Social-economic Impacts of HPAI Outbreaks and Control Measures on Small-scale and Backyard Poultry Producers in Asia

FINAL TECHNICAL REPORT

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1. Background

The avian influenza is becoming as one of today's most serious concerns to human health, livestock production, agricultural and rural development and further to the national, regional and the world social and economic development from different perspectives, particularly in Asia. Although the measures have been taken to tackle the problem by many countries, such as Thailand, China, Indonesia and Vietnam in the fields of poultry vaccination, health protection for human being and physical interventions in poultry farms, the difficulty in preventing rapid transmission of the virus, the cost of prevention and control measures and the direct loss in poultry production and related market chain process could still lead to a significant consequence to the country's economic development. During 2004-2005, 1.5% GDP lost in Thailand and 0.3-1.8% GDP lost in Vietnam was estimated due to the outbreak of the disease. Giving the context of the dominant importance of agricultural sector, particularly poultry production in Southeast Asia including China, the outbreak of avian influenza had made a serious impact on rural development in general and on poultry farmers' livelihood in particular.

Under the framework of the IDRC-sponsored project on "Socio-economic Impacts of HPAI Outbreaks and Control Measures on Small-scale and Backyard Poultry Producers in Asia", a social and economic research group was set up composing of participants from China, Indonesia, Thailand, Vietnam and Cambodia. The group common research outline was finalized during the workshop in Beijing on May 2006, and was improved for funding in 28th March 2007. The research is expected to be completed within 2 years.

Research Problems

Giving the context of the dominant importance of poultry production in small farmer households in Southeast Asian countries, the outbreak of avian influenza had made a serious social and economic impact on backyard and small poultry producers. In addition, the small and the backyard producers are the most vulnerable groups affected by avian influenza (AI) outbreaks. The government in these Asian countries has also put a lot of efforts to control the spread of the disease through a variety of measures, such as culling, movement control, vaccination, etc. The control measures that put in place may have a larger social-economic impact on the backyard and small producers than the disease itself.

Without the understanding of the social economic factors related to AI issues, the viability and the effectiveness of AI control measures will be affected. Therefore, there is a need to understand the social-economic impacts of the Avian Influenza outbreaks and control measures on the backyard and small producers, so as to facilitate the process of developing fair and viable intervention policies of AI control.

Research Questions

In summary, the backyard and small poultry production are important to rural livelihoods and welfare, and these producers are most vulnerable to AI and AI control strategies. The current government AI control policies and strategies are based on epidemiological aspects of disease control, but not based on information of the social economic impacts on the backyard and small poultry producers. To be viable and effective, AI control strategies should take the social-economic perspectives into consideration.

Base upon the above rationale, this research will be guided by three research questions:

- How do farmers cope with AI and respond to different control measures?
- How are farm households' livelihood and wellbeing affected by AI and AI control measures?
- How the design of AI control measures can be improved from social economic perspectives?

Objectives

The overall objectives of the research is to provide useful information to the development of the more appropriate and effective control strategies and interventions to cope with AI, in favor of small scale and backyard poultry producers, by analyzing the socio-economic impacts of AI outbreaks and AI control measures on backyard and small producers.

The specific objectives of the Project are as follows:

- To assess and measure how the livelihoods and well being of backyard and small producers are affected by AI outbreaks and different control measures;
- To understand how backyard and small producers respond with respect to farm and market practice to AI outbreaks and different control measures; and

- To mitigate adverse social and impacts of AI and AI control measures by analyzing the implications for the design and implementation of control measures and other interventions

2. List of Activity in 1st year

2.1. Setting up small steering committee in each country

The steering committee in Vietnam has been set up in June 2007, includes of 8 persons, who are government officials from Ministry of Agricultural and Rural Development (MARD), Ministry of Health (MOH), Ministry of Science and Technology (MOSAT) and Vietnam Poultry Association (VIPA).

Members of the Steering committee provide insights on the needed information for policy makers and in turn, to use and disseminate the research findings. Their feedback and suggestions are very important for policy recommendation of the project.

2.2. Secondary data collection

The research team has collected secondary data on total amount of dead and stamped out poultry throughout the country from 2004 to 2007. The first outbreak was from the end of 2003 to the first months of 2004 and it had the largest number of AI poultry in comparison with other AI incidence year. At that time, there were 56/64 provinces had been affected AI. Based on the data, the research team chosen three provinces which are representatives for high, medium and low AI incidence provinces.

2.3. Cross-country methodology workshop in Beijing from 24-28 September 2007:

The Vietnam's research team attended the Inception workshop for all Socio-Economic Impact Group at the College of Humanities and Development, China. The workshop was hosted by the College of Humanities and Development, China Agricultural University from 24-28 September 2007.

The overall objective of this workshop was to develop a common methodological framework, which will be applied in the four project countries. An agreement on study methodologies was achieved in term of study sites selection, sampling procedure, data collection instruments, and questionnaire design and data processing approaches.

