Overseas Comparative Study Mission toward Inclusive, Sustainable, and Competitive Livestock and Dairy Development

8-13 November 2015
Hanoi, Vietnam

Mission Report
Batch 1
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EXECUTIVE SUMMARY

The study mission in Vietnam is a component of the project Capacity Development under Livestock Research and Biotechnology Research and Development of the Carabao Development Program (CDP), which aims to enhance the capacity of the Philippine Carabao Center (PCC) to address the requirements of the Carabao sub-sector and enhance its full potential as a major player of the livestock industry and the region considering the ASEAN Economic Community (AEC) 2015 and greater globalization. It also aims for PCC to have the regional and international perspective and influence in setting the policy recommendations and developing the strategic framework toward a competitive and inclusive livestock sector.

By improving its capacity as an institution, PCC will become a stronger collaborator and better position itself as a leading research institution in ASEAN that will serve the needs of the national, regional, and global sectors.

The study mission also aims for the participants to: 1) identify relevant specific overseas public and private sector program concepts and strategies needed to strengthen the “i-REB” (Intensified Rural Enterprise Build-UP) framework and its operationalization; 2) forge stronger partnership with international research and development institutions that will enhance generation of major final output relevant to improving productivity through the application of relevant biotechniques, technology transfer, and policy reforms; and 3) prepare and submit an action plan to PCC’s Office of the Executive Director.

The study mission in Vietnam, the second in a series, was organized by the Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA) through the Training Unit of its Knowledge Management Department. The regional office of the International Livestock Research Institute (ILRI) in the Philippines, through Dr. Steve Staal, Regional Representative for East and Southeast Asia, and the ILRI Country Office in Vietnam, through its Senior Scientist and Country Representative, Dr. Hung Nguyen-Viet, served as co-organizers of the study mission.

Seven PCC officials participated in this study mission. They visited six institutions in Hanoi, Vietnam, with similar mandates as PCC. Most of these institutions were under the Ministry of Agriculture and Rural Development (MARD). The study mission gave the participants the opportunity for firsthand learning and furthering networks/linkages with the visited institutions.

Generally, the participants favorably evaluated the study missions in terms of its relevance to their current job position, their overall participation, the achievement of its objectives, and organization and arrangement of the activities.
**Background and Objectives**

The study mission in Vietnam is a component of the project Capacity Development under Livestock Research and Biotechnology Research and Development of the Carabao Development Program (CDP). It aims to enhance the capacity of the Philippine Carabao Center (PCC) to address the requirements of the Carabao sub-sector and enhance its full potential as a major player of the livestock industry and the region considering the ASEAN Economic Community (AEC) 2015) and greater globalization. It also aims for PCC to have the regional and international perspective and influence in setting the policy recommendations and developing the strategic framework toward a competitive and inclusive livestock sector.

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The study mission also aims for the participants to:

1. Identify relevant specific overseas public and private sector program concepts and strategies needed to strengthen the “i-REB” (Intensified Rural Enterprise Build-UP) framework and its operationalization;

2. Forge stronger partnership with international research and development institutions that will enhance generation of major final output relevant to improving productivity through the application of relevant biotechniques, technology transfer, and policy reforms; and

3. Prepare and submit an action plan to PCC’s Office of the Executive Director.

Specifically for the Vietnam study mission, the participants aim to:

- Learn about the establishment and implementation of the National Dairy Development Plan which lead to the reduction of milk imports, generation of rural employment and increase income of rural farmers;

- Visit selected dairy entrepreneurs, which may include small holder, medium-scale, and large-scale dairy farmers to have hands on experience and appreciation of the best practices and application of dairy technologies in the dairy farms; and
• Visit appropriate research laboratories and interact with scientists/researchers in the areas of breeding, nutrition and pasture development, animal production, reproductive biotechnologies and other related fields.

The study mission in Vietnam, which has two batches, is the second in a series organized by the Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA) through the Training Unit of its Knowledge Management Department. The regional office of the International Livestock Research Institute (ILRI) in the Philippines, through Dr. Steve Staal, Regional Representative for East and Southeast Asia, and the ILRI Country Office in Vietnam, through its Senior Scientist and Country Representative, Dr. Hung Nguyen-Viet, co-organized the study mission.

