

A Collaborative Research  
Project Funded by:



Implemented by:



## Controlling Avian Flu and Protecting People's Livelihoods in the Mekong Region

HPAI Research Brief | No. 16 - Year: 2009

# Understanding Smallholders' Decisions towards Adopting HPAI Prevention and Control Measures

*Esther Wieggers and John Curry*

### Key Findings

- Design of HPAI prevention and control strategies should be based on a sound understanding of factors that shape farmer incentives and decisions to invest in HPAI control.
- To better understand farmers' adoption behaviour, HPAI prevention and control strategies should build on a livelihoods approach.
- A livelihoods approach to HPAI risk management also means farmers are more involved in HPAI prevention and control decisions: this enhances ownership and makes prevention and control measures more sustainable by using farmers' own means.

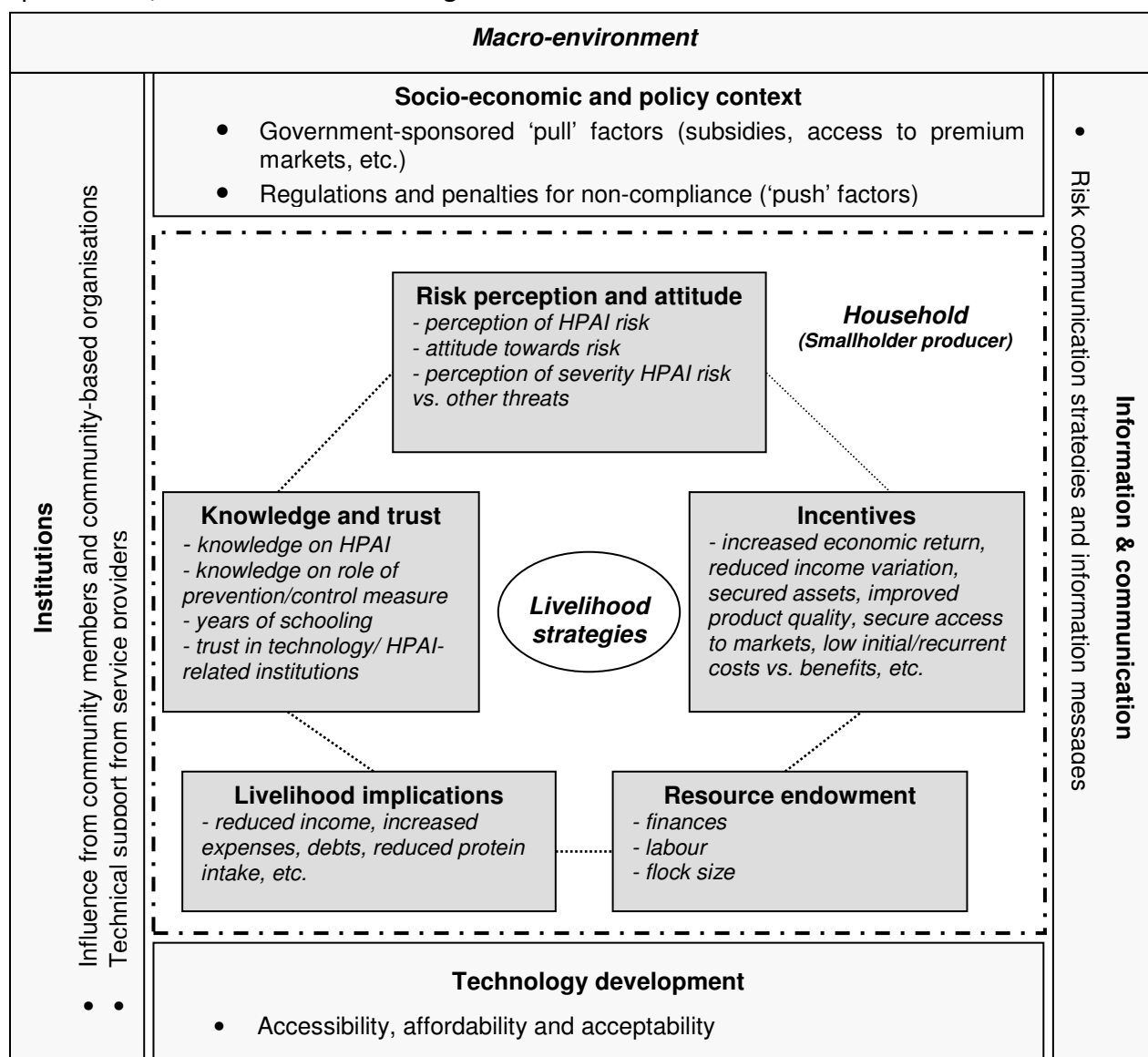
Any decision-making by policymakers on HPAI prevention and control is challenged by the need to avoid adverse impacts on the poor and low efficacy in case households are unable or unwilling to comply with selected measures. In this paper we explore incentives and investment decisions of smallholders towards adopting HPAI prevention and control measures by looking at factors that shape their decisions.

