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HPAI Control Measures and Household Incomes in Viet Nam

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Key Findings

- Policies toward HPAI in epicentre countries necessarily implicate the rural poor majority. Risk reduction strategies must be designed with them in mind.
- Despite international pressure to act quickly on control measures, one size will not fit all or even a significant percentage of local conditions.
- Well designed monitoring and traceability systems can improve the terms of market access for the rural poor, making many of them better off as a result of HPAI policies.

A broad array of control measures or Highly Pathogenic Avian Influenza (HPAI) is being considered for the poultry sector in Viet Nam and elsewhere. Because the poor smallholders are prominently represented in Viet Nam's poultry production, any national strategy for intervention in this sector needs to take careful account of their welfare.

If serious adverse impacts on the poor are to be avoided, it is essential to develop and implement control strategies that are adapted to initial conditions and local institutions. Because of diversity in the former (both between as well as within countries) and complexity of the latter, economywide prescriptions and 'rules of thumb' are unlikely to achieve anything close to optimality. In Thailand for example, small holders are responsible for less than 25% of poultry production and marketing, while in Viet Nam they account for about two-thirds of production and half of direct marketing. For this reason, the poverty risk of market displacement is much greater in Viet Nam, and simple macro approaches like moratoria on production of a given scale could pose a serious hardship for the country's rural poor population majority.

Reducing HPAI Risks while Safeguarding Livelihoods

If the policy makers want to reduce HPAI risks to larger animal and human populations, without undue adverse effects on the poor, they need more effective means to identify local outbreaks and contain them. The information needed to accomplish exists, but it has until now been very

difficult to obtain and implement. Much evidence suggests that local communities are well aware of local outbreaks and infection patterns, but that reporting processes are plagued by inefficiency and incentive problems.

Based on previous livestock sector research at the micro, meso, and macro level, the DFID-funded project intends to contribute to the initiation of a HPAI policy research agenda towards more socially effective means of monitoring and control. This includes 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). Stochastic simulation models of disease transmission are being developed to identify control policies that might be beneficial in the reduction of the transmissibility of HPAI at the local, regional and national level. The results of these models are intended as inputs into the economic component, which is designed to assess the ramifications of the disease beyond the animal production systems themselves. A risk management component involves localized design and testing of monitoring, incentive, and penalty mechanisms for disease reporting combined with traceability schemes.

In this brief note a few initial examples of the economic risk assessment are presented. The approach recognizes the microeconomic realities of poultry production and livelihoods, including the diversity of household production systems and the complexity of market incentives they face. The approach is divided into three components, each with an essential role to play in a pro-poor approach to HPAI risk reduction.

1. **Surveillance**: The research examines alternative policy designs to facilitate early detection of outbreaks. These combine surveillance, incentives for collective responsibility and self-reporting, taking into account the resource constraints of different communities, for the development of mechanisms that allow for reduced health risk and economic survival of the producers.
2. **Control**: Effective decentralization of control capacity is essential to the long-term success of disease management. This will require new incentive relationships between district and provincial authorities, the central government, and outside stakeholders. Regional participation and coordination are essential for sustained risk reduction. This component of the research will also aim to extend the analysis so that the costs and benefits of alternative control strategies can be more accurately anticipated.
3. **Traceability**: An important class of strategies that will have to be introduced in order to control the spread of agriculturally originated contagious diseases are mechanisms to trace the movement of agricultural products generally and livestock in particular. At the same time, consumer concern in relation to food quality and safety, and the introduction of modern supply chain management systems are increasing the value of product identification throughout the food chain. Thus traceability has dual value to consumers and producers, increasing the effectiveness of demand targeting and raising value-added by origin. With appropriate policies, private and public investments in systems of traceability that address food safety concerns can also benefit smallholders by linking them into more integrated food chains. These chains can increase distribution efficiency, reduce marketing margins and risks, and stimulate upstream technology transfer and product quality improvements, all of which improve the likelihood of smallholder survival

until alternative income sources emerge. This pro-poor benefit stands in sharp contrast to the displacement effects many current control strategies threaten to cause.

Examples

We are fortunate in the case of Viet Nam to have very detailed data on the microeconomics of household production. With this we have been able to calibrate simulation models and evaluate the effects of policies toward livestock production generally and poultry in particular. Here we present two preliminary assessments of a backyard poultry ban, using as our reference the principle of eliminating chicken and duck production for all smallholder poultry enterprises (FAO sector 3 and 4).

Given the apparent links between human HPAI infection and smallholder production, an obvious control strategy would be to simply separate domestic birds and humans by mandating universal confinement of 'commercial' poultry in larger scale production systems, restricting smallholders to subsistence production. In Viet Nam, this would affect the majority of individual poultry producers, most of whom are poor rural households.