Seven key officials and staff of PCC participated in the study mission.

**Highlights**

The seven PCC officials and staff visited seven institutions during the study mission (see Attachment 1 for the itinerary and Attachment 2 for a complete list of experts met).

Most of these institutions were under the Ministry of Agriculture and Rural Development (MARD). The MARD was established by combining the following ministries: Ministry of Agriculture and Ministry of Food in 1987; and the subsequent addition of the Ministry of Forestry and the Ministry of Irrigation, which formally established MARD in 1995. The Ministry of Fisheries was added to MARD in 2007. MARD is responsible for rural development and the governance, promotion, and nurturing of agriculture and the agriculture industry in Vietnam. The purview of the Ministry includes forestry, aquaculture, irrigation and the salt industry; it is also involved in water management and flood control. It maintains 63 provincial department offices throughout Vietnam. The Ministry itself is located in Hanoi.

Below are the highlights of the study mission enumerated by institution visited. A short background on each of the seven institutions that provided information relevant to the goals of the study mission is also included.

In processing the information harvested from each institution, the following were given focus:

1. Livestock research and biotechnology;
2. Dairy farm animal management systems;
3. Community-based dairy entrepreneurship;
4. Policies/Regulatory and management framework of livestock development; and
5. Recommendations/suggestions to improve local and national Philippine livestock
RDE programs, projects, and activities.

I. INTERNATIONAL LIVESTOCK RESEARCH INSTITUTE - VIETNAM

ILRI is a non-profit and non-governmental organization with headquarters in Nairobi,
Kenya, and a second principal campus in Addis Ababa, Ethiopia. Its East and Southeast
Asia regional office is located at the International Rice Research Institute (IRRI) in the
Philippines. It has a country office in Hanoi, Vietnam.

It works at the crossroads of livestock and poverty, bringing high-quality science and
capacity-building to bear on poverty reduction and sustainable development.

ILRI’s strategic positioning is to use livestock as a development tool, one that widens and
sustains three major pathways out of poverty: 1) securing the assets of the poor; 2)
improving smallholder and pastoral productivity; and 3) increasing market participation
by the poor.

ILRI conducts research in four themes:
- Targeting and innovations;
- Improving market opportunities;
- Biotechnology to secure livestock assets; and
- People, livestock, and the environment.

ILRI also coordinates the Systemwide Livestock Programme of the Consultative Group on
International Agricultural Research (CGIAR).

Dr. Hung Nguyen-Viet, ILRI Country Representative and Senior Scientist for Ecohealth and Food
Safety, and Ms. Nguyen Le Thanh, Office Manager, welcomed the participants to Vietnam. They stated
that they were glad to be of assistance in organizing the study mission for the PCC officials.

Dr. Hung Nguyen-Viet (left most) of ILRI-Vietnam welcomes the PCC delegates led by Dr. Arnel del Barrio (second to the right), PCC Acting Executive Director, to Hanoi.
Dr. Hung briefed the participants about ILRI’s program as a whole and the activities of its country office in Vietnam. He said that in Vietnam, the main animal commodities are pigs and chickens. ILRI also works with buffaloes but on a lesser scale. The PCC officials’ visit would be a good opportunity for ILRI-Vietnam to map out the best way how it could work on joints programs with PCC.

Dr. Arnel del Barrio, PCC Acting Executive Director and head of the delegation, expressed his deep appreciation for ILRI’s invaluable assistance in co-organizing the study mission. He narrated that he was part of an international event where the participants were taken to Dak Lak Province in Vietnam. In the said event, he saw the excellent forage program instituted by the Vietnamese government. There is rapid growth of the Vietnam livestock industry, specially its dairy industry.

Dr. del Barrio noted that all the participants were eager to learn from Vietnam’s experience and share their experiences as well on buffalo development and management. He cited the learnings they gained from their study mission in Kenya, which was also co-organized by ILRI-Kenya. He said that the dairy hubs in Kenya were transformed as impact zones for PCC in the Philippines.

II. INTERNATIONAL COOPERATION DEPARTMENT, MARD

The International Cooperation Department (ICD) of MARD is the advisory and general management unit under the Minister of MARD in matters of international cooperation and international economic integration in the agriculture and rural development (ARD) sector.

