



# Improving human health through sustainable value chains in human-animal-environmental interactions using ICT in Vietnam

## -ICT4HEALTH-

### Workshop on Research to Policy : Improving Animal Disease Prevention and Control in Vietnam

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*Quang Ninh, 17-18 October 2024*

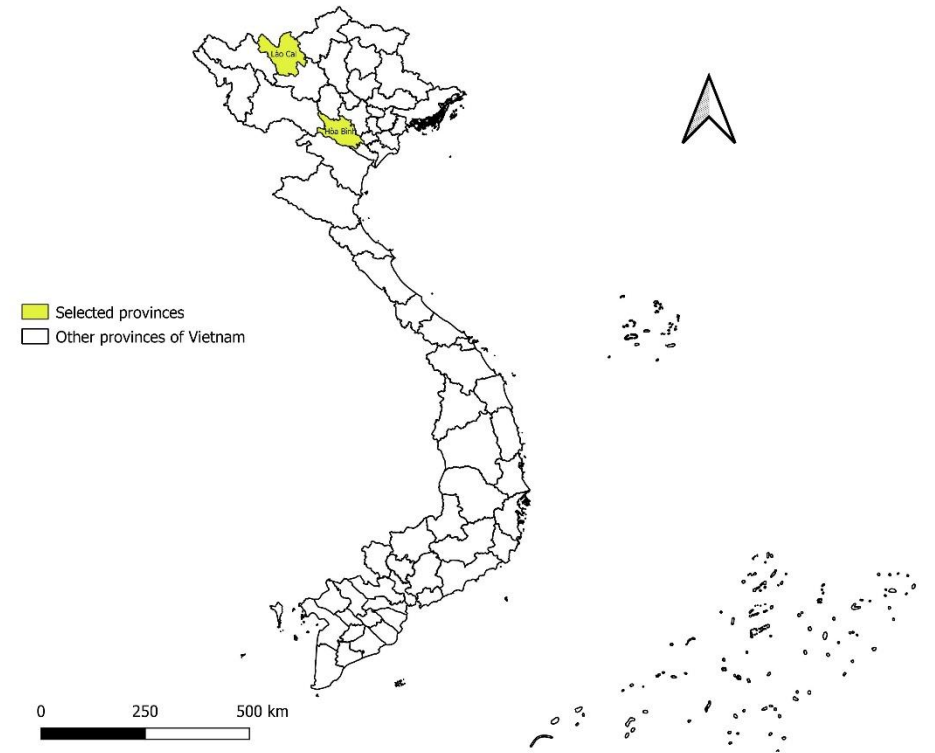
# Content

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- Project overview
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# Project overview - introduction

- **Period:** 2022-2025
- **Target area:** Hoa Binh and Lao Cai provinces
- **Budget:** ~USD 2.8 million
- **Partners:** NIVR and ICD (OHP)-MARD, HUPH-MOH (Vietnam), AIDKR (Korean IT company)
- **Donor:** Ministry of Agriculture, Food and Rural Affairs (MAFRA) in South Korea



# Objective and Key components

To improve human health through strengthen the capacity of the government and community to prevent, control or eliminates risks of TAEZDs under a One Health approach and using ICT

## Component 1:

To conduct gap analysis on TAEZDs

- TAEZDs prioritization through participatory approach
- Communication and information sharing

## Component 2:

To establish surveillance working groups

- Institutional capacity
- Integrated surveillance and diagnosis along the VC
- Assessment of cost-effective control & prevention strategies

## Component 3:

To conduct a pilot study for e-surveillance & training

- Developing mobile application and systems
- Training workshops for e-surveillance system

## Component 4:

To develop method tools for improving health along the VC

- Developing risk map and transmission models
- Risk assessment and preparedness tools
- Cost-effective strategies

