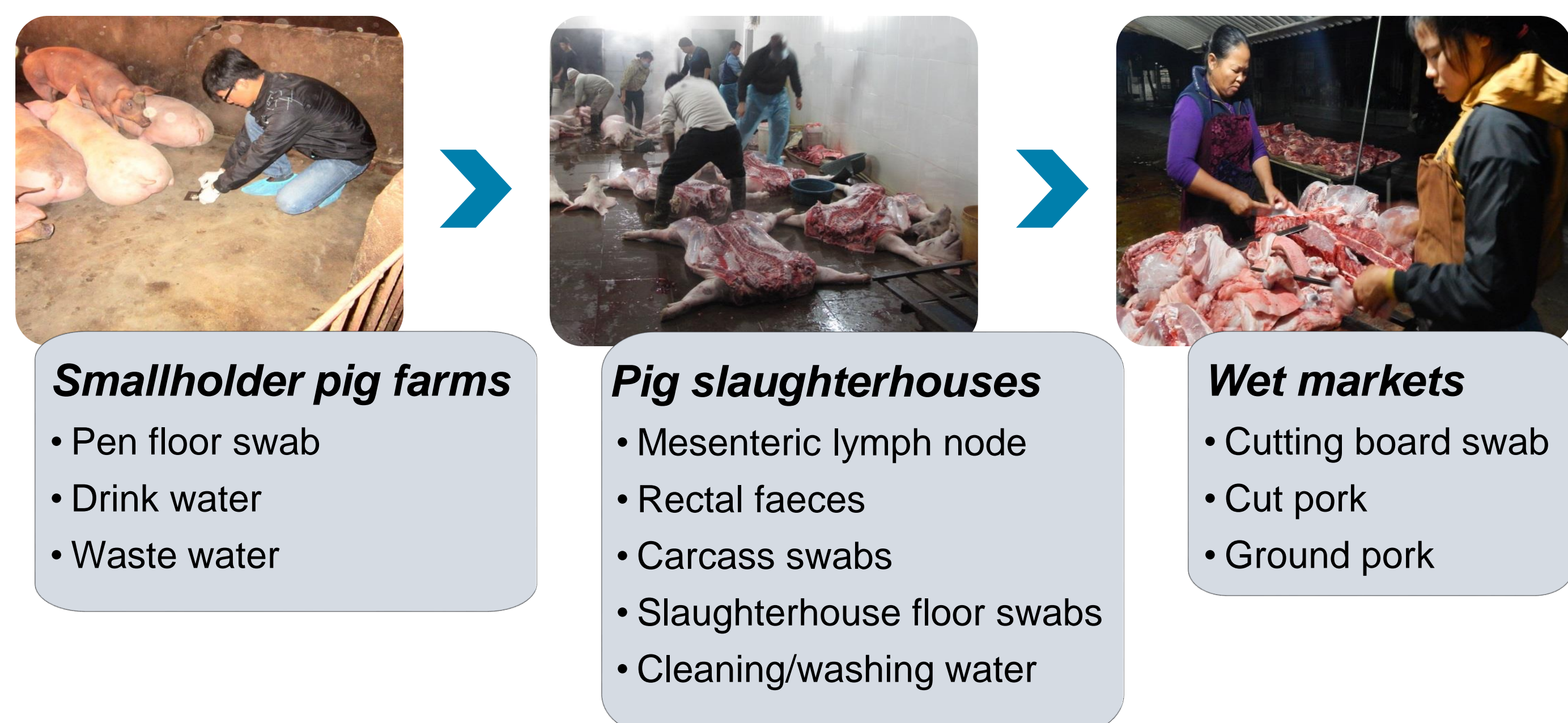
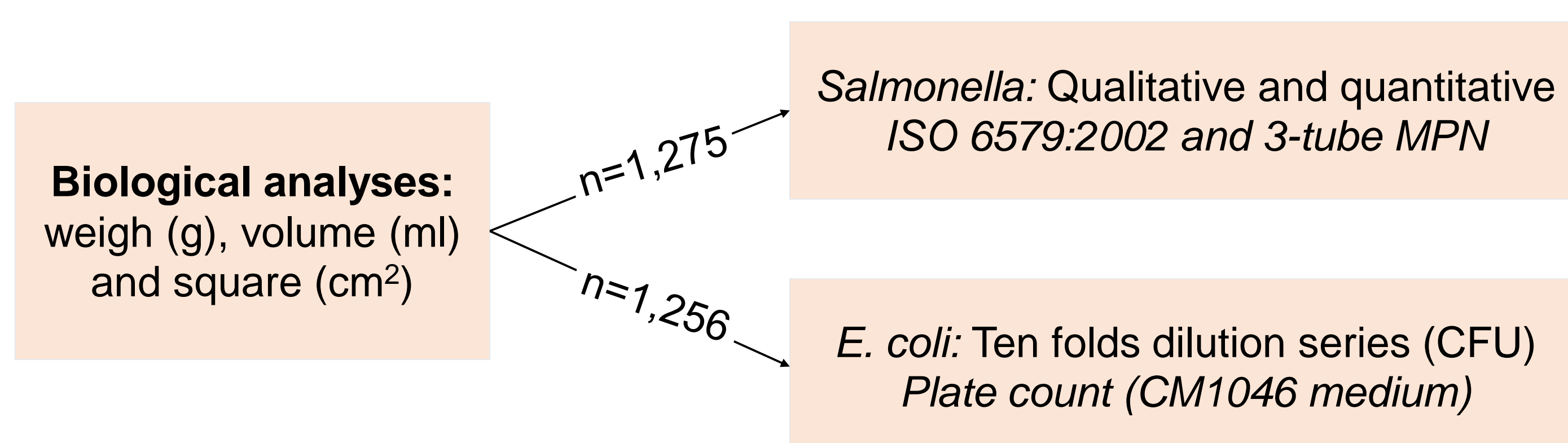
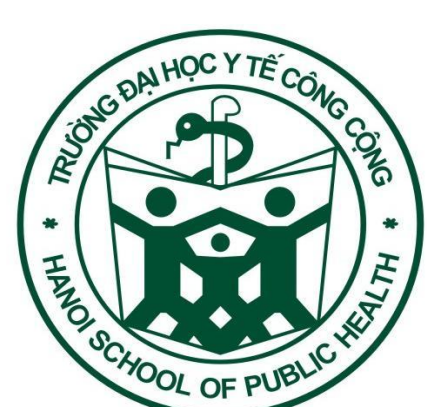


