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

Institutional Findings for the Greater Mekong Sub-Region

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NB: Outline numbers refer to the supporting project document.
1.2 Poultry sector dynamics and consumer preferences

1. Regional poultry production systems are extremely diverse, in terms of species, production methods, and marketing channels, but traditional smallholder production is ubiquitous.

2. A distinctive production system in the GMS entails keeping mobile duck flocks that travel extensively to provide pest control and fertilization services in exchange for forage.

3. Industrial systems are the fastest growing category of total bird production, but market-oriented smallholder systems far outnumber industrial production units.
1.3 Household poultry keeping and marketing

1. The semi-industrial, market-oriented poultry producers are implicated in networks of small enterprise agrofood marketing systems.

5. Most smallholders market their poultry at the farm gate, selling to aggregators who move their birds downstream to Live Bird Markets (LBM). These relationships often undermine value added and increase disease risk.

6. Adoption of biosecurity measures depends upon the scale of household poultry production.

8. Informal transboundary trade flourishes throughout the region, posing a significant challenge to national disease control policies.
LDC Poultry Markets have Many Imperfections

- High Mortality
- Low Input Quality
- Low SPS Standards
- Low Bargaining Power

Adverse Selection

- Moral Hazard
- Distrust, Low WTP

* May be the party that slaughters the bird
Transboundary Risk - Regional Coordination

Best practices from this project can help individual nations manage disease risk with a combination of local and external resources, but

Without regional coordination, transboundary interactions (“wild birds”) will undermine these efforts and limit the effectiveness of funding

Just as with human pandemic, the transboundary disease externality can only be addressed effectively by explicit recognition and concerted policy response

This approach will make more effective use of HAPI control resources by limiting the risk of recurrent outbreaks via re-infection
Northern Lao PDR

Hill tribes with transboundary family systems.

Chicken on a bus: Oudomxay-Phongsaly

Chinese eggs in Phongsaly (Lao vendor)

Reported outbreaks, Dien Bien Phu
3.1 Driving forces of HPAI control – Diverse interests/influences across countries

1. Economies with the highest potential economic damage from HPAI, including the OECD, China, and India, are seriously underinvesting in risk reduction at home and abroad.

2. In Thailand, concerns of the export-oriented industrial poultry sector were influential determinants of the country’s HPAI responses.

3. In Viet Nam, despite assertive central government participation in HPAI policy and expenditure, fragmentation of vertical and horizontal authority within the structure of government constrained HPAI responses.

4. In Cambodia and Lao PDR, institutional weaknesses are exacerbated by strong patronage politics and weak border control.

5. Smallholder farmers were generally blamed for the disease and became the targets for HPAI control.

6. Donor coordination has been sub-optimal and has contributed to distortions in the HPAI response in some countries.
Global Coordination: Funding for HPAI Prevention and Control

- Resistance to contagious disease is a global commons, and it should be sustained financially by governments in proportion to estimated national gains from investment in risk reduction.
- A practical rule for such cost sharing would equate national commitments with the expected economic value of lives saved, to be invested by activity/location according to effectiveness of overall risk reduction.
- Because of geographic disparities in both economic risk and disease origination risk, such a rule will entail significant multilateral transfers.
- This approach will also require sustainable coordinating institutions for funding, monitoring, research, and cooperative extension.
Value of Population Defense

Author estimates: Bubble diameter proportional to population.

Mini-lateralism?
Epicenters: HPAI Viral Clades
3.2 Applied control measures and their efficacy – diverse responses

1. Thailand focused its HPAI control on enhanced detection through geographically extensive surveillance and culling, without permitting the use of vaccination.

2. Viet Nam opted for a control program consisting of surveillance, vaccination and extensive radial culling.

3. Cambodia’s control program is less extensive than either Thailand’s or Viet Nam’s, and did not involve public vaccination campaigns.

4. A comparison between the approaches chosen particularly in Thailand and Viet Nam suggests that large-scale vaccination represents a significant challenge when attempting to achieve the necessary vaccination coverage to produce extinction of infection.

5. Gains in detection would have had a large impact upon the scale and duration of both the 2007 wave and any that may occur in the future supporting the notion that more targeted surveillance may be necessary for effective control.