The ICD takes the lead role in coordinating with donors and other relevant agencies and nongovernment organizations (NGOs) in preparing, appraising, and negotiating Overseas Development Assistant (ODA) and Foreign Direct Investment (FDI) projects and programs in Vietnam’s ARD Sector.

The ICD has the following divisions:

- Bilateral Cooperation Division;
- Multilateral Cooperation Division;
- Global Integration and Foreign Investment Division;
- General Affairs Division; and
- SPS Vietnam Office.
Mr. Nguyen Anh Minh, Deputy Director General, and Mr. Le Minh Tuan, Head of the Multilateral Cooperation Division, briefed the participants about ICD and MARD’s programs and activities.

1. **Programs and projects being managed, with support from external stakeholders.**
   The ICD manages several programs and projects that are being supported by external stakeholders. These are: a) International Support Group; b) Rural Water Supply and Sanitation Partnership (RWSSP); c) Partnership for Avian and Human Influenza (PAHI); d) Collaboration on Agriculture and Rural Development (CARD Program); and e) MARD-SIDA Cooperation Program (MSCP-TA).

2. **International cooperation.** Based on the discussions, ICD-MARD is open to collaborating with PCC, especially in terms of diversifying products from buffaloes. In mountainous areas in Vietnam, people still use buffaloes mainly for land preparation, labor, and meat. Vietnam imports meat from Australia (beef) and buffalo meat from India. The study mission is the first stage of cooperation between PCC and MARD. PCC suggests staff exchange and development of common research programs with MARD to produce more buffaloes for both countries.

3. **Universities.** MARD manages state universities, especially those that that mainly offer courses on agriculture, water resources and forestry. The government of Vietnam issued a decision regarding this, considering that the main function of agriculture universities is to educate students, and the agriculture sector takes in the students after they have graduated from the universities. The role of national universities in Vietnam is bigger
than before, considering that they now have more institutes under them. MARD crafts the policies and guidelines, and supervises and manages the universities.

4. **Livelihood programs.** These fall under the rural development function of MARD. The MARD undertakes the following: poverty reduction program, livelihood programs for farmers (e.g., assisting farmers in borrowing money from banks), giving extension guidance to farmers, instituting policies to improve the effectiveness of production at the household level, and providing support for the variety and usage of waste from livestock production. MARD also established a clean water program. The rural development programs of the Vietnam government aim to change the face of the rural areas. At least one million farmers are trained annually on proper care of animals. The aims are to improve the skills of the farmers for agricultural production and for them to eventually be able to take on other jobs besides farming. There are around four million livestock workers in Vietnam.

### III. Various Institutions under MARD

- Department of Livestock Production (DLP)
- National Institute of Animal Sciences (NIAS)
- National Institute of Veterinary Research (NIVR)
- Institute of Policy and Strategy for Agriculture and Development (IPSARD)
- Vietnam National University of Agriculture (VNUA)

Representatives of the abovementioned institutions under MARD briefed the PCC officials about their respective institutions’ activities and programs. They were:

- Mr. Vu Thi Lien Phuong, Finance-Plan Division, DLP
- Dr. Chinh X. Tong, Deputy General Director, DLP
- Dr. Vu Chi Cuong, Vice Director, NIAS
- Dr. Nguyen Thi Lan, Acting President, VNUA
- Representatives from NIVR and IPSARD

The PCC delegates briefed the representatives from the various government institutions about the work and programs of the PCC in the Philippines.

Salient points of the discussions include the following:

1. **Buffalo importation.** Vietnam imports Murrah buffaloes from Thailand and a buffalo milk production program has been instituted. However, the Vietnamese are not that fond of buffalo milk because of its smell.
In the Philippines, the population of swamp buffalo was decreasing because of mismanagement of farmers who castrate the big bulls and so what remained were the breed of the small ones. PCC had a 12-year program funded by the United Nations Food and Agriculture Organization (FAO), which helped in the introduction of new breeds of riverine buffalo. The Philippine native buffalo can produce only two liters of milk per day. When cross breeds were introduced, milk production increased by 300 times. The cross breeds can be milked for about 300 days. In terms of growth, they can grow up to 70 percent higher than the native buffaloes.