Fig 2. Sample types collected along 3 nodes on the pork value chain



## Acknowledgments

- PigRISK project: "Reducing disease risks and improving food safety in smallholder pig value chains in Vietnam".
- Farmers, slaughterhouses, sellers and local authorities in Hung Yen and Nghe An provinces.
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## Results

### Salmonella contamination

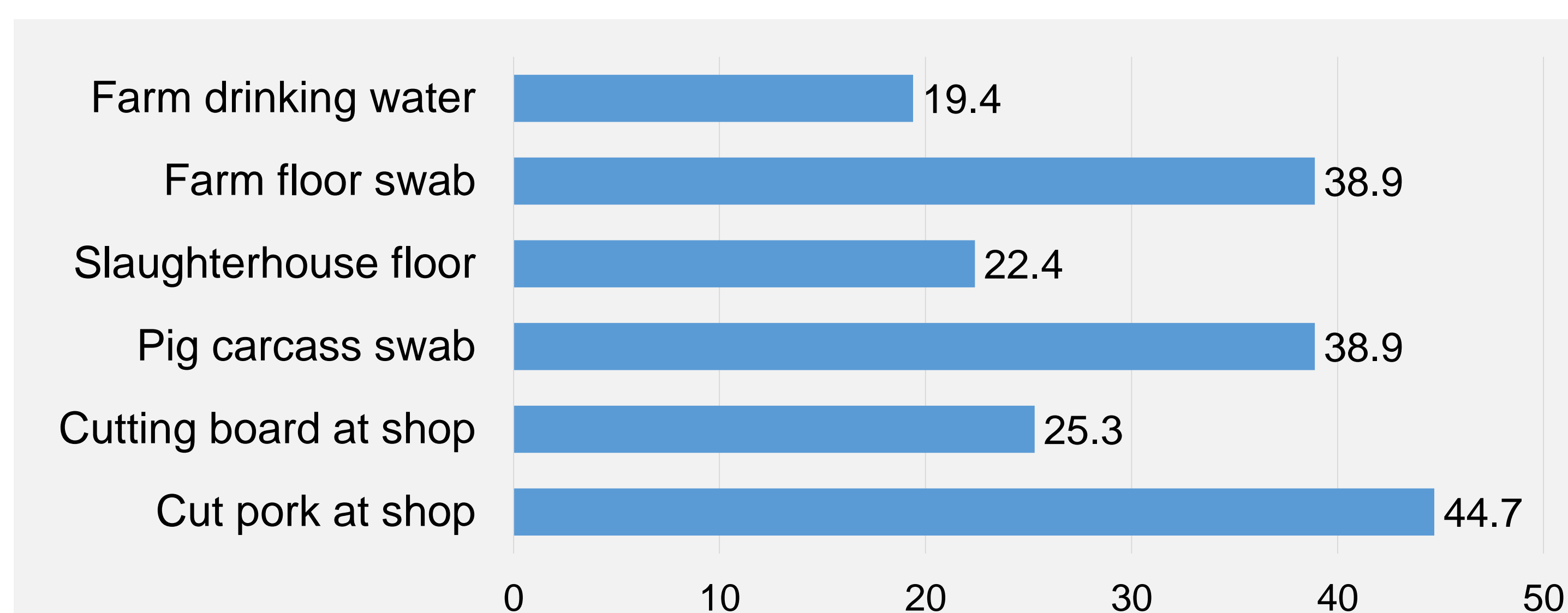


Fig 3. Salmonella prevalence in different samples



Table 1. Salmonella quantification in pork

Samples	No. of positive/n	MPN/g [μ(min - max)]
Cut pork	97/217	8.8 (<0.3 - >110)
Ground pork	33/80	17.7 (<0.3 - >110)
<b>Overall</b>	<b>130/297</b>	<b>11.4 (&lt;0.3 - &gt;110)</b>

Fig 4. Overall prevalence of Salmonella combined at 3 nodes in the pork chain