Figure 1 presents the effects on annual household income for the 600 representative households in our sample, ordered across the horizontal axis by share of total income (i.e. the poorest are on the left). Clearly, this control / eradication policy would disproportionately affect the poor. Most poor households could probably diversify production to limit losses to below 10 percent of annual income, but some would lose over 25 percent. The anti-poor effects of this policy are relatively transparent.

If rural households cannot raise poultry for sale, they might also not be permitted to raise birds for their own consumption as separation of these two uses could be very difficult to enforce. Figure 2 indicates the cost to Vietnamese households of giving up sale of poultry and having to buy poultry for their own consumption. In many cases, this more than doubles the household cost of the policy, with an average negative income effect for the lower quartile that is several percentage points higher.

Figure 1: Household Income Effects of a Backyard Poultry Sale Ban (% change in annual income

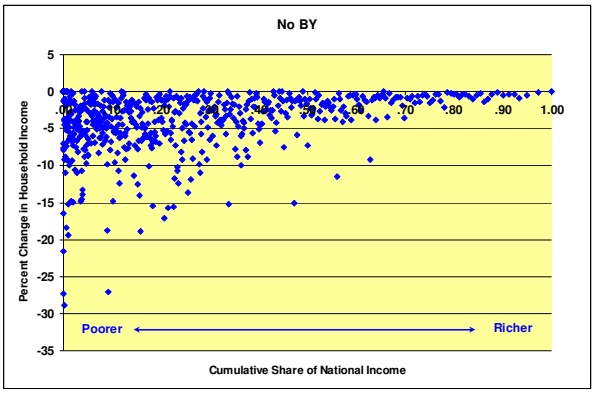
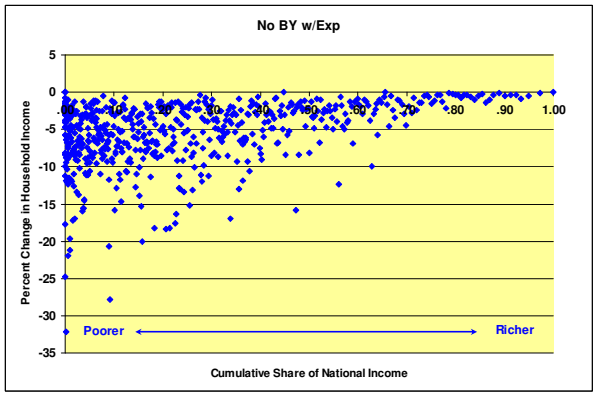


Figure 2: Household Income and Expenditure Effects of a Backyard Poultry Ban (% change in annual income)



It should however also be noted that rural production systems are diversified and could shift resources to partially offset the direct effects of such a policy. More effective policy analysis

would seek to measure these adjustments and estimate the ultimate impact and then examine alternative measures and compensation schemes.

Conclusion

This research brief discusses the importance of microeconomic analysis and localized design and implementation of policies to reduce HPAI risk such that it is most likely to achieve stakeholder acceptance, and therefore successful control. Despite the global momentum for rapid and intensive measures to control poultry stocks and restructure management systems, in the HPAI epicentre countries these policies must address the economic and institutional realities of poor rural majority populations. To reconcile such macro and micro perspectives effectively is a much greater challenge than simply allocating international resources to national governments. To promote a more comprehensive analysis of this situation, four salient insights need to be borne in mind:

1. Policies toward HPAI in 'epicentre' countries necessarily implicate the rural poor majority. These people need to be recognized as part of the solution to reducing disease risk, not the problem. We can neither ignore nor exempt such a large group from risk reduction strategies, but the strategies must be designed with them in mind.
2. Because of diverse initial conditions and weak institutional linkage, national policies cannot be implemented effectively without close attention to local incentives. Despite international pressure to act quickly on control measures, one size will not fit all or even a significant percentage of local conditions.
3. It has been seen time and time again that prescriptive eradication measures fail to achieve their direct objective and can cause many adverse indirect effects. By driving the disease problem 'under ground', disease risk actually increases and rural markets / livelihoods are more seriously disrupted.
4. Well designed monitoring and traceability systems could improve the terms of market access for the rural poor, making many of them better off as a result of HPAI policies. Risk reduction strategies must incorporate extension and marketing services that transfer standards and technology upstream, product quality and diversity downstream, increasing value-added for small holders.

HPAI presents an unusual opportunity for international cooperation because millions of poor rural households can contribute significantly to the global commons of pandemic disease prevention. Their participation in this effort must be better understood and indeed rewarded if success is to be achieved.

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