In the rural areas in the Philippines, it is common for households in villages to consume buffalo milk. PCC introduced bulls from Bulgaria, then it imported 2,000 heads from Brazil and 3,000 heads from Italy.

Cooperatives can loan bulls from PCC. At present, PCC is undertaking this scheme with 10,000 cooperatives in the Philippines. PCC has 13 centers in the country and these centers have a common program to help smallholder farmers. The loaning of dairy buffaloes to cooperatives started in 2000 and was later expanded. Each farmer can loan one bull. Most farmers now have 5-10 buffaloes. One farmer owns the highest number of buffalo, totaling to 99 heads.

The milk production of buffalo contributed 35 to 40 percent of milk production in the Philippines. PCC trained farmers in breeding, quality control of milk production, milk processing, and value adding. The quality of buffalo milk is higher than that of cattle.

The foremost consumer of carabao milk are the households at the villages. Excess milk is collected and transported to the processing facilities. PCC prevented the slaughtering of female animals. With full government support, PCC has been able to address the major problems in the country in terms of buffalo production.

2. Dairy buffalo in Vietnam. The population of local buffalo in Vietnam is very small because reproduction is very low. In the mountain areas, there is a cultural belief that each household should have at least two buffaloes, one for the mother and one for the father. When one of them dies, a buffalo is slaughtered so that the soul of the dead parent will go to heaven. This belief also contributed to the low population of local buffaloes.

Some issues with regard to dairy buffalo in Vietnam were as follows: a) competition against imported buffaloes; 2) lack of competitiveness of smallholder Vietnamese farmers; and 3) slaughtering of dairy buffalo for meat. Buffalo milk contributes to the nutrition for poor people in Vietnam and the government is trying to position buffaloes in addressing the basic needs of the family, including additional income.
In terms of dairy products in the Philippines, buffalo milk is sold as processed milk, not fresh milk. Niche markets for buffalo milk include cheeses. For liquid milk, consumers still prefer cow’s milk.

3. **Buffalo diseases.** In the Philippines, the foremost problems for buffaloes include *E. coli* and liver fluke. However, the country has been free from foot-and-mouth disease (FMD) without vaccines. Liver fluke is the number one reason for fatality of Murrah buffalo in the Philippines. The biggest problem in combatting animal disease is how to change farmers’ mindsets in dealing with diseases. It is more about educating the farmers to alleviate, if not eradicate, these diseases in buffaloes.

4. **Government support.** The government of Vietnam supports the livelihood of the people, especially those in the rural areas through livestock production programs. Vietnam has vast dairy production with traditional means and it imports animal breeds from very far places.

In the 1990s, the government instituted good policies for supporting dairy farmers. At present, the country now has about 250,000 dairy heads, 40 percent of which belong to big farms and big dairy production and processing companies. Among the 10 big companies in Vietnam, TH Milk is biggest with 45,000 dairy heads and it also has a very modern milk processing factory, the technology of which was imported from Israel. There are 13 milk processing companies in the country, which now export to 36 countries. In 2014, dairy products yielded USD230 million.

At the village level, farmers are given 400 hectares of land to keep their livestock. For beef cattle, 90,000 heads were imported from Austria.

Despite these developments, there is still a need for Vietnam to overcome competition with imported milk powder.

In terms of semen, Vietnam has available frozen buffalo semen. However, producers always compare the quality of local against imported frozen semen. There is a need to import more sex semen and sex embryos. The government must be able to set up policies for establishing a semen center for buffalo and ruminant species so it can contribute more to the livelihood of farmers and their household members.

At the level of the NIAS, the institute plans and designs national research programs in animal sciences, animal breeding and genetics. Besides MARD, funding for the institute’s projects come from the Ministry of Science and Technology, international donors, and provincial cooperation projects. In terms of biotechnology application, NIAS is trying to do cloning for cattle embryo. It has an ongoing project with Japan (cryobank system) and Denmark (model farms for advanced technology and high yield
of pig breed production). One big problem for Vietnam is in terms of controlling diseases – the country’s land borders cannot contain the spread of animal disease, which is quite fast, especially those coming from China.

5. **National Dairy Development Plan.** Vietnam has a plan that focuses on four provinces only: two in the north, one in central area, and one in the south. The fund for this plan is about USD48 million. The plan looks at the dairy industry in a very futuristic way.

