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

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### HPAI Risk Reduction and Smallholder Poultry Supply Chains – The Case of Thailand

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#### Key Findings

- Small-holder farmers are unlikely to adopt compulsory bio-security measures given the structure of current incentives.
- Consumers continue to exhibit a preference for local poultry raised by smallholders and are willing to pay more for this preference.
- This evidence should be more fully considered in formulating socially effective and sustainable HPAI strategies, particularly if avian influenza becomes endemic.
- Poultry sector transition will surely continue in Thailand, but abrupt changes could destabilize livelihoods among the country's economically vulnerable rural majority.

**Highly** Pathogenic Avian Influenza (HPAI) was first reported in Thailand in early 2004. The outbreaks caused severe mortality among affected flocks and substantial losses resulted from the subsequent control measures. Moreover, transmission of the disease from birds to people led to human fatalities in Thailand. In the years following the major outbreaks, Thailand has seen infrequent but repeated disease incidence. The sustained threat of a human pandemic requires the Thai government and other stakeholders to consider strategies for effectively managing HPAI risk in poultry populations.

Three overarching trends suggest the need for a new generation of HPAI control policies: (i) the disease appears to be establishing itself as endemic in Southeast Asia, while (ii) the numbers of outbreaks are declining and (iii) the global economy is experiencing a serious downturn. In this changing environment, approaches to risk management that combine effective targeting and opportunities for self-financing are much more likely to be sustainable.

This brief summarizes research findings on smallholder poultry supply chains in three regions of Thailand. Modelled on similar research undertaken in other Mekong countries, this research combined an assessment of local market chains with an evaluation of household poultry purchasing preferences.

The research findings highlight two general domains of policy recommendations. The first relates to farmers' market incentives with regard to disease risk mitigation strategies. The second relates to pro-poor multiplier effects from small-scale poultry market chains and their strategic importance for national economic development. Both domains are essential components of second-generation HPAI risk management policies.

## Background

The Thai poultry sector has several distinct sub-sectors. While large-scale broiler producers contribute most of the quantity and value of chicken meat produced in Thailand, more than 9 in 10 poultry holdings nationally are small farms. Moreover, while the industrial sector has advanced bio-security measures in place in order to meet export standards, smallholder (or 'backyard') farms operate with minimal inputs and apply little or no bio-security measures. Consequently, disease risk on tens of thousands of backyard farms in Thailand is necessarily an essential policy consideration.

While HPAI outbreaks directly affected producers whose birds died or were culled, indirect effects of the outbreaks, including decreased demand and effects of the control measures, posed the greater threat to smallholder livelihoods. Supply chains for local chickens generally comprise networks of small-scale actors that have established relationships with other buyers, sellers and traders. Elucidating the market incentives facing smallholders is essential to predicting responses to policies such as compulsory bio-security investments, trade regulation, and other measures meant to mitigate HPAI risk. Policies that disrupt livelihoods may drive production and trade underground and thereby unintentionally increase disease risk. On the other hand, allowing the regional poultry trade, in its current form, poses risks to public health and large-scale producers, in addition to the risks posed to small-holders' poultry and their own health.

The research took place in three provinces with high densities of backyard farms that were affected by HPAI; Khon Kaen and Nakhon Phanom in the northeast, and Chiang Mai in the north. Consumer and market surveys were conducted in the capital districts of each province, while farmer, aggregator and vendor surveys were conducted within the areas where most of the capital district market poultry is raised (approximately 50 km radius around the capital districts). Nearly 1,400 consumer households participated in the consumer demand survey and, on the 'supply side', more than 1,400 farmers, 50 aggregators, and 100 market vendors were surveyed.

## Smallholder Poultry Supply Chains

One of the main research outcomes was a significantly better understanding of how stakeholders operate and interact within poultry supply chains. It became evident that trust, reliability, and market information are main components of their relationships.

Poultry plays an important role in the livelihoods of many rural households. However, most backyard farms only have a small number of chickens: 45% kept fewer than 20 chickens, 85% kept fewer than 50 chickens, and 95% fewer than 100 chickens. Most households allow their birds to scavenge for feed providing only small supplemental amounts of human food scraps or unprocessed rice. Because of the low inputs required, many of the poorest households raise poultry. Poultry keeping households in Chiang Mai reported an average monthly income of 6,000 baht (US\$ 170), Khon Kaen households 4,000 baht (US\$ 115), and Nakhon Phanom households 3,000 baht (US\$ 85). These households used poultry to supplement household consumption as well as to provide additional income to meet costs for school fees or medical expenses. Less than 10% of households in any province raised poultry as their primary source of income. In Chiang Mai, households sold 70% of their yearly poultry production for an average supplemental income of 3,000 baht (US\$ 85), while households in Khon Kaen sold 35% of their yearly production and received 750 baht (US\$ 20), and households in Nakhon Phanom sold 65% of their annual production for 1,300 baht (US\$ 35). Unsold chickens were consumed, given away, or, in the case of hens, used for restocking the flock.

Farmers mainly sold chickens to traders, who combine stock from many farms, and bring them to vendors who sell meat in the market (and/or distribute to other markets). At times, farmers sell chickens directly to market vendors. About half of sales to traders and market vendors took place as part of pre-existing agreements, providing some predictability of future income streams. However, in some areas, the market chain has broken down and farmers have reverted to home consumption

with infrequent sales taking place, primarily to neighbours. This was most apparent in Khon Kaen where 86% of sales were made to neighbours.