2.4. Pilot test of questionnaire

A pre-test for 20 households was conducted in January 2008 in Ha Tay province. Based on the results of the pre-test, the questionnaire has been revised to meet particular situation of rural area of Vietnam. Refining of questionnaire.

3. *Activities in 2nd year*

3.1. Full scale survey

The full scale survey using questionnaire was conducted in 3 three provinces. They are: Long An, Nam Dinh and Quang Ninh, which are representatives for high, medium and low incidence areas respectively. The full scale survey was begin in March and finished in the middle of June 2008.

3.2. Qualitative information collection

Besides using quanlitative information, the research team used qualitative research methods like group discusion for collecting information about some outstanding curcumtances, that could not be interpreted by qualitative information.

Group discussion was carried out in 4 communues in each province. Each of the discussion had 3 groups, each group had 6 - 7 people, who are involve in producing or trading poultry in the commnue. The contents of group discussion are:

- Identify problem tree: economic and social impacts caused by AI
- Ranking the problems
- AI Control and Prevention measures tree
- Ranking the efficient measures
- Find out the farmer's difficulties in poultry production after AI outbreak

Besides, the research team also interviewed provinces and districts leaders. In each communes, commune leaders, veterinary staff and Chaiman of Cooperation were also interviewed to have different evaluation on the influence of AI.

3.3. Data insert and analysis

Data Entry program and Process was designed when questionare was finished. Data from survey is entered by the CSpro program. We also do logics checking sothat data was entered exactly like in the questionare & repaired interviewer errors.

Some preliminary results were presented on:

- General information of household
- Impact of Ai on household's life and economy
- Impact of Ai on Social impact
- Responses to AI outbreak and control measures

3.4. Cross-country analytical review

Cross-country analytical workshop was organized in Thailand from 14th- 17th July 2008. The overall objective of this workshop is to share the data analysis and basic findings, and develop a common report framework for 4 project countries.

In the workshop, each team presented their project progress, basic findings description such as comparison the changes in farmer livelihood, financial capital, wellbeing, social capital… after AI outbreak. The workshop also had an agreement on report outline.

3.5. Validation and feedback with communities

After getting the preliminary findings and suggestions, the research team organized validation and feedback activities with some surveyed communes. These small workshops had purposed to share with the communities about the findings and proposed suggestions and measures. The research team got the feedback and confirmation from the communities that results of the research reflected truly how their livelihood was affected by AI.

Participants were farmers who had destroyed or infected poultry and represented for different scale of poultry production households, chairman of commune, commune veterinary, commune staff who participated in fighting campaign against AI.

3.6. Draft report

Draft report was finished before the final workshop. However, the draft report is being improved and will be completed in September 2009.

3.7. Final workshop in Bali

The workshop was held in Bali during April 1-5, hosted by Indonesia Research team, the Center for Agriculture Socio Economics and Policy Studies (ICASEPS). The purpose of this workshop is to share the research findings in four countries, make comments and suggestions to each other, draw the common conclusions and suggestions, develop communication strategies, and plan for the follow up actions.

4. Activities in the 6 extra months

4.1. Developing new agreed model in Beijing to measure impact

New model will be econometric model on farmers' willingness of taking all kinds of control measures. All teams agreed to use LOGIT or PROBIT model and required to make full explanations after getting the results of regressions. The concrete variables can be different in four countries in terms of available data.
Some variables are suggested to include in the model:

- Dependent variable (variables in the left of model)
  - Farmers' willingness of taking all kinds of control measures such as stamping out, vaccination and disinfection.
- Independent variable (variables in the right of model)
  - Basic information of household
  - Family size
  - Age of household head
  - Sex of household head
  - Education level of household head
  - Wealth of household (Asset such as house and land or income)
  - Main source of household income
  - Production Scale of poultry (Dummy variable)
  - Policy variable
  - Whether got the compensation or not
  - Farmers' Awareness on control measures
  - Whether infected or not
  - Village dummy variables

4.2. Repairing and finalizing the Difference in differences model

The difference in differences model is used to measure impact of AI on total income and income from poultry of poultry production households.

The idea of this approach is using a control group that did not apply the culling measure as a counterfactual to the treated group. The method uses two years of data, one before and one after the intervention, is employed to tackle this problem by taking into account both changes created by time and different initial conditions.

4.3. Finalizing country report

Reorganizing country report according to the report outline agreed in the Beijing meeting 6/2009. The final country report was completed and sent to other country teams and IDRC coordinator in November 2009. The Vietnam country report was appreciated by other country teams.

4.4. Participated in calculating regional common tables and writing regional report

Regional report was finished before the IDRC annual meeting in Kunming, China 1/2010. The regional report was appreciated by the IDRC representatives. And now the report has been being completed after getting comments from participants of the meeting.