**IV. NORTHERN MOUNTAINOUS LIVESTOCK RESEARCH AND DEVELOPMENT CENTER**

The Center is under the National Institute of Animal Husbandry (NIAH) and is located at Thai Nguyen Province.

Dr. Nguyen Van Dai, Center Director, briefed the PCC delegates about their missions. The main mission of the Center is the study and improvement of the ways and scale of livestock production and the structure of livestock in the sustainable agricultural system in the northern mountainous region. Its other missions include the following:
• Study, selection, and conservation of domestic breed of animals (e.g., cattle, poultry, and wild animals) suitable in the region, given the existing ecological environment and local conditions;

• Study on animal feed, nutrition and related issues including processing, producing, conserving, and using grass and agricultural and industrial by-products for animals;

• Study on bio-product and application of biotechnology in animal production to protect domestic animals and their environments.

• Design and organization of animal research and transfer of technology in collaboration with internal and external partners within and outside of the country;

• Provision of consultancy service and trading in animal and poultry breed, animal feed, animal product, and animal production equipment; and

• Crafting recommendations on animal production policies for the government of Vietnam.

The PCC delegates visit a farm household (left) and the Buffalo Research Station of the Northern Mountainous Livestock Research and Development Center (right) at Thai Nguyen Province.

Salient points of the discussions were as follows:

1. **Perception about buffalo.** People say that buffalo milk has a certain smell that makes it not quite palatable to be drank as fresh milk. In reality, buffalo milk has no distinctive smell, as long as the milk is collected properly.
There is also the perception that buffalo milk is tough. This is because buffaloes are most often slaughtered after they are retired from work. Thus, their meat would have lower quality and the price would be lower.

2. **Horse research station.** There are efforts to conserve the native horses in Vietnam, which the Philippines does not have. Most horse preservation efforts in the Philippines are with private people. Native horses may be useful as draft animals.

### V. THMilk Food Joint Stock Company

TH True Milk is a brand of fresh milk in Vietnam, which is under the TH Group that built the very first foundation for developing the fresh milk industry in Vietnam. The TH Group launched a revolution in fresh and clean milk in the local market. To produce fresh milk, the TH Group bought state-of-the-art technology and the technique from Israel to breed milk cows. The group has established a professional network with direct management of two multinational groups, the Afikim from Israel which specializes in breeding milk cows, and the Totally Vets from New Zealand in veterinary medicine. The entire production chain has been formed and implemented strictly under the supervision of TH Group’s professional experts and managers. TH Group has a milk cow breeding farm covering more than 8,000ha. It has been recognized by the Asia Book of Records as “Asia’s biggest centralized dairy farm with hi-tech applications.”

Engr. Ngo Tien Dung, Director of Engineering and Technology Transfer of THMilk, welcomed the PCC delegates.
Relevant points of the discussions were as follows:

1. **Private-public partnership.** The melamine scare in 2007 pushed the private sector and the Vietnam government to develop the dairy industry. The target was to be 50 percent self-sufficient in milk. The TH Group provided a massive investment, and the government supported this through assistance in land acquisition.

2. **Quality of products.** TH Milk products are in tetra packs for longer storage/shelf-life, using technology that comes from Germany. It operates a fresh and clean milk plant, which is well-equipped with modern technology and operates in accordance with ISO9001. The irrigation system in its farms come from the United States of America.

   Its yogurt processing uses probiotics. To reach more consumers, it offers an online shopping site and home delivery service. It also has its own retail store (True Mart).

   The products include liquid milk, sweetened and unsweetened milk, yogurt, and drinking yogurt.

3. **Plant operations.** Foreign experts worked together during the first phase of building up the plant. After six months, it was turned over to the locals. Dairy operations start from production, processing and packaging, to distribution and marketing directly to consumers.

   In terms of housing for cattle, the plant is large, with a cooling system using fan and sprinkler that automatically rotates at 360 degrees. The plant has its own feed mills and formulates its own feed. Most materials are locally produced, while some are imported from the US. The drinking water for cattle has its treatment facility. The plant also has its own waste management system.