What emerges from these surveys is a narrative of a system where households keep poultry as a supplemental activity for consumption and sale. Time and monetary resources are mainly devoted to other activities such as crop production or off-farm employment. Poultry losses from mortality are expected and tolerated. Consequently, while poultry plays an important supplemental role in supporting livelihoods, most households are averse to investing into poultry production. This is an important recognition for policymakers in their attempt to regulate local poultry market chains.

## Poultry Consumer Preferences

The second main outcome of this research was an understanding of poultry consumer purchasing behaviour. Females were the primary shoppers in almost three quarters of households and more than 70% of household shopping took place at wet markets. However, in Chiang Mai respondents did a quarter of their shopping at supermarkets, a much higher percentage than in the northeast. Half of all households purchased chicken meat to cook at home, spending 75-80 baht (US\$ 2.15-2.30) per week in Chiang Mai and Khon Kaen to purchase 1 kg of chicken, and spending about 150 baht (US\$ \$4.30) per week to purchase 2 kg of chicken in Nakhon Phanom. In most households, chicken constituted 15-25% of all meat purchases. Interestingly, a quarter of all households did not buy any food to cook at home because they did not have a kitchen.

The consumer surveys revealed a taste preference for local breeds of chicken. While most households purchased more than one type of chicken, about 6 in 10 respondents expressed a preference for local chicken and are willing to pay more for local breeds. Overall, local breeds were found to cost 40% more than industrial breeds. But, although there is a distinct preference for local chicken, three-quarters of all purchases were other types of chicken. Initially, it was hypothesized that the high price of local breeds limited their demand. However, consumers rated price as the third or fourth most important attribute, while safety was rated the most desirable attribute in every province, followed by taste in Khon Kaen and Nakhon Phanom, and brand name in Chiang Mai (which may also be related to safety). Half of respondents said that they were not satisfied with the safety of the chicken they regularly purchased. When asked why they were concerned about the safety of the chicken, the most common response in every province was unsanitary market conditions.

Consumers were asked if they would be interested in paying a premium for chicken that was credibly certified to be safe. Overall, 75% of respondents said that they would be interested in safety certified chicken. Among those households that regularly consumed local chicken, 80% were willing to pay (10% extra) for safety certified local chicken.

## HPAI and Smallholder Poultry Supply Chains

Recent changes in market conditions, as an indirect result of the HPAI outbreaks, are making it very difficult for some small-scale poultry farmers to sustain their ongoing enterprises. The study shows that, despite the absence of large outbreaks since mid 2004, there have been significant movements out of the native chicken sector during 2006 and 2007. Households who grew chickens for sale in the past continue to do so for own consumption, but they see sharply diminished prospects of obtaining significant livelihood support from this activity, most notably in Khon Kaen province.

The findings also show that smallholder poultry production could continue to contribute to local markets and diets, that Thai consumers still exhibit distinct preferences for local varieties, and that markets for these could in turn make important contributions to rural poverty alleviation if consumers can be assured of the product's quality. It is also apparent that smallholder farmers are linked to consumers through networks of low-income intermediaries, meaning that their continued viability entails pro-poor multiplier effects for the Thai economy.

The willingness-to-pay results of the surveys indicate that the general public has a distinct preference for traditional varieties that have historically been produced by smallholders, contradicting the pressures from conventional HPAI policy to phase out this product. However, the perception of low safety levels may be limiting demand. The findings that safety is the most important meat characteristic, and that unsanitary market conditions are perceived to be the biggest threat to food safety, suggest that improving sanitary practices at wet markets may also increase demand for unbranded meat products. The willingness to pay for 'safety-certified' traditional poultry means that product development and upgrading initiatives could eventually be self-financed, a welcome substitute for open-ended fiscal commitments to public disease monitoring and geographically extensive control measures.

Our findings also indicate that policies which seek to phase out this type of production, or impose difficult to meet safety regulations on smallholders will not result in improved bio-security but instead are more likely to drive production and trade networks underground. There is a disconnect that arises from the differing perspectives of individual farmers and national governments and international observers. This disconnect was demonstrated in part by most producers' indifference to the risk of contracting HPAI and other poultry diseases, the general disinterest toward applying bio-security measures, and the expectation of high poultry losses. Programmes requiring improved bio-security would thus have to be presented as an opportunity to reap higher profits for farmers in order to be effectively adopted.

## Conclusions

The survey findings suggest a spectrum of socially constructive policy response options that can simultaneously promote HPAI risk reduction while improving economic conditions for poor farmers, who are the majority population in rural Thailand.

1. The government can support the efforts of farming groups that currently practice safe production practices, while actively recruiting farmers interested in doing so. These efforts can be modelled on western agricultural producer cooperatives, who are the primary guarantors of product quality and safety in OECD countries.

3. The government can play a critical constructive role in smallholder supply networks by supporting grassroots producer cooperation, extension services, and generally maintaining an environment congenial to small enterprise development. This would include, but not be limited to, strengthening of veterinary institutions, providing intellectual property protection, supporting development of third-party standards and reputation building through labelling or branding programmes, improving existing market infrