

Socio-economic impact of human pandemic avian influenza outbreaks and control measures on small-scale and backyard poultry producers in Asia; (economic impact project)

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Policy brief on issues related to socio-economics for smallholder producers obtained from APEIR studies

- There are strong grounds for switching stamping out policies from mass culling to selective culling of poultry in infected households and nearby places. Surveillance around outbreaks should be enhanced to detect additional cases of infection or disease.
- The effects of the disease and of control measures are felt disproportionately by the poorest households and these effects and ways to mitigate them need to be considered when governments develop disease control strategies.
- Consideration should be given to training farmers to implement stamping out poultry infected with HPAI at home when an outbreak occurs and to pay compensation to farmers who undertake destruction of their own flock to prevent disease transmission. Alternatives based on strict quarantine of sick poultry could also be considered.
- Compensation rates for destroyed poultry should be increased to cover 80% of the poultry value with the rates adjusted according to types of poultry and weight ranges.
- Consideration should be given to not paying compensation and to apply fines to farmers if they do not comply with bio-security regulations.
- The time households have to wait for compensation from local authorities should be minimised
- Community-based animal health workers should be remunerated appropriately for the work they undertake in disease control and prevention. The government should consider improving their allowances as well as employing them (even part time) so that they will be more willing to undertake flock health and public health responsibilities. The equipment and facilities of community veterinary stations should be upgraded.
- Community-based epidemic information report and surveillance systems that can be integrated into provincial and national recording systems should be developed.
- Enhancing awareness, knowledge, and skills of farmers on prevention of AI outbreak through improved, gender-sensitive propaganda, mass media or other instruments should be undertaken.
- The effectiveness of veterinary and extension activities should be re-assessed and the methods of delivery/messages diversified, based on findings from the assessment.
- Small scale producers should be trained in vaccination and other disease control activities so as to reduce the burden of work for local veterinarians, who should supervise these activities. This would free the veterinarians up to undertake other activities.
- It is necessary to promote the role of community and social organizations in such activities as knowledge dissemination and encouragement to apply control measures.
- Households practising traditional poultry rearing should be encouraged to change gradually towards more biosecure production in order to prevent poultry contacting wild birds or poultry from other farms taking in to consideration constraints to their uptake.
- Policies are needed that stipulate quality standards for inputs of poultry production, (such as day-old chicken, feeds, and vaccines, to improve farm productivity and reduce the vulnerability of farmers to economic shocks, especially when outbreaks occur.
- Support from the government is needed to build slaughtering facilities and freezers to help to adjust market price fluctuation.
- Support for taking up alternative jobs should be provided for poultry raising households when HPAI spreads so that the households can make up for their losses from raising poultry and maintain their living standards
- Despite shifts towards and support for large scale industrial poultry production, small scale production should still be supported as it is a major source of income for women and the rural poor

Brief summary of what was known prior to the project about the economic impact of avian influenza

Much had been written about control measures for highly pathogenic avian influenza (HPAI) prior to the development of this study but less had been presented on the socio-economic impact of the disease. Studies by Rushton et al (2005) provided some background information on the broad effects of the disease on different parts of the poultry sector in East and South East Asia.

At the Technical Meeting on avian influenza in Rome in June 2007 much of the available information on economic studies was summarised in a paper presented by McLeod and Hancock (2007), focusing on work conducted for and by FAO. It was evident from these studies that smallholder producers had been affected significantly by HPAI and the control measures used. A multi-agency paper on compensation had been produced (World Bank 2006) but recommendations in this on appropriate rates were not fully supported by specific field studies (discussed in more detail in Annex 3 (smallholder studies)).

The FAO/OIE/WHO Technical Meeting in June 2007 concluded that improved information on social and economic effects of the disease, the control measures implemented and market shocks was available but that better information was required based on comprehensive baseline research to allow vulnerable groups to be identified and protected. Regional networks of socio-economists, farming system and biodiversity specialists have to be strengthened. (FAO 2007). It was evident there were still significant gaps in knowledge regarding the effects of avian influenza in East and South East Asia and the economic impact study was designed to fill some of these gaps.

Main findings from APEIR activities

The results presented here are from three countries: China, Indonesia and Vietnam and involved in-depth studies of households rearing poultry in three provinces per country in which HPAI had occurred. Clear differences were evident in the response to the disease between the countries reflecting, to a large extent, the systems of governance. HPAI enhanced the state-community relationship in China and in Vietnam has been enhanced since the government effectively mobilized the state forces as well as the community organizations and villagers in combating the AI. In Indonesia, neither the government agencies nor the community organization was well organized to combat AI outbreak.

The study confirmed much of the information (tacit and explicit) that had been noted or assumed previously through the evidence obtained from farmers in affected areas. It found that poultry rearing plays an important role in farmer

household livelihood, providing some 30 percent of total income, and up to 80% for small scale producers, in rural areas. The share of income from poultry in backyard producers accounted for a smaller proportion (8-9%) of total income in this study (see also Annex 3).

H5N1 HPAI reduced the average number of poultry kept per household by 20-30% percent. In general, those keeping more birds reduced the size of their flock by a greater percentage. Households rearing backyard poultry on average increased the number of birds kept by 12 head in China and Vietnam. This was an unexpected finding and demonstrated the flexibility of backyard producers who require less capital requirements to increase the size of their flocks.