   Forage for cattle include Mombasa, maize, rice straw, sunflower, and sorghum. The milking parlor uses the AfiMilk scheme from Israel. Animals listen to classical music at the milking parlor. They are bathed three times a day.
Ultra sex semen is being used for reproduction of animals. These are more expensive but there is bigger chance of conception rate for female cattle.

The plant supports the government of Vietnam through a national school milk scheme, with formulation for school children. It produces fortified milk (with necessary vitamins included) for school feeding program.

VI. NATIONAL AGRICULTURAL EXTENSION CENTER

Dr. Ha Thuy Hanh, Deputy Director General of the National Agricultural Extension Center (NAEC), welcomed the PCC delegates and briefed them about the Center’s programs.

NAEC is a unit under MARD, which implements extension activities in agriculture, forestry, salt industry, fishery, irrigation, agricultural engineering, rural occupations, and rural agricultural services in Vietnam.
Relevant points of discussions were as follows:

1. **Buffalo diseases.** NAEC conducts vaccination campaigns twice a year to help farmers deal with buffalo diseases.

2. **Extension activities.** Each commune has one or two extension workers. NAEC undertakes the following activities for farmers:
   
   a. Construction of demonstration farms, which showcase selected technologies from institutes like NIAS;
   b. Training of trainers on buffalo raising, especially for the northern mountainous areas;
   c. Training on animal nutrition, especially on maintaining good nutrition of animals during winter time;
   d. Establishment of cooperatives and small and medium-scale enterprises; and
   e. Extension through web, television, newspapers and radio.

3. **Artificial insemination.** For cattle, artificial insemination is done with government funds. It is more difficult to find funds for artificial insemination for buffaloes. Most farms have only one or two buffaloes and they can mate directly.

4. **Assistance to universities.** NAEC provides help to VNUA in terms of serving as a research venue for on-the-job training of its students.

**VII. Vietnam National University of Agriculture**

The Vietnam National University of Agriculture (VNUA) is a key and leading national university in human resource training and scientific research in agriculture and rural development, becoming more and more diversified in fields of study with ever increasing prestige among the higher education system of Vietnam. Its establishment dates back to the founding of the University of Agriculture and Forestry on 12 October 1956. Since its foundation, the University has been renamed several times. VNUA is now known as the leading university among the community of agriculture, forestry and fishery universities in the country. In March 2014, the Hanoi University of Agriculture (HUA) was officially transferred from the Ministry of Education and Training to the Ministry of Agriculture and Rural Development with a new name: Vietnam National University of Agriculture.

PCC delegates were met by more than 20 faculty members and staff of VNUA, led by Dr. Nguyen Thi Lan, Acting President, Dr. Nguyen Thi Bic Thuy, Director, Office of the International Cooperation, and Dr. Trinh Dinh Thau, Dean of VNUA’s Faculty of
Veterinary Medicine and current President of the SEARCA Fellows Association in Vietnam.

Discussions centered on possible collaborative activities between PCC and VNUA, which include initiatives in research and development, staff and student exchanges, and workshops and training courses. They also explored possible collaborations on projects regarding mitigation of greenhouse gases emissions.

Dr. del Barrio and Dr. Lan signed a memorandum of understanding for these collaborations to push through.

Dr. Arnel del Barrio (center left), PCC Acting Executive Director, and Dr. Nguyen Thi Lan (center right), Acting President of VNUA, sign a memorandum of understanding for possible collaborative activities on research and development, student and staff exchanges, and workshops and training courses between PCC and VNUA.

Insights and Recommendations

1. Policies and regulatory management

Vietnam has specifically integrated rural development in agriculture when the government established MARD. A university, VNUA, is also under MARD. For VNUA, the purpose of its research and development activities are anchored on MARD’s mandates and thrusts. VNUA changed its research directions and aligned them with the needs of the industry because of the policy of the Ministry of Education and Training (MOET) and MARD. As part of its policies, MARD has identified four dairy zones in the country.
Embedded in the MARD mission is to ensure the development and assistance to farmers through its research institutions or scientists to address industry problems. Priority researches on agriculture in universities must address the industry.

This system is not yet happening in the Philippines. There are no universities under the Department of Agriculture (DA). However, 10 centers of PCC are based in universities and there is a need to strengthen partnership with them. PCC’s research for development as a strategy to implement relevant, industry focused researches has to be embedded in the university R&D priority agenda. Likewise, PCC aims to collaborate with other R&D institutions by inviting scientists to address emerging livestock diseases, send graduate students for post-doc programs to enhance research capability to address industry gaps.

