Pro-Poor Livestock Policy Initiative
A Living from Livestock
Research Update

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Assessing Policy Responses to the Threat of Contagious Diseases of Animal Origin

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1. Project Summary

Highly pathogenic avian influenza (HPAI) associated with the H5N1 virus strain first occurred in Viet Nam and Thailand in late 2003, causing severe mortality in affected flocks. The disease has recurred in 2004 and 2005, and is now considered endemic to the region. Given that the virus has crossed the species barrier between poultry and humans and caused human fatalities, concerted efforts are being mustered by national governments and international agencies to control the spread of the disease through a variety of measures, which may also include the need for a 'restructuring' of the poultry industry eliminating smallholder backyard producers.

Devising evidence-based responses to animal and human health risks that balance the interests of a wide variety of national and international stakeholders requires thorough analysis of epidemiological and economic information (past and present), development of scenarios of disease spread, their likelihood of occurrence, the identification of critical control points and interventions, the costs and impacts of the latter, and, finally, negotiation between stakeholders at different levels, ranging from local, through national to international. Appropriate social investments to reduce health risk locally and nationally can have the very significant dividend of improving smallholder commercial viability, a pro-poor benefit that stands in sharp contrast to the displacement effects many of the proposed control strategies threaten to cause.

The research activities follow a systematic approach that combines rigorous epidemiological and economic analysis with risk management, an approach in the following referred to as Strategic Pathogen Assessment for Domesticated Animals (**SPADA**). The epidemiological component focuses on development of stochastic simulation models of disease transmission to identify

control policies that might be beneficial in the reduction of the transmissibility of HPAI at the local, sub-national and national level. The results of these models will be used as inputs into the economic component, which is designed to assess the ramifications of the disease impacts beyond the animal production systems themselves. The risk management component involves localized design of monitoring, incentive, and penalty mechanisms for disease reporting combined with traceability schemes, the aim of which is to limit downstream disease risks and improve upstream product quality characteristics.

To develop and apply the above approach, a three-year project of collaborative research and policy support is required, built around a consortium of internationally renowned research institutions partnering with local counterparts from HPAI affected countries of the Mekong region (Thailand, Viet Nam, Cambodia and Lao PDR).

The project combines research with policy influence, risk communication and capacity building. Initially, the project intends to focus on taking forward relevant on-going PPLPI activities in Thailand and Viet Nam, countries most severely affected by HPAI in the region, and to subsequently expand activities into Cambodia and Lao PDR.

2. Research Partners

International Research Coordination

International experts in economics, animal health epidemiology, and digital data analysis/mapping have been engaged to form the core team of international research co-ordinators, namely:

- Professor David Roland-Holst, University of California, Berkeley, for economics;
- Professor Dirk Pfeiffer, Royal Veterinary College, in the field of epidemiology; and
- Michael Epprecht, ex-IFPRI, Ha Noi, for geographical data management and digital data analysis

National Research Institutes

Building and building on national research capacity is one of the main objectives of this research initiative and national collaborators have been selected both in Thailand and Viet Nam.

In Thailand, the Thai Research Foundation has provided funds to:

- Chulalongkorn University to take the lead in the economic component of SPADA, and
- Kasetsart University to develop the epidemiological component of the HPAI research agenda.

In Viet Nam, research is closely co-ordinated with the Department of Animal Health of the Ministry of Agriculture and Rural Development (MARD), the Department of Animal Production and the Center for Agricultural Policy (CAP) – Institute of Policy and Strategy for Agricultural and Rural Development (IPSARD), of the same ministry.

3. Research Meetings, Workshops & Missions

Since inception in mid-2005, a number of workshops and meetings have been held in Viet Nam and Thailand to ensure political 'buy-in' and mobilize local scientific expertise. Table 1 provides an overview of the meetings and workshops conducted within the SPADA research agenda.