## Component 5:

To implement community-based interventions

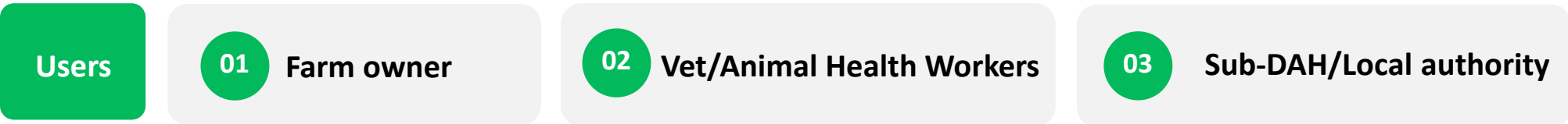
- Low-cost interventions (e.g., livestock management and biosecurity)
- Capacity building (e.g., outbreak investigation, vaccines and drug use)

Cross cutting aspects: ICT, E-training, Gender & equity, Climate change, and Animal welfare

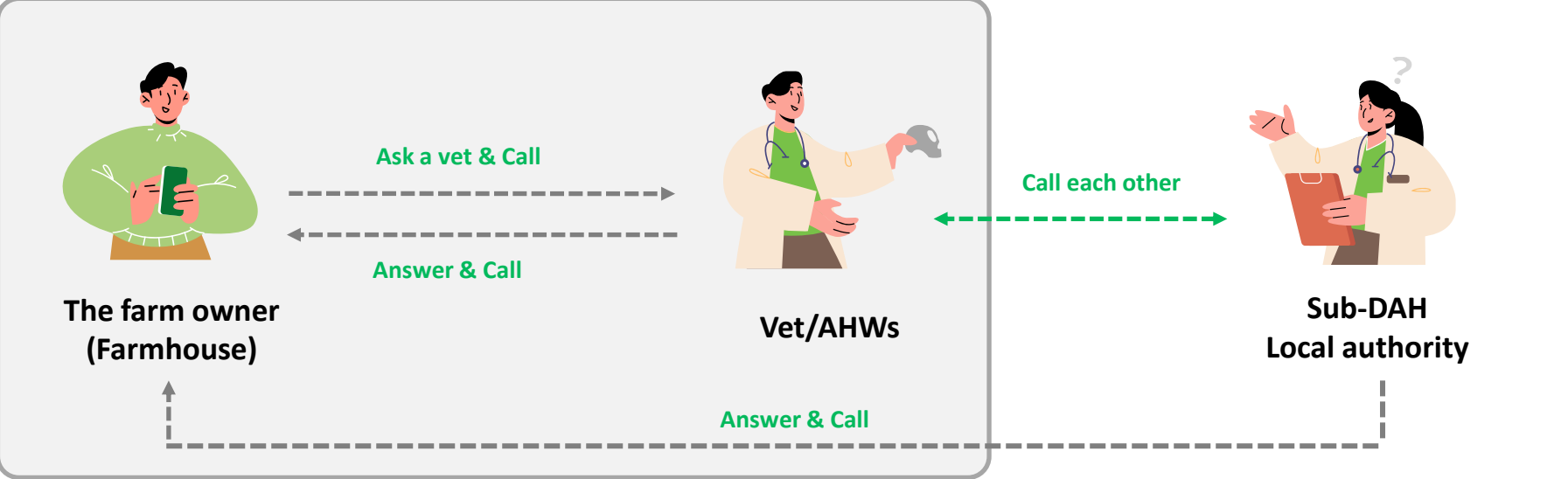
Link to the SDGs:



# Key technology development and application



**Flow & Main Features**

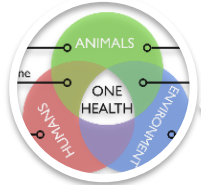


- Ask a Vet (describe symptoms and share images)
- Call to Vet/sub-DAH (only after receiving the answer)

- Manage all inquires from dedicated farmers
- Provide Q&A answers
- Call farmers only after registering their inquiries
- Call sub-DAH (default)

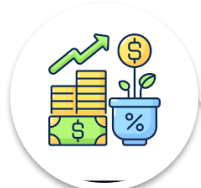
- View all inquiries from dedicated vets
- Provide Q&A answers (support vet)
- Call to farmers (only after registering the inquiry)
- Call to vets (default)

# Project overview - Expected outcomes



Improved evidence-based One Health policies for the government

- List of prioritized diseases and recommendations
- Strengthened human and animal disease monitoring and surveillance of stakeholders



