

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

Training report on mobile application of Farmvetcare for Sub-Department of Animal Health and Livestock Health in Lao Cai Province



ILRI PROJECT REPORT



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Animal
Industry
Data

Improving human health through
sustainable value chains in human-
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Abbreviations and acronyms

AIDKOREA	Animal Industry Data Korea
AHW	animal health worker
ICT	Information and Communications Technology
ILRI	International Livestock Research Institute
MAFRA	Ministry of Agriculture, Food and Rural Affairs
NIVR	National Institute of Veterinary Research
Sub-DAH	Sub-Department of Animal Health

Introduction

This training was conducted within the framework of the 'Improving human health through sustainable value chains in human-animal-environmental interactions using ICT in Vietnam (ICT4Health)' project. Started with a kick-off workshop in 2022, the three-year project is funded by the Ministry of Agriculture, Food and Rural Affairs (MAFRA) in South Korea through ILRI. Its primary aim is to strengthen the capacity of the government and communities to prevent, control or eliminate the risks of transboundary animal and emerging zoonotic diseases using the One Health approach.

The 'ICT4Health mobile application training workshop' took place on 23–24 January 2024 in Hanoi, Vietnam. Twenty-five participants (76% male and 24% female) from the Lao Cai sub-Department of Animal Health (sub-DAH), district and veterinarians from Lao Cai Province communes, Vietnam's National Institute of Veterinary Research (NIVR), Animal Industry Data Korea (AIDKOREA), and the International Livestock Research Institute (ILRI) took part.

The objectives of the first day's training were to:

1. Provide an overview and updates on the ICT4Health project, detailing progress and future plans;
2. Introduce the FarmVetCare mobile application, explaining the functions and principles for the three types of users; and
2. Facilitate a question and answer session about the project for clarity and engagement.

The objectives of the second day's training were to:

1. Provide detailed instructions for the usage of the mobile application, tailored for veterinarians, sub-DAH officers and farmers;
2. Facilitate practise/role-playing sessions for sub-DAH officers and veterinarians to ensure comprehensive understanding and usability of the app; and
3. Review and collect feedback on the mobile application, followed by a question and answer session to clarify any doubts and gather user insights.

Training sessions

The two-day training session was a mix of structured presentations and interactive activities. (The program is attached at the end of the report).

Day 1–Introduction to ICT4Health project and mobile application

The first day of the training featured a comprehensive presentation on the ICT4Health project, providing an overview of its current status, key developments and objectives. This was followed by a detailed introduction to the FarmVetCare mobile application, tailored for three distinct user groups: farm owners, veterinarians/animal health workers (vets/AHWs), and sub-DAH officials. Developed by AIDKOREA in 2023, the app is designed to provide quick professional veterinary advice to farmers and alert veterinary authorities when there is a need to control infections.

An in-depth discussion on the roles and responsibilities of sub-DAH officials within the project, emphasizing their expected contributions and tasks, was also part of the session. The day concluded with interactive question and answer sessions, offering participants the opportunity to clarify doubts and gain a deeper understanding of both the ICT4Health project and the functionalities of the mobile application.

Day 2–Practical application training and feedback

The second day commenced with participants receiving instructions on the use of the FarmVetCare mobile application. This was followed by a practise/role-playing session for the Lao Cai delegates, focusing on the practical use of the mobile app in various scenarios. Further practise and role-playing exercises were conducted for all user groups, including sub-DAH officials and veterinarians, to ensure comprehensive familiarity with the app.

Upon completion of these sessions, participants discussed the challenges and inconveniences they encountered while using the application, along with exploring potential solutions to these issues. The training concluded with a wrap-up session that discussed the next steps, such as training of trainer sessions for vets and farmers on how to effectively use the application.

Feedback on mobile application from sub-DAH staff

[Veterinarian version]

Group communication: Add a function for group discussions (so that one vet can contact other vets through the app), facilitating experience-sharing and consultation on case diagnosis and treatment.

Update veterinary drug list: Simplify the app's veterinary drug list for easier consultation because the extensive list poses a challenge to users.

Reminder notification: Delays in responding to user queries, caused by the workload at branch offices, might deter users from seeking assistance in the future. To remedy this, implement a notification system to alert vets who have not responded to a case within a specified time frame. Initial notifications should be sent after the farmer's report, followed by reminders after 2 hours, after another 1 hour, and then every 30 minutes thereafter. If there is no answer from veterinarians at the commune level after a certain time, a message should be sent to the senior management level, for senior veterinary officers to answer farmers' questions. This will ensure smooth communication, faster disease diagnosis and timely response to farmers' concerns.

Answer editing function: Introduce an 'edit answer' function to allow vets to modify their responses.

Feature additions: Include an 'add/send photo' function to enable vets to quickly share vaccine/drug names with farmers. If possible, enable sharing of instructions on how the farmer should check for symptoms in livestock.

