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Report on field visit to Vietnam

Duration: 1st–10th August 2023

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Objectives of the field trip:

The aim of the Asian Chicken Genetic Gains (AsCGG) project in Vietnam is to test and avail high-producing, farmer-preferred poultry genotypes to enhance smallholder chicken productivity (eggs and meat yield). Four genetically improved candidate strains have been imported for performance evaluation under on-farm and on-station conditions. The TPGS team at ILRI Addis and East and Southeast Asia Office have been providing the necessary technical and administrative support in the identification of candidate strains and their importation by the National Institute of Animal Science (NIAS).

The present field trip was planned to meet the following objectives:

- train staff of partner institution and performance data collection using ODK Collect;
- get a better understanding of the poultry production system and experimental facilities to design the performance tests under on-farm and on-station conditions;
- engage relevant authorities and key stakeholders to enable smooth project implementation; and
- have in-depth discussion about AsCGG planned activities and reach a common understanding and to take adaptive measures.

Outcomes of the field trip:

I. On-farm Chicken Performance Test (OCPT) training:

Design of OCPT:

Discussion was held to finalize the design of OCPT. The sampling framework is presented in **Annex 1**. One introduced and one local strain or ecotype will be assigned per household.

Candidate breeds

- The four improved breeds (strains) that will be introduced in on-farm households are Sassoli Red, Tetra H, Tetra Tint, and Novogen Tint). Three local ecotypes will be tested across the three provinces, namely, Ri Lac Thuy in Hoa Binh, Mong in Ha Nam, and Ri Lac Son in Quang Binh province. Brooded chicks of local ecotypes will be issued to farmers at similar age with the improved introduced (i.e., at 8 weeks or 56 days-of-age). Improved introduced and local introduced chickens at a household will be compared on productive performance and socio-economic indicators. For that purpose, responses will be collected

disaggregated by flock type (e.g., inventory, entry, exit, body weight, egg size/number, egg use/sale/consumption, cost of feeds, cost of health/vaccination/treatment). Egg performance data will be collected biweekly (unlike other TPGS countries where it is being collected weekly). This is facilitated by existence of paper data collection formats in every household in Vietnam which reduces the reliance on farmers' recall to get the information.

Selection of farmers

Villages have been identified and farmers selected in Hoa Binh province. However, the selection of households and villages in has not been completed in Ha Nam and Quang Bing provinces. Gender and income level will be considered in selection of households in a village. A draft site selection protocol has been shared the country team. Participating farmers of OCPT may constitute baselined and non-baselined households.

Flock management

Identification of birds using wing-tags has not been found necessary by the country team and hence will not be done. This implies that individual birds will not be tracked for productive performance or health status. Considering the low number of replications (households) receiving a strain of chicken, attention shall be paid to make management of flocks uniform across households (in terms of feeding, health interventions, housing, other management activities). Minimizing heterogeneity of management improves our statistical power. No performance data will be collected from existing household flocks (kept by the farmers even before the project intervention).

Vietnamese government regulations demand that 90% of the OCPT cost at a household level is covered by the project (i.e., to buy feeds and health for each household). In return, farmers cover the cost of labour, electricity and housing and volunteer to participate in longitudinal data collection by providing appropriate responses to enumerators.

Data capture with ODK Collect

The training of trainers using *ODK Collect* has been done. Translation of data collection tools into Vietnamese is underway (about 60% of the questions on ODK tools already translated). During the training, staff from NIAS and ILRI East and southeast Asia office served as translators. The training covered various topic including identification of performance testing sites (PTSs), developing the sampling framework, assignment of breeds, ethical conduct and informed consent, risks and benefits to participating households, household registration, flock registration, and data collection modules. The modules comprised sections on household labour allocation, livestock inventory, access to housing and water, flock inventory, performance of chickens (in terms of body weight, egg number, survival), feeding, marketing information (sales, consumption), and likability (importance of traits and preferences by farmers). Body weight will be measured individually on a random sample of 30 birds per sex per flock. This is unlike the approach followed in other TPGS countries where birds have been identified individually but growth performance data are taken at

flock level. Socio-economic data collected at various nodes of the value chain (e.g., brooding, chick distribution, flock health management and feeding, marketing) will be used to develop business models aiming at improving income, achieving better nutritional outcomes, scaling out of poultry technologies, and sustaining impact of the project intervention.

Figure 1. The training of trainers for OCPT using *ODK Collect* at NIAS

II. Field visits to OCPT sites

During the on-farm visit of farmers and key poultry value chain actors in Han Nam province, the joint ILRI and NIAS team met the representatives of local chicken association. The team obtained useful information regarding opportunities to conduct the test (e.g., interest of farmers and stakeholders, access to input and support services). Representatives of the Department of Agriculture and Rural Development (DARD), Sub-department of Animal Health (SDAH) under DARD and Economic Department of Duy Tien town reiterated their support to the AsCGG intervention in their area.