Improved livestock productivity in smallholders and income by reduced disease outbreaks in animals and human



The pilot model using ICT and solutions in monitoring, surveillance and management for animal diseases



Improved veterinary services and better accessibility for smallholder farmers



Increased eco-friendly & sustainable productions of relevant value chain actors along the livestock value chain

# Project activities and milestones

2022

2023

2024

2025

2026



## Kick off workshop (Aug 2022)

- MARD-Vietnam
- Project partners
- MAFRA & ILRI CRA

## Scoping visits

- Hoa Binh and Lao Cai (Jan, Apr, May 2023)
- AIDKR IT scoping and interview (Jan 2023)

## MARD project approval

- Application & MARD approval (2023)

## App trainings

- Project Researchers
- Local vet/Sub-DAH (Jan-Mar 2024)

## Disease prioritization

- Hoa Binh and Lao Cai (Apr 2024)
- 6 diseases will be focused

## Sampling, survey & model farms (intervention & scale up, Nov-Dec 2024)

## Improvement of surveillance & ICT (2025-26)

## Intervention, production & One Health (2025-26)

## Literature review

Two publications (on TADs and EZDs, 2022-23)

## AIDKR developed Apps

- 3 Apps [Farmers, AHWs/Vet, Sub-DAH-Admin] (2023)

## One health training

- Local authorities
- Farmers (Sep-Oct 2024)

## Sampling & surveillance

- >2000 samples across livestock farms

## OH field sites & surveillance

- >500 livestock farms
- Local authorities staff

## Apps trainings

- Farmers, AHWs/Vet, Sub-DAH-Admin) (2024)

## Model farms, using apps

- ~100 models farms
- Expand the model and apps

## Evaluation/impacts & policy

- Livestock productions
- Application of ICT
- Value chain & sustainable

Q3+Q4 2024



# Project activities and progress

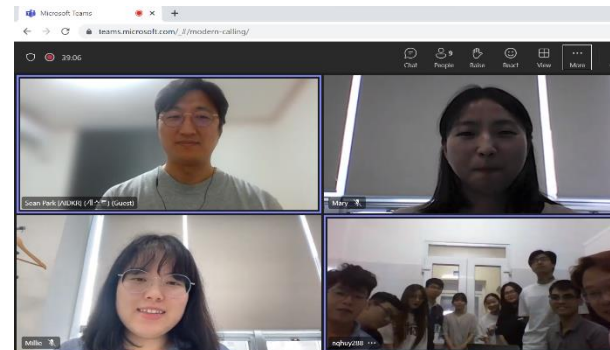
| Components & activities  | Times     | Results   | Note   |
|--|-----------|---|--|
| <b>Comp 1:</b> Literature review and disease prioritization                                | 2022-2023 | <ul style="list-style-type: none"> <li>1 paper on EZDs (published, IF=6.8)</li> <li>1 paper on TADs (2<sup>nd</sup> round review)</li> </ul>  | Accomplished   |
| <b>Comp 1:</b> Disease prioritization (workshops and interviews)                           | 2023-2024 | <ul style="list-style-type: none"> <li>3 Zoonotic diseases: AI, Lepto, <i>S. suis</i></li> <li>3 Transboundary diseases: ASF, FMD, LSD</li> </ul>   | Accomplished<br>52 participants                      |
| <b>Comp 2-5:</b> Partnership and scoping visits with Sub-DAHs Hoa Binh & Lao Cai provinces | 2022-2023 | <ul style="list-style-type: none"> <li>6 meetings and visiting trips in 2 prov.</li> <li>Introduce the project, activities, updated</li> <li>6 communes in 2 districts selected</li> </ul>      | Accomplished<br>Hoa Binh & Lao Cai                   |
| <b>Comp 3:</b> Developed the mobile apps by AIDKR, scoping, piloting                       | 2022-2024 | <ul style="list-style-type: none"> <li>4 meetings and scoping trips in 2 prov.</li> <li>3 Apps developed (Farmers, AHWs, Admin)</li> <li>1 TOT NIVR (n=12), 02 AHWs trainings (n=60)</li> </ul> | Accomplished<br>NIVR, Hoa Binh & Lao Cai             |
| <b>Comp 3:</b> Mobile apps (AIDKR): trainings and application in the field                 | 2024      | <ul style="list-style-type: none"> <li>2 training for local staff/vet (over 80 staff)</li> <li>4 trainings for farmers (over 100)</li> </ul>  | On-going<br>Hoa Binh & Lao Cai                       |
| <b>Comp 2-3:</b> OneHealth trainings and surveillance improvement in provinces             | 2024      | <ul style="list-style-type: none"> <li>4 OH trainings to local authorities and farmers</li> <li>Surveillance assessment &amp; improvement</li> </ul>  | On-going<br>Hoa Binh (Oct 2024) & Lao Cai (Sep 2024) |
| <b>Comp 2-5:</b> Sampling, improvement/apply of ICT One health and interventions in        | 2024-2026 | <ul style="list-style-type: none"> <li>Sampling &amp; interviews (n=1200) in 2 prov.</li> <li>2 OH sites 70 model farms interventions</li> </ul>  | On-going<br>Hoa Binh & Lao Cai                       |