Additional training for vets: More training programs focusing on prevention, treatment and consulting skills will enhance the capabilities of local and district vets.

[Farm owner version]

Disease control handbook readability: Increase the text size in the handbook for better readability and include current disease situation news (this needs to be updated frequently, i.e. weekly/bi-weekly/monthly). Enlarge the text, include a zoom function and incorporate instructional videos for clarity and user engagement. Replace the text format with short video clips, as many farmers are hesitant to read lengthy texts.

Photo and video sharing: Enhance features to allow more photo sharing for clearer case description and understanding. Currently, the users are limited to four photos, which may be insufficient for diagnosis, and users are encouraged to upload photos of used drugs and vaccines for better diagnosis and treatment assistance. If possible, upgrade the app to include sharing of video clips.

Farmer ID modification: Identify farmers using their phone numbers, facilitating easier contact between vets and farmers.

Enhancement of disease symptom descriptions: Create a symptom list based on priority diseases to enhance diagnostic accuracy, as self-described symptoms can lead to imprecise or incomplete predictions. Additional symptoms need to be included in the disease symptom descriptions in the app to cover missing aspects.

Addition of medical information: Incorporate 'first day of illness' in patient data for better tracing of medical history.

Vaccine type description: For accuracy, allow vaccine categorization in the app because a farmer might use different vaccines in one herd.

Satisfaction assessment: Implement satisfaction assessment (1–5 stars, for example) after each consultation.

Question editing function: Allow farmers to edit their questions.

Location sharing: Include a farm location sharing feature to assist vets in understanding local situations or creating epidemic zones when necessary. There is a possibility that some people may want to conceal an epidemic, so the creation of epidemic zones needs to be done judiciously, in collaboration with online mapping services such as Zalo.

Vet selection by farmers: Allow farmers to choose either the nearest vet or a specific vet they wish to receive advice from.

Feature modifications: Remove the 'vùng (region)' feature because it causes confusion among users on the location/place of their farm.

General feedback on the application and the project

Video inclusion: Add educational videos to the home/disease control menu section.

Direct call feature: Develop a feature for making direct calls from the app. However, if a SIM call is used initially, farmers may obtain the vet's phone number and prefer using direct phone calls in the future, bypassing the app. Thus, the 'call' function should not display the phone numbers of vets to encourage farmers to use the app.

Translation accuracy: Address the translation errors in the app. Emphasize the importance of revising translations for accuracy to enhance farmer comprehension. (NIVR and ILRI will collaborate on this task and forward the revised content to the IT team for implementation.)

Some notes for translation from English into Vietnamese and word correction:

- + "number of livestock" -> "total herd"
- + "Animals" -> "animals"
- + "Suspected of being infected" -> "Sick number"
- + "Death" -> "death"

Regular training: Conduct regular training sessions on disease diagnosis, including capacity-building for veterinarians and vaccine usage for farmers, to reduce livestock diseases.

Other training content: Include instructions for farmers on how to take pictures. The quality of images sent via the app is very important for diagnosing diseases in livestock.

Internet access: In mountainous and remote areas, internet connections are often unstable, affecting timely communication between farmers and veterinarians. The project should ensure that farmers have internet access when registering to participate.

Challenges and their resolution in app deployment

In the real-world scenario of app deployment, it is certain that various difficulties and problems will be encountered. For successful implementation, the approach is not one of avoidance of difficulties but rather a commitment to gradual resolution. This means that problems will be addressed directly at the source. The ethos here is clear: no matter where the issues occur, they will be managed on-site, demonstrating a proactive and resilient attitude towards the successful deployment of the app.

ILRI's gender integration recommendations for Farmvetcare app training and usage

According to preliminary information from the Lao Cai Sub-DAH, women comprise 40% of the staff at the sub-DAH and district-level veterinary department. However, the number at the commune level is only about 20–30% (equivalent to 6 women or fewer among 20 commune-level veterinary staff).

Participant ratio in training sessions

Invitations for training sessions should clearly state the expected proportion of female participants:

- At the sub-DAH and district-level veterinary departments, the percentage of women participating in the training should be about 40%.
- At the commune level, efforts should be made to increase the participation of female veterinarians to at least 60%.
- At least 50% of the farmers attending training sessions should be women.

Inclusive participation of farmer couples

The project should invite both husbands and wives to attend the Farmvetcare app training. This approach promotes gender equity and ensures shared responsibilities in domestic work and livestock care. Encouraging both partners to participate can lead to more active involvement of women in using information technology for livestock disease prevention and treatment.

Household account usage

Each household should be provided with one Farmvetcare app account. Couples should be encouraged to install the app on their personal cell phones but use the same account assigned to the household. This method allows for tracking of app usage by gender, providing valuable data on whether women or men are more frequent users.

