



Observation Report and Recommendation on the Field Activity in Luang Prabang and Sayaboury

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1. Introduction

1.1 Background

Most of the staff of National Animal Health Center, Vientiane, have participated in the training courses in Thailand and Malaysia through the Animal Disease Control Project and studied a variety of diagnostic techniques for major animal diseases. However, it seems that the center staff cannot fully utilize these techniques for diagnosis due to the paucity of the samples brought into the center. This is the biggest inhibiting factor for improvement of the function of the center, and considered to be caused by the poor animal health services provided for farmers. They do not even inform any outbreak of animal diseases since they receive no benefit or service even though they do so.

On the other hand, the Forestry Management and Community Support Project (FORCOM) has been under implementation in the north of the country since February 2004. The Project focuses on the improvement of forest management and production through the activities which generate farmers' income. Among those, livestock rearing has been given the top priority proposed by the villagers of the project sites.

Accordingly, providing animal health service in the FORCOM project sites was thought to be the best choice for us to break the current situation of the animal health service system in the field.

1.2 Purpose of assignment

For the very first time of our visit to the sites the following points were set to focus on.

- i) To observe the field condition and current situation of animal health services in the villages
- ii) To interview the farmers for the information on recent animal disease outbreaks and rearing conditions of animals
- iii) To take blood and fecal samples to study endemic diseases in the villages
- iv) To discuss the improvement of animal health services for farmers with PAFO, DAFO and FORCOM Project staff

2. Narrative summary of activity

Dr. Bounmy Xaymountry (chief of Epidemiology Section) and Dr. Bountom Khounsy (Chief of Veterinary Unit, Department of Agriculture and Forestry, Luang Prabang Province) joined us for the field activities.

We visited the following 3 villages and carried out interview and discussion with farmers, and sampling (mainly blood and feces) for the disease surveillance. Blood film was prepared in the field, one ml of blood mixed with anti-coagulant, and the rest stored for serum. In Namon Village one chicken with a neurological symptom was autopsied and related organs sampled for histopathological examination.

The samples collected were processed at the Laboratory of Department of Agriculture and Forestry, Luang Prabang. Sera were separated from the blood samples and stored for serological examinations. Hematocrit (packed cell volume: PCV) values were measured using the blood samples with anti-coagulant, after which the buffy coat of the hematocrit tubes examined under microscope for trypanosomes.

Serum samples and blood films were divided into 2 portions and each sent to National Animal Health Center, Vientiane, and National Institute of Animal Health, Bangkok. The fecal samples were examined for internal parasites at the Laboratory, Luang Prabang.

In Bangkok, blood parasites were examined observing the blood films. The serum samples were tested for antibodies to *Brucella* sp. (buffalo, cattle and goat sera), *Leptospira* sp. (buffalo, cattle, pig and goat sera), classical swine fever (CSF, pig sera), Newcastle disease (ND, chicken and duck sera) and avian influenza (chicken and duck sera).

3. Observation Report

3.1 Namon Village (Sayaboury Province)

There're 260 households in the village with 528 buffaloes, 38 cattle, 456 pigs, about 20 chickens, 60 goats and 2 elephants.

Lately the village experienced 3 disease outbreaks. The first outbreak occurred between 18th and 28th March 2005 and 15 buffaloes and 1 cattle died. The tentative diagnosis according the clinical signs and epidemiological information was haemorrhagic septicaemia (HS). Subsequently 10 pigs suffered from the clinical signs similar to classical swine fever and died eventually over the last 2 months. At almost the same time, most of the chickens (over 6,000 heads) in the village died of ND but ducks and turkeys were not affected. No report or specimens were submitted to the laboratory for diagnosis.

Samples were taken from the following numbers of animals: 4 cattle, 7 buffaloes, 3 pigs, 2 ducks and 1 chicken.

3.2 Pongdong Village (Luang Prabang Province)

There're 106 households in the village with 115 buffaloes, 48 cattle, about 100 pigs, 16 goats, about 2000 chickens and 1000 ducks.

The farmer told us that 7 buffaloes died last year after grazing pasture contaminated with herbicide but no outbreak of HS or FMD has been observed this year. There were histories of outbreaks of ND in chicken (about 300 died) and CSF in pigs (about 20 pigs died in April this year) though not confirmed in the laboratory.