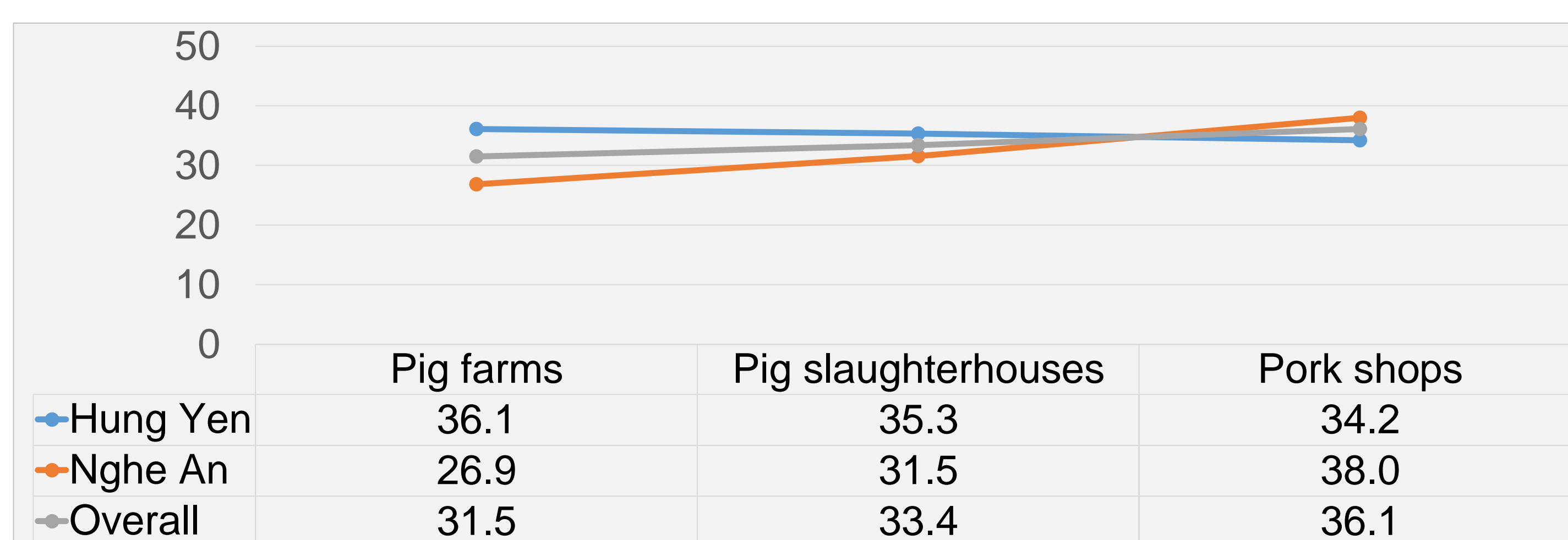


Fig 5. Overall prevalence of Salmonella combined between 2 studied provinces

### E. coli contamination



Fig 6. E. coli average loads along the pork chain

Among pork samples, 180/297 (61%) samples exceeded the Vietnamese standard (QCVN 8-3:2012/BYT) on *E. coli* in fresh meat.

## Conclusions

- We found high levels of *Salmonella* in the final product (pork at market) implying a potential health risks for the consumers.
- We found high values of *E. coli* along the chain, indicating general poor hygiene. Appropriate hygiene practices and management are required to achieve better pork quality and reduce the risk for the consumer.
- These data will serve as inputs for health risk assessments related to pork consumption.



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