The National Dairy Development Plan entailed the zoning of locations for dairy development across the country. This would be a good example to follow for the Philippines.

2. Public-private Partnerships

MARD encourages public-private partnerships (PPPs) to develop the country’s dairy industry. It aims to increase the number of dairy cows from 250,000 to 500,000 in five years to produce one million metric tons of milk and to support 38 percent of the domestic supply. MARD provided the needed policy support like the acquisition of land for the dairy plant of THMilk. Many hectares of land in Vietnam are state-owned. In the Philippines, this is difficult to see in the immediate future. There is a need for the DA, through PCC and the National Dairy Authority (NDA), to develop a long-term comprehensive dairy development program to increase local production from 1 percent to 10 percent through private investments.

There are many PPPs in the Philippines but majority are in infrastructure. Vietnam has high tariff in imported milk (15%) compared with the Philippines (6%). The dairy industry in Vietnam is well-protected.

3. Buffalo population

The buffalo population in Vietnam is almost stable, like in the Philippines. The government of Vietnam supported the breeding of buffaloes through production of sex semen of Murrah buffaloes for bigger sizes. Capacity building on extension and animal health training programs are integrated and are coordinated with the communes. Farmers in Vietnam allow more reproduction of buffaloes for slaughter.
In the Philippines, there has been a move to re-impose the carabao slaughter ban and this has been submitted to the Senate for consideration. PCC’s position on this is that this may be counter-productive. What is needed is to support better production for the farmers to raise more buffaloes to increase their income from meat and milk of buffaloes.

Most of the milk in Vietnam comes from dairy cattle. The perceptions of failure in dairy production from buffalo in Vietnam may be due to lack of support, funding, or poor perception. Buffalo dairy is perceived as uneconomical due to low milk production and poor reproductive efficiency. In the Philippines, the government gives proper support to buffalo. Until now, PCC receives reasonable support from the government, backed up by existing law to support rural development.

The Vietnamese government seems to be lax in terms of trade. It allowed the importation of live animals and export of meat to other countries like China, Laos, and Cambodia.

Due to the FMD-free status of the Philippines, import of live animals is strict and puts pressure on local stocks to support demand. There is a need to allow private processors to continue importation of buffalo meat from India to lessen pressure on local stocks.

4. **Zoonotic diseases**

Fasciolosis has become a zoonotic disease in Vietnam. The integration of cattle and vegetable production, and eating raw vegetables may be the mode of transmission of this parasite to humans. Majority of the pasture areas in the Philippines is infested with liverfluke and buffalo herd size in each household is increasing. To preempt the incidence of liverfluke also becoming a zoonotic disease, PCC should immediately undertake preliminary research on this aspect as part of its food safety measures.

5. **Information dissemination**

Vietnam’s experience shows that radio is the best means of communication for disseminating information on agriculture and rural development. In the Philippines, the focus is now more on using high-end technologies like mobile phones. The AM radio stations are now being neglected. PCC centers located in universities are given air time on radio stations in the universities. For example, the AM radio station at the Central Mindanao University (CMU) only asks for tokens in exchange for air time. PCC centers should take advantage of this arrangement to be able to reach more farmers who raise buffaloes for milk and meat.
6. Future Collaborations

Future collaborations between PCC and the institutions visited in Vietnam may include the following:

a. Staff and technology exchange with regards to buffalo milk processing.

b. Research on genetic characterization of buffaloes, liverfluke, reducing environmental pollution, buffalo development, improving reproductive efficiency using hormones, parasite control, climate change, and other areas.

c. The PCC technical team may visit the TH Milk farm and plant to see actual application of the best practices in dairy production, and innovations and technologies to manage heat stress in dairy animals under tropical conditions.

Evaluation

At the end of the study mission, participants (see Attachment 3 for list of participants) filled out summative evaluation sheets. The evaluation sheet contains statements on general evaluation of the study mission, interpersonal relationships, logistics, and content. It used a Likert-scale, where 1 meant very poor, 2 was poor, 3 was average, 4 was good, and 5 was very good.