Some farmers complained that young buffalo calves under 3 months old always died of *Toxocara vitulorum* (roundworm) infection as they observed the parasite coming out from the anus of infected calf. The farmers didn't know any kind of deworming drug or program to treat their animals. Young chickens seemed to suffer from eye infection (pus in the eye) caused by some bacteria. We also noticed that one cattle had skin lesion similar to demodectic mange infection (small nodule with pus inside).

Samples were taken from the following numbers of animals: 7 cattle, 3 buffaloes and 4 pigs.

3.3 Hat Houay Village (Luang Prabang Province)

There're 430 people in 89 households with 100 buffaloes, 126 pigs, 44 goats and 1585 poultry.

One 4-year-old buffalo died close to the riverside in May 2005 but the cause was unknown. There was an outbreak of ND in chicken and nearly all chickens in the village succumbed in May this year.

The village is surrounded with mountains that form dense forest close to the big river. This is a good breeding site for blood suckling flies such as *Tabanus* sp. and a considerable number of them were seen sucking blood on large- and medium-size animals during our sampling activities. A farmer told us that sick buffaloes showed clinical signs of conjunctivitis, stiffness and lameness, and several of them aborted (at mid-term pregnancy) at the beginning of the rainy season. These clinical signs are similar to those of trypanosome infection (*Trypanosoma evansi*), which usually coincides with the high density of tabanid flies, the vectors of the parasite. Other diseases in buffaloes noticed from the interview were eyeworm (*Thelazia* sp.) and roundworm infections in young calves.

Samples were taken from the following numbers of animals: 3 buffaloes, 2 pigs, 6 goats (only feces from 2 of them) and 3 chickens.

3.4 Discussion with FORCOM staff

The individual animals newly introduced to the village through the Project should be registered with ear tags, and essential vaccination programs for HS, CSF and ND, and other animal health services such as deworming program ought to be implemented at least for those registered animals.

It was recommended that the Project provide "white board" to each participating household to use as memorandum to record their animal population and the events that occurred to their animals. The FORCOM staff should collect these data once a week or whenever they visit the village. This would serve as reminder for farmers and data source for the staff.

4. Recommendations

4.1 Animal health service system

The existing system has not been functioning satisfactorily. The roles of the field staff (PAFO, DAFO and VVW) should be defined clearly and necessities such as transportation and communication means provided by the related authority so that the information on disease

outbreaks can be accumulated at the responsible department and samples sent to NAHC for confirmatory diagnosis.

4.2 Extention program for the field staff

The field staff (DAFO and VVW) ought to be trained on history taking and sample collection skills. Especially, specimens need to be collected and handled properly otherwise diagnosis cannot be made in the laboratory. Disposables such as syringes and specimen containers are to be supplied.

4.3 Extention program for farmers

The farmers should be given the information on major endemic diseases (such as HS, ND and CSF) so that they can readily inform the local field staff whenever they suspect a disease outbreak in the village.

4.4 Vaccination program

The vaccination programs recommended for different animal species are shown in the Table. However, these programs totally depend on the types of the products (live, killed, inactivated, etc.), therefore, the vaccine composition should be verified with the leaflet provided by the local vaccine production unit in LAO PDR. Normally, the vaccination program optimal for the product is recommended by the supplier.

Table. Typical vaccination program for different animal species

Animal species	Vaccine for	Primary injection	2nd injection	Booster
Chicken	ND	3 days old	3 weeks olds	3 months old
Piglets born from vaccinated sow	CSF	45 days old	2-3 months old	
Piglets born from non-vaccinated sow	CSF	30 days old	2-3 months old	
Cattle	HS	6 months old	Every 6 months	
Buffalo	HS	6 months old	Every 6 months	

4.5 Deworming drugs

Deworming drugs such as albendazole, levamisole or ivermectin for treatment of roundworm and GI-nematode infections, and triclabendazole for liver fluke (Fasciolosis) should be available at the village level along with deworming programs for their animals (e.g., buffalo calves should be dewormed for the first time at 3 weeks old and repeated at 6 weeks old).

4.6 Regional Laboratory

The regional diagnostic laboratory in Luang Prabang became well equipped by the support of the EU Project. However, it needs additional budget for operation (electricity) and maintenance especially in bacteriology section. If bacterial isolation is possible from organs of dead animals, diagnosis on some bacterial diseases such as HS can be made locally thus quickly, which benefits farmers as well as the field staff.