### Factors conditioning the Adoption of Prevention and Control Measures

The uptake of HPAI prevention and control measures among smallholders is influenced by a complex set of interrelated factors (Figure 1). These include farmers' risk perception and attitudes, livelihood impacts, knowledge and trust, incentives, and resource endowments. Investment in prevention and control is also expected to depend on the level of technical and financial support from government institutions as well as neighbourhood pressure among farmers. Flock size, market access, and education also influence the uptake of prevention and control measures. Affordability, access, and acceptability of a particular measure or technology further condition farmers' adoption decisions. In this respect, affordability refers to the financial capacity to pay for the measure, access stands for the distance and delivery channel, and acceptability signifies the preferences of the poor as consumers of poultry. The more technically complex and time demanding the intervention, the less willing farmers may be to uptake. Further, the adoption of HPAI prevention and control measures is challenged by the low degree of 'observability'. This means that farmers, in the absence of an actual outbreak

in their vicinity, cannot easily see the benefits of any prevention measure. Communication is an important means to facilitate change in behaviour and perception and can positively influence the uptake of prevention and control measures. So far, mass communication has been the standard in preventing and controlling HPAI. However, to persuade an individual to uptake a new measure, interpersonal channels (i.e. direct word of mouth) might prove to be more effective.

**Figure 1:** Diagrammatic representation of factors conditioning the adoption of HPAI prevention/control measures among smallholders.



### Risk perception and attitude

Understanding how farmers perceive risk will help policy makers with designing prevention and control strategies and facilitate the development of effective means for communicating these strategies. Risk perception is the personal interpretation of a risk according to the chance of a defined hazard occurring, in this case an HPAI outbreak, and the extent of its consequences. Risk attitude refers to the degree to which a decision-maker tries to avoid or is willing to face risk. Both risk perception and risk attitudes are subjective and a product of society, access to assets, livelihood strategies, learned behaviour, belief, character and experience. As a result, perceptions and attitudes differ among various socio-economic

groups and gender. Several factors influence smallholders' risk perceptions and attitudes, like the relatively low chance of an infection occurring among their own flock or a household member dying from HPAI. Also risks of other livelihood threats that have a higher probability and/or are associated with greater losses influence farmers' risk interpretation.

### Livelihood implications

Smallholders' decisions to invest in prevention and control are also much influenced by the livelihood consequences they face as a result of HPAI. These impacts might include, amongst others, loss of income and livelihood, debts, asset sale to repay loan after collapse poultry business, increased expenditure on alternative protein sources, and the inability to invest in their social networks. Each prevention and control measure has its specific impacts on smallholders' livelihoods. Table 1 lists some potential livelihood implications of different HPAI control measures.