# Project activities and progress

- Kick off workshop (Aug 2022), >90 participants
- Comp. 1: Literature reviews on TADs and EZDs
- Comp. 1, 2, 4 & 5: Partnership and scoping visits
- Comp. 3: Developed the mobile application by AIDKR

TOT for NIVR and training for local AHWs

- Comp. 1: Prioritization of transboundary animal diseases and zoonotic diseases in Hoa Binh and Lao Cai



# Activities & pictures

VETERINARY QUARTERLY  
2024, VOL. 44, NO. 1, 1–15  
<https://doi.org/10.1080/01651176.2023.2300965>



OPEN ACCESS [Check for updates](#)

Emerging zoonotic diseases in Southeast Asia in the period 2011–2022: a systematic literature review

Thanh Trung Nguyen<sup>a</sup>, Thi Ngan Mai<sup>a</sup>, Sinh Dang-Xuan<sup>b</sup>, Hung Nguyen-Viet<sup>b</sup>, Fred Unger<sup>c</sup> and Hu Suk Lee<sup>c</sup>

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Transboundary diseases in pigs, poultry and ruminants in Southeast Asia: A systematic literature review

|                  |                      |
|------------------|----------------------|
| Journal:         | Veterinary Quarterly |
| Manuscript ID:   | TVEQ-2023-0157.R1    |
| Manuscript Type: | Original Article     |



# Project activities and progress

- **One Health training:** series of training about OH approach
  - VOHUN, VNUA and TUAFL lecturer
  - Sub-DAH, local veterinarian and livestock farmer (Lao Cai/Sep 2024 and Hoa Binh/ Oct 2024)
- **Census livestock farmers information in Hoa Binh and Lao Cai province** (Sep 2024)
  - Total 8240 livestock farms (chicken, cattle, and pig) with 96 villages in 6 communes in 2 districts in Hoa Binh and Lao Cai province
- **Pre-test questionnaire** (Sep 2024) for 12 livestock farmers (chicken, cattle and pig) in Hoa Binh and Lao Cai province



Pre-test questionnaire with chicken farmer in Hoa Binh province



Cattle farm household in Lao Cai province

## Activities and pictures



One Health training in Lao Cai province



Census activities

Guide head village to fill the census form (left) and re-check the (result) census form (right)

# Project activities and progress

## Other activities

- **KRC/MAFRA: project monitoring & evaluation (May 2023)**
  - Welcome KRC and meeting at ILRI & NIVR offices
  - Attending on-site visit to Hoa Binh province
- **Submissions and Presentations of ICT4Health projects at different national & international conferences/symposiums:**
  - Thailand (13<sup>th</sup> GASL 2023), Laos (SAADC 2023), Kenya (ICTforAg 2024), China (TADs 2024),
  - South Africa (WOHC, Sep2024); Australia (ISVEE-Nov2024)
  - Sweden (DevRes conference, 21-23 Oct 2024)