6. Smallholder’s risk perceptions limit their economic interest in biosecurity investments, and these must be changed with incentives that recognize their contribution to larger social objectives.
3.4 Alternative approaches to HPAI control

1. Given the structure of current market incentives, smallholder poultry keepers are unlikely to adopt compulsory bio-security measures.

4. Control measures can undermine safety.

5. Control measures can undermine value creation.

6. Development of incentive-compatible policies critically depends on information technologies.

7. In the absence of ‘perfect’ information, systems of ‘carrots and sticks’ need to be introduced.
Control measures can undermine safety

Adverse incentives in control measures can lead to a variety of unintended and undesirable outcomes:

- **Producers** loss aversion may lead them to circumvent health standards, sell illegally, hide or swap stocks, etc.
- **Traders** may actually profit in these circumstances by purchasing animals known to be sub-standard and reselling them without this information.
- **Buyers** with low levels of risk aversion can also facilitate trade in sub-standard animals by ignoring minimum sanitary requirements to save money (this includes households, restaurants and butchers).

At all three levels, incentives exist for behaviour that will increase surveillance costs, undermine animal health standards, and transfer disease risk down the supply chain.
Control measures can undermine value

By blending animals without adequate regard for safety, traders contribute to biocontainment problems and undermine value in three ways:

1. **Spillover** of disease risk – blending promotes contagion within and between species

2. **Adverse selection** – masking producer sources reduces incentives to invest in quality, increasing risk and reducing producer incomes

3. **Perception** of these uncertainties undermines consumer willingness to pay (program credibility, perceived safety standards)
Control Measures from a Smallholder Perspective

Quality Recognition in Supply Chain

- Government
  - Risk
  - Profit / Livelihood
- Producers
  - Risk
  - Profit / Livelihood
- Consumers
  - Risk
  - Quality

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Coping Strategies for Smallholders

**Endogenous**
- Gains through price increases of substitute products
- Intensification of other farming activities (e.g. pig production)
- Engagement in ‘new’ farming activities (e.g. fruit)
- ‘Release’ family labor for off-farm employment or migration
- Draw in savings and social networks

**Exogenous**
- Compensation
  - partial (20% of value of culled bird)
  - late (several months delay is not uncommon)
  - none for revenue foregone
- Restocking assistance
  - delayed
  - inappropriate
- Product certification, traceability, and other value chain programs and incentives
Challenge: Smallholders and Risk Perception

Independent smallholders exhibit less commitment to HPAI risk management than might be socially optimal. Potential reasons include:

1. Lack of information on individual health risk
2. Low relative individual health risk
3. Failure to internalize the public health externality
4. Low perceived risk to native birds
5. Low opportunity cost of birds
6. Higher relative cost of conformity
Aggregators

- By nature of their business, aggregators potentially play an important role as disease transporters
  - 20 purchasing transactions/month
  - 70 sales transactions/month

Monthly Trading Volume

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Top Institutional Findings

- OECD economies have given primary global policy and financial impetus to risk reduction at HPAI sources. However, empirical evidence on actual and potential domestic damages suggests that the OECD, as well as China and India, should still make much larger investments in risk reduction in current and potential AI epicenters.

- HPAI risk in the GMS arises in diverse poultry production systems and species, where millions of households raise poultry for food, abundant small-scale poultry enterprises linked to consumers through complex market chains, and the covert transboundary trade that pervades the region.

- HPAIV H5N1 now appears to be endemic in parts of Greater Mekong Sub-region (GMS). We anticipate that it will be difficult to obtain the level of domestic and (especially) external public resources needed to sustain commitments to national risk reduction and coordinated regional control efforts need to be substantially strengthened.

- Domestically, effective public and animal health policy must arise from and be sustained by sound institutions, with adequate capacity and coordination at the national, regional, and local levels. Governmental institutions in the GMS are very diverse in all these aspects, and HPAI risk management has in some cases been seriously compromised by institutional weakness.

- Attempting to improve the bio-security of millions of backyard producers is an ineffective use of scarce resources in the GMS countries, especially public funds in countries with many high priority development objectives. Interventions targeting participants in the main poultry market a supply channel are likely to be more cost-effective.
Thank you