Figure 2. Meeting with farmers and key poultry value chain actors who take part in OCPT in Han Nam province.

A private brooding farm raising chicks before the distribution to farmers was also visited. The farm has an incubator with a capacity to set and hatch 20,000 eggs. It has also physical facilities for growing chicks. The ILRI-NIAS team observed that the chicks of the four improved strains are being grown in excellent condition; they show uniform growth and overall mortality did not exceed 3 per cent. All the necessary biosecurity measures were also put in place to minimize losses.

Figure 3. Visit at a private brooding farm raising chicks for distribution to farmers in Han Nam province.

III. Visit at ILRI, ESEA Office

ILRI-Addis researchers held a meeting with the gender team at ILRI's Eastern and Southeast Asia Office. The OCPT data collection and farmer selection tools were also shared to get their feedback. Consensus was reached on the need to adequately consider women in all on-farm activities (e.g., identification of target households, creating access to input and support services). More discussions will be made to revise the tools from gender perspective.

Figure 4. ILRI-Addis researchers held a meeting with the gender team at ILRI's Eastern and Southeast Asia Office.

The training of trainers using *ODK Collect*

IV. On-station Chicken Performance Test

The performance of all four improved breeds (Sassoli Red, Tetra H, Tetra Tint, and Novogen Tint). that will be introduced in on-farm households are also going to be evaluated under experimental conditions on-station.

The Centre for Bee Research and Animal Technologies, where the on-station performance testing of the improved strains will be done, was visited. The Centre has the necessary physical facilities to conduct the test.

Pen arrangement: It is essential that strains are assigned at random to different pens to reduce the effect of housing (e.g., space, orientation to the sun). The chicks will remain unsexed until end of 8 weeks. Between week 8 and 20, their individual performances (egg and body weight) shall be measured separately for the two sexes. As of week 20, flocks of male birds will exit and performance data collection will continue on females until end of 72 period. Detailed data collection protocols are already developed and available at NIAS.

V. The way forward

The following activities will be accomplished in the coming weeks:

- The sampling framework will be finalized considering gender and income levels;
- Enumerators will be recruited and trained ODK tools by the country team to start the OCPT;
- Start on-station data collection parallel to OCPT; and
- Find ways for complementarity and synergy between AsCGG and SAPLING to achieve synergy between the two initiatives of TPGS.

Annex 1. Sampling frame of OCPT

Province	Strain/ecotype	Replication (No. of HHS)	Birds/HH	Total no. of birds
Hoa Binh	Sassoli red-introduced	5	50	250
	Tetra H-introduced	5	50	250
	Tetra Tint-introduced	5	50	250
	Novogen Tint-introduced	5	50	250
	Total introduced			**1000**
	Lac Thuy-local	20	50	1000
Ha Nam	Sassoli red-introduced	5	50	250
	Tetra H-introduced	5	50	250
	Tetra Tint-introduced	5	50	250
	Novogen Tint-introduced	5	50	250
	Total introduced			**1000**
	Mong -local	20	50	1000
Quang Binh	Sassoli red-introduced	5	50	250
	Tetra H-introduced	5	50	250
	Tetra Tint-introduced	5	50	250
	Novogen Tint-introduced	5	50	250
	Total	**20**		**1000**
	Lac Son-local		50	1000

Annex 2. List of participants of OCPT training with ODK Collect

N0	Name	Gender	Organization
1	Trinh Duy Linh	M	Department of Rare Animal and Biodiversity
2	Tran Thi Hien	F	Lien Ninh Research Centre
3	Nguyen Thi Thanh Van	F	Department of Animal Genetic and Breeding
4	Dao Thi Bich Loan	F	Department of Animal Genetic and Breeding
5	Pham Van Son	M	Department of Animal Genetic and Breeding
6	Nguyen Viet Hoi	M	Lien Ninh Research Centre
7	Nguyen Thanh Tu	M	Lien Ninh Research Centre
8	Tran Trung Thong	M	Department of Animal Genetic and Breeding
9	Pham Van Gioi	M	Department of Animal Genetic and Breeding
10	Ngo Thi Le Quyen	F	Department of Rare Animal and Biodiversity
11	Nguyen Cong Dinh	M	Department of Rare Animal and Biodiversity
12	Nguyen Pham Trung Nguyen	M	Department of Rare Animal and Biodiversity
13	Vu Chi Thien	M	Department of Administration
14	Ninh Thi Huyen	F	Department of Animal Nutrition and Feed