Encouraging women's participation in training

Facilitators should actively encourage women to express their opinions during training sessions. This recommendation addresses the tendency for men to be more proactive in speaking, while women may be more reserved. Inviting women to give feedback on the app ensures that the project captures the perspectives of both genders.

Training program

Time	Activity	Person in charge
Day 1 (23 January 2024): Introduction to ICT4Health project and mobile application		
Morning	Lao Cai delegates travel to Hanoi	
14:00–14:15	Registration	
14:15–14:30	- Greetings and welcome remarks - Introduction of the meeting objectives and working agenda	- Pham Thi Ngoc (acting director of NIVR) - Bui Nghia Vuong (NIVR)
14:30–14:40	Welcome remarks from ILRI	Fred Unger (ILRI)
14:40–15:00	Participant introductions	All
15:00–15:20	Overview and updates of ICT4Health project	Nguyen Tien Thang (ILRI)
15:20–15:30	Q&A about the project	All
15:30–16:00	Introduction of the three user groups of the mobile application	Dao Duy Tung (NIVR)/AIDKOREA
16:00–16:20	Work schedule of sub-DAHs in the project	Bui Nghia Vuong (NIVR)
16:20–16:45	Q&A	All
18:00	Welcome dinner	All
Day 2 (24 January 2024): Practical application training and feedback		
8:30–9:00	Registration	
9:00–9:30	Instructions for usage of mobile application for vets, sub-DAH and farmers	Dao Duy Tung (NIVR)/AIDKOREA
9:30–10:00	Practice/Role-playing on mobile app use for Lao Cai delegates	Lao Cai sub-DAH vets/Dao Duy Tung (NIVR)/AIDKOREA
10:00–10:15	Tea break	All
10:15–10:45	Practice/Role-playing on mobile app use for each user (sub-DAH and vets)	Lao Cai sub-DAH vets/Dao Duy Tung (NIVR)/AIDKOREA
10:30–11:30	Review and feedback, Q&A about mobile application	Lao Cai sub-DAH vets and other participants
11:30–11:55	Wrap-up and next steps (training of trainers on app use for vets/farmers)	Nguyen Tien Thang (ILRI)
11:55–12:00	Closing	- Bui Nghia Vuong (NIVR) - Fred Under (ILRI)
12:00	Group lunch	All

List of participants

No.	Full name	Sex	Organization	Title/Position
1	Bui Nghia Vuong	Male	NIVR	Head of Virology Department
2	Dao Duy Tung	Male	NIVR	ICT4Health project coordinator
3	Bui Ngoc Anh	Female	NIVR	Lab manager
4	Nguyen Quang Huy	Male	NIVR	Research assistant
5	Fred Unger	Male	ILRI	Representative, regional office for East and Southeast Asia
6	Thang Nguyen-Tien	Male	ILRI	Research officer
7	Nguyen Thi Minh Phuong	Female	ILRI	Gender research associate
8	Suhyeon Lee	Female	ILRI	Intern
9	Luong Hung Nam	Male	ILRI	PhD student
10	Nguyen Xuan Huyen	Male	NIVR	Head of bacteriology department
11	Tran Viet Dung Kien	Male	NIVR	Research officer
12	Tran Thi Thuyet	Female	Sub-DAH Lao Cai Province	Vice head of sub-DAH
13	Ngo Tien Dung	Male	Sub-DAH Lao Cai Province	Head of disease management department
14	Nguyen Cong Binh	Male	Sub-DAH Lao Cai Province	Vice head of disease management department
15	Nguyen Dinh Tuan	Male	Sub-DAH Lao Cai Province	Lao Cai delegate
16	Nguyen Cong Tinh	Male	Sub-DAH Lao Cai Province	Lao Cai delegate
17	Pham Anh Quoc	Male	Sub-DAH Lao Cai Province	Lao Cai delegate
18	Nguyen Thi Thanh	Female	Bao Thang district veterinary station	Vice head
19	Vu Trong Thuy	Male	Xuan Quang commune	Local veterinarian
20	Tran Quoc Toan	Male	Phong Nien commune	Local veterinarian
21	Pham Van Gioi	Male	Phu Nhuan commune	Local veterinarian
22	Nguyen Dinh Tam	Male	Lao Cai city veterinary station	Head of station
23	Daniel Kyeong	Male	AIDKOREA	Chief executive officer
23	Mary Park	Female	AIDKOREA	Associate manager
24	Noah Cheon	Male	AIDKOREA	Software Developer

List of trainers

Ref.	Full name	Sex	Organization	Title/Position
1	Thang Nguyen	Male	ILRI	Research officer
2	Tung Duy Dao	Male	NIVR	Project coordinator
3	Mary Park	Female	AIDKOREA	Associate manager

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