Meeting at ILRI office



Meeting at NIVR office



In the field in Hoa Binh

ILRI AGRA KENYA SPACE AGENCY KILIMO RAHINA kuzi MERCY CORPS

ICTforAg 2024  
Localizing Impact

**ICT for One Health**

Hung Nguyen-Viet, Elizabeth Cook, Bernard Bett, Florence Mutua, Thang Nguyen, Hu Suk Lee, Nam Luong, Sinh Dang and ICT4HEALTH team

Thank you for listening  
谢谢

**Improving human health through sustainable value chains in human-animal-environmental interactions using ICT in Vietnam (ICT4Health)**  
Period: 2023-2025

**Expected learnings/outputs**

**Future steps**

**Partners**







# Communication & team

## Our team

**ILRI** | CGIAR

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### Improving human health through sustainable value chains in human-animal-environmental interactions using ICT in Vietnam (ICT4Health)

ACTIVE From January 2022 to December 2025

This project uses a One Health approach to tackle zoonotic diseases by strengthening capacities of national partners in surveillance, early detection and emergency response, disease prevention and control, and laboratory science.

Emerging and re-emerging zoonotic diseases such as Middle East respiratory syndrome coronavirus, Ebola, rabies and avian influenza pose a major threat to humans and animal health globally. These diseases may have a wildlife reservoir or involve domestic animals.

In Southeast Asia, continued losses of livestock due to transboundary diseases such as African swine fever have revealed major weaknesses in the public health and veterinary services. Vietnam has been identified as a hotspot for transboundary animal and emerging zoonotic diseases in the region.

This project uses One Health to ensure a multidisciplinary and multi-sectoral approach to addressing the threat of zoonotic diseases. It also strengthens the capacities of national partners in surveillance, early detection and emergency response, disease prevention and control and laboratory science (serology and diagnostics). The project will inform policy formulation to improve the management of transboundary animal and emerging zoonotic diseases.

#### Objectives

- Conduct gap analysis of the current registration of transboundary animal and emerging zoonotic diseases (disease prioritization process using a One Health approach)
- Establish One Health transboundary animal and emerging zoonotic diseases surveillance working groups and set up networks among them and with key surveillance partners
- Conduct a pilot study for a surveillance and monitoring system using ICT responding to transboundary animal and emerging zoonotic diseases with authorities and relevant stakeholders
- Deploy tools and methods to improve the surveillance of transboundary animal and emerging zoonotic diseases
- Develop strategies to improve agricultural extension services and share equal benefits and rights for women through gender-focused interventions

#### Expected outcomes

- Evidence-based One Health strategies and policies for the government
- Knowledge and information on One Health research and policies in Vietnam
- Institutional capacity to support development of a One Health strategy and action plan
- List of prioritized transboundary animal and emerging zoonotic diseases and recommendations
- Strengthened human and animal disease monitoring and surveillance
- Establishment of a surveillance and monitoring system through mobile application along livestock value chains
- Cost-effectiveness control strategies for animal and zoonotic diseases
- Strengthened knowledge and understanding on emerging gender issues in livestock farming
- Strengthened capacity to integrate gender in livestock programs and project

Animal Health, Capacity Strengthening, Disease Control, Emerging Diseases, Human Health, One Health, Zoonotic Diseases

**CONTACTS**

 **Hung Nguyen-Viet**  
Co-Leader, Animal and Human Health Program

[VIEW ON CGSPACE](#)

**PARTNERS**

- AIDKOREA
- Chungnam National University, South Korea
- Hanoi University of Public Health
- Ministry of Agriculture and Rural Development, Vietnam
- Ministry of Health, Vietnam
- Ministry of Natural Resources and Environment, Vietnam
- National Institute of Hygiene and Epidemiology, Vietnam
- National Institute of Veterinary Research, Vietnam
- Vietnam National University of Agriculture

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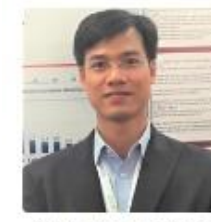
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**Wacera Ndonga**  
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# Thank you!



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