**Table 1:** Potential livelihood impacts of some HPAI prevention and control measures.

Compulsory vaccination	Restricted duck keeping	Bio-security measures	Poultry sector restructuring
The impact of compulsory / non-subsidised vaccination will be differential and depends on the degree to which production is 'commercial'. For small commercial producers vaccination may affect their ability to participate in the market, although costs of vaccination will not be significant compared to the return. Backyard producers are less linked to the market and would likely try to avoid vaccination and sell informally/locally.	Restricted duck keeping will lead to increased expenses, as households need to pay for feed and construct containment facilities.	Not much information is available on livelihood impacts of different (voluntary) bio-security measures, but possible impacts could include:  - disruption of normal management practices;  - depending on the measure, low to high initial and recurrent costs (time and finances).	Poor smallholders may not have the assets required to re-locate their business to new out-of-town zones, especially women who generally don't own land. These households may thus be deprived of an investment opportunity to escape poverty.
	Increased labour and/or cost for rice production, as households no longer benefit from weeding and pest management input of ducks on the rice fields.		Withdrawal of poor small commercial producers from poultry marketing. They will need to find other livelihood sources or sell their produce on the black market.
Vaccination has less livelihood impacts than other measures as it protects assets and people either comply or not.	Possible loss of income in case households cannot comply with the restrictions and have to step out of duck production.		

Source: 'Avian Influenza research to policy' workshop, Hanoi (16-18 June, 2008).

### Farmer incentives

Generally, farmers' decision to comply with a prevention/control measure is the result of both push (incentives) and pull factors (legislation and penalties). To facilitate adoption of prevention/control measures would thus require a good understanding of what motivates people to adopt. Farmer incentives are subjective and differ among persons. They could include a range of factors like increased economic return, lower risk of income variation,

secured assets, improved product quality, secure access to markets, and satisfaction. Where benefits are smaller than costs made by smallholders, voluntary adoption of prevention and control measures is held back unless government is willing to bear some of the costs or offer incentives to the farmers like subsidies, credit, and access to premium markets.

### Resource endowments

Resource endowments are a major determinant of farmer adoption behaviour. In the context of HPAI, lack of access to finances and a small flock size could significantly impede the adoption of prevention/control measures. Further, livelihood security of many smallholders depends on income from various sources. Adoption decisions are thus influenced by the competition in time and financial resource allocation between these different livelihood strategies.

### Knowledge

Knowledge is among the key determining factors of farmers' investment decisions. With regards to the adoption of HPAI prevention and control measures different dimensions of knowledge play a role. First, farmers' knowledge of HPAI transmission pathways, the role of their own farming practices, and how to prevent virus incursion plays a role in their adoption decisions. Generally, farmers are less likely to take up a disease prevention measure when they do not understand the nature of the risk and its associated circumstances. Second, knowledge on the functioning of different HPAI prevention and control measures in stopping virus incursion, their effectiveness as well as their specific costs and benefits also plays an important role in adoption. Training courses and extension on HPAI and its control are thus important means to facilitate the adoption process. This, however, is only the case when training and extension reach out to both the decision-maker(s) in the household and the person(s) in charge of poultry management.

## Conclusions: HPAI and the Need to Include a Livelihoods Approach

The design and implementation of HPAI prevention and control strategies among smallholders should be based on a sound understanding of the factors that shape farmers' incentives and investment decisions on HPAI prevention and control. To date, insufficient information is available on factors underlying farmer's decision-making towards HPAI prevention and control. More research using a livelihoods approach is thus required in support of designing and implementing HPAI prevention and control. A livelihoods approach puts people at the center of development and seeks to understand the complexity inherent to the livelihoods of the poor in order to identify appropriate interventions. Taking a livelihoods approach to HPAI prevention and control means understanding the role that poultry plays in local livelihood strategies and identifying appropriate ways of securing this. It facilitates identification of farmers' risk perception and attitudes, their incentive systems, and their willingness and ability towards protecting their birds – all factors that influence the likelihood of farmers' up-take of prevention and control measures. Furthermore, a livelihoods approach is effective in providing insights in the complex ways in which HPAI prevention and control strategies have the potential to affect income and security. Adopting a livelihoods approach to HPAI also means farmers and farming communities participate more in decisions about HPAI prevention and control measures. Participation gives farming communities a greater feeling of ownership and ensures that the prevention and control measures are more sustainable using farmers' own means.