Table 1 Meetings workshops and missions organized in / to Thailand and Viet Nam within the SPADA research agenda

Venue	Date	Topic / objective
Bangkok, Novotel	29.06.2005	Inception workshop for Thailand
Ha Noi & Ha Noi province	18.10.2005 to 28.10.2005	Mission by R. Soares Magalhaes to liaise with Dept of Animal Health and review poultry production and outbreak information
Ha Noi, La Thanh Hotel	20.10.2005	Inception workshop for Viet Nam
Bangkok, Chulalongkorn University	21.03.2006	Presentation of preliminary research results of epidemiology and economics component of SPADA
Ha Noi, La Thanh Hotel	12.06.2006	Presentation of preliminary research results of epidemiology and economics component of SPADA
Bangkok, Kasetsart University	14.06.2006 to 15.06.2006	Workshop on HPAI-related risk analysis and risk modeling
Bangkok, Chulalongkorn University	17.07.2006 to 21.07.2006	Workshop on the application of CGE models to economic analysis of HPAI
Ha Noi & surrounding provinces	09.10.2006 to 20.10.2006	Mission by R. Soares Magalhaes to prepare epidemiological component of traceability study with Vietnamese counterparts
Ha Noi & surrounding provinces	23. and 24.10.2006	Mission by D. Roland-Holst to prepare economic component of traceability study with Vietnamese counterparts
Bangkok, Kasetsart University	24.10.2006 to 25.10.2006	Workshop on basic concepts of infectious disease modelling by R. Soares Magalhaes
Ha Noi & surrounding provinces	02.01.2007 to 13.01.2007	Mission by J. Ifft to gather background information to plan poultry market structure survey

Venue	Date	Topic
Ha Noi & surrounding provinces	31.01.2007 to 08.02.2007	Mission by R. Soares Magalhaes to conduct PRA and analyse questionnaire survey with Vietnamese counterparts for the design of the traceability study.
Bangkok, Kasetsart University	09.02.2007	Follow-up consultation meeting by R. Soares Magalhaes with researchers at Faculty of Veterinary Medicine on disease modelling and quantitative risk assessment.
Phnom Penh	25.03.2007	Mission by D. Roland-Holst to initiate research dialogue with potential Cambodian counterpart institutions.
Ha Noi	15.06.2007	Mission by D. Roland-Holst and J. Ifft to initiate poultry market surveys in Ha Noi and surrounding provinces.
Ha Noi	21.06.2007	Workshop with D. Roland-Holst, R. Soares Magalhaes, research assistants, and local collaborators, reviewing progress to date, planning survey inception, and discussing technical requirements
Ha Noi & surroundings	18.06.2007 to 30.06.2007	Mission by R. Soares Magalhaes to present epidemiological findings and to implement field activities of the traceability study.
Bangkok, Kasetsart University	02.07.2007 and 03.07.2007	Follow-up consultation meeting by R. Soares Magalhaes with researchers at Faculty of Veterinary Medicine on disease modelling and quantitative risk assessment.

4. Research Reports

Soares Magalhaes, R. (01/06). Development of the epidemiological component of SPADA (Strategic Pathogen Assessment for Domestic Animals)

Roland-Holst, D., Otte, J. and Pfeiffer D. (04/06) Initial assessment of the impact of poultry sales and production bans on household incomes in Vietnam

Soares Magalhaes, R., Pfeiffer, D., Wieland, B., Dung, D. and Otte J. (10/06) Commune-level simulation model of HPAI H5N1 poultry infection and control in Viet Nam.

Roland-Holst D., Soares Magalhaes R., Pfeiffer D., Dung D., and Otte J. (11/06) Pilot programme for certified smallholder poultry supply chains for Ha Noi.

Otte J., Pfeiffer D., Tiensin T., Price L., and Silbergeld E. (12/06) Evidence-based policy for controlling HPAI in poultry: Bio-security revisited.

Tung D.X. and A. Costales (03/07) Market participation of smallholder poultry producers in Northern Viet Nam.

Soares Magalhaes R., Quoc H.D., and Lan L.T. (05/07). Farm gate trade patterns and trade at live poultry markets supplying Ha Noi: Results of a rapid rural appraisal.

Roland-Holst D., Epprecht M., and Otte, J. (05/07). External shocks, producer risk, and adjustment in smallholder livestock production: The case of HPAI in Viet Nam.

Otte J., Roland-Holst D., Pfeiffer, D. Soares Magalhaes R., Rushton J., Graham J., and Silbergeld, E. (06/07). Industrial Livestock production and Global Health Risks.

P.T. Hong Hanh, S. Burgos, and D. Roland-Holst (08/07) The poultry sector in Viet Nam: prospects for smallholder producers in the aftermath of the HPAI crisis.

5. Contacts

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