In general, the participants favorably evaluated the study missions in terms of its relevance to their current job position, their overall participation, the achievement of the study mission’s objectives, and totality of the study mission experience, and relevance to their current job positions (see Table 1).

Overall, they also favorably viewed the logistical preparations of the study mission and their interpersonal relationships (see Table 1).

The participants gave the lowest ratings on learning materials received, probably because some of the materials given in the institutions visited were written in the Vietnamese language (e.g., NAEC). Some of the institutions visited did not provide materials but relied on oral briefing/orientation (e.g., Department of Livestock, MARD). Collectively, however, the rating is good for the components that directly influence the study mission’s content.
Table 1. Participants’ evaluation of the study mission by component.

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>RATING</th>
<th>AVE.</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Very Poor</td>
<td>Poor</td>
</tr>
<tr>
<td>GENERAL EVALUATION</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relevance to current job position</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Overall participation of the participants in the study mission</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Overall achievement of the study mission objectives</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Totality of study mission experience</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Overall design of the study mission</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Organization and arrangement of the activities</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Duration of the study mission</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>INTERPERSONAL RELATIONSHIPS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Your relationship with co-participants</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Your relationship with the study mission management group</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>LOGISTICS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accommodation</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Transport service arrangements</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Time management</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>CONTENT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Briefing and orientation on projects/institutions visited</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Amount of information gained</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Group discussions and workshops</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Subject matters discussed in relation with the study mission objectives</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Learning materials received</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>
As a whole, the participants felt that the study mission was very fruitful and educational. Participants suggested the following for consideration in future study missions of PCC:

1. Follow up participants of the study mission with regards to their application of the knowledge they acquired in Vietnam to their work stations; and

2. Include PCC staff directly working with the farmers and their animals to be involved or serve as participants of the study mission.

Overall, the participants commented that the “study mission was very fruitful and educational.” They thanked the study mission management group and SEARCA for facilitating the activities.
ATTACHMENTS
### ATTACHMENT 1. FINAL TRAVEL ITINERARY

<table>
<thead>
<tr>
<th>DATE</th>
<th>VENUE</th>
<th>ACTIVITY/IES</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 November (Sunday)</td>
<td>Noi Bai International Airport</td>
<td>Arrival of participants from Bangkok</td>
</tr>
<tr>
<td>9 November (Monday)</td>
<td>ILRI Vietnam Office</td>
<td>Meeting and briefing with ILRI-Vietnam team</td>
</tr>
<tr>
<td></td>
<td>International Cooperation Department, Ministry of Agriculture and Rural Development (MARD)</td>
<td>Orientation and briefing about ICD, MARD</td>
</tr>
<tr>
<td></td>
<td>Army Hotel</td>
<td>Meeting with Vietnamese institutions:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Department of Livestock Production (DLP)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• National Institute of Animal Sciences (NIAS)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• National Institute of Veterinary Research (NIVR)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Institute of Policy and Strategy for Agriculture and Development (IPSARD)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Vietnam National University of Agriculture (VNUA)</td>
</tr>
<tr>
<td>10 November (Tuesday)</td>
<td>Thai Nguyen Province</td>
<td>Visit the Northern Mountainous Livestock Research and Development Center</td>
</tr>
<tr>
<td>11 November (Wednesday)</td>
<td>THMilk Food Joint Stock Company</td>
<td>Briefing at the office of Engr. Ngo Tien Dung, Director of Engineering and Technology Transfer</td>
</tr>
<tr>
<td></td>
<td>National Agricultural Extension Center (NAEC)</td>
<td>Briefing at the office of Dr. Ha Thuy Hanh, Deputy Director General</td>
</tr>
<tr>
<td>12 November (Thursday)</td>
<td>Vietnam National University of Agriculture (VNUA)</td>
<td>Briefing and visit to the university and its animal health research laboratories</td>
</tr>
<tr>
<td></td>
<td>Golden Rice Hotel</td>
<td>Synthesis Workshop</td>
</tr>
<tr>
<td>13 November (Friday)</td>
<td>Noi Bai International Airport</td>
<td>Departure of participants from Hanoi</td>
</tr>
</tbody>
</table>
ATTACHMENT 2. LIST OF EXPERTS FROM INSTITUTIONS VISITED

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