The number of households rearing poultry decreased by 17-32%. Many farmers were unable to return to poultry production due to debts, increased production costs, upgraded requirements, and lack of access to support such as loans.

The net income from poultry production decreased by 25% in Vietnam and 75% in China as a result of HPAI in the areas studied. In general, low income groups were more vulnerable to the market shocks from HPAI. The effect was greatest on poor households in Vietnam (70% reduction in income albeit from a low base) compared with 27% for the high income group in losses due to HPAI. The ability of the poor households to recover and to restock their farms with poultry is weak.

Outbreaks of HPAI also affected poultry prices and the input prices for poultry production. It was found that farmers had to bear much higher costs of production after HPAI because of the prices for day-old chicks as well as the quality problems of day-old chicken and the commercial feeds.

Losses were especially large for households that destroyed poultry. Households who borrowed money fell into debt and took several years to repay loans, and their savings reduced significantly. To cope with the effects of HPAI, many households diversified by focusing more on alternative agricultural activities such as raising other livestock or turning to non-farm work.

There was a short term impact on consumption of poultry meat and eggs but expenditure on food and health increased significantly, which affected the nutrition status of the poor households. The retail price of poultry increased (after initial falls) caused by the shortage of poultry products after outbreaks which increased household costs if having to purchase chicken for consumption. Some households had to take loans to cover their food cost, and other households had to reduce the expenditure on education.

Some improvements in biosecurity practices were found but dangerous behaviors persisted among some farmers

who continued to butcher and eat sick and dead poultry, throw them into rivers, or sell them to the markets.

Psychological effects of HPAI were also evident including anxiety and loss of direction in earning a living which heavily weighed on farmers and caused some social unsettlement in rural areas.

The three countries implemented the same control measures, but the actual practices and effects varied. Overall, the control measures appeared to be implemented more effectively in China and Vietnam, than in Indonesia.

Overall, farmers were reluctant to report suspected cases of HPAI since it may result in culling of their own poultry as well as those of their neighbors. Of the control measures available, vaccination and low cost biosecurity measures were the most popular ones among farmers, because they were easy to implement and involve limited investment.

In general, farmers were willing to cull their poultry if diseased, but farmers are concerned with the financial loss caused by culling. This is a rational fear when the compensation paid for stamping out ranges from less than 1% to 45% of poultry value (across the three countries), which is considered by farmers to be insufficient. As has been highlighted for other APEIR studies, if all infected flocks of poultry are not detected, stamping out is not as efficient as it could be if systems were in place to detect all infected flocks. Until systems that allow detection of all infected flocks are in place, stamping out programs in these three countries will not result in virus elimination especially in areas with high poultry density.

When applying control measures for HPAI, farmers are most concerned about the financial costs, labor inputs, and time inputs.

Results of probit models developed in this study suggest that the main factors affecting household decision in applying control measures include levels of infection at household and regional level, having poultry destroyed, the proportion of income from poultry in total household income, awareness of available control measures, production scale, total value of assets, and market selling prices.

The result also shows that the knowledge on control measures has a positive relationship with farmers' willingness to adopt the measures.

Across the three countries, the community veterinary services and network were regarded as being very weak, with veterinary staff lacking incentives and job support to fulfill their tasks.

In Indonesia it was evident that the areas with lower concentrations of poultry had fewer outbreaks and therefore lower losses from HPAI.

Capacity building

The major areas where capacity was built in this study included:

- Postgraduate training of students including training in data analysis
- Training in publication (including multiple scientific papers and a book produced in China)
- Involvement of local agricultural and veterinary offices in the research studies at local level
- Developing experiences in building transdisciplinary teams
- Developing expertise in dealing with multicountry teams and harmonising methods for data collection and analysis
- Developing closer ties with economists other social scientists and animal scientists in other countries
- Development of a classification system for poultry farms in Indonesia and linking this to the FAO 4 category system

Policy advocacy

The research teams disseminated the information from the project widely. In China specific policy recommendations for HPAI prevention and control measures based on research results was presented to the National Center of Animal Disease Control at the Ministry of Agriculture. In Indonesia the research reports were provided to the province and districts where the studies were conducted and a policy brief based on the study outputs was presented to the Ministry of Agriculture. In Vietnam the findings from the work were incorporated into policy advice provided to the Minister of Agriculture and Rural Development.

References

- Food and Agriculture Organization (2007) Technical Workshop on Highly Pathogenic Avian Influenza and Human H5N1 Infection 27-29th June 2007. Technical Report Available at <http://www.oie.int/doc/ged/D4409.PDF>
- Macleod A and Hancock J (2007) Evidence on and lessons from short-term socio-economic impacts of HPAI Available at <http://www.fao.org/docs/eims/upload//229372/ah657e.pdf>
- Rushton J, Viscarra R, Guerne Bleich E and McLeod A (2005) Impact of avian influenza outbreaks in the poultry sectors of five South East Asian countries (Cambodia, Indonesia, Lao PDR, Thailand, Viet Nam) outbreak costs, responses and potential long term control
- World Bank (2006) Enhancing Control of Highly Pathogenic Avian Influenza in Developing Countries through Compensation: Issues and Good Practice. World Bank, Washington. Available at http://siteresources.worldbank.org/INTARD/Resources/HPAI_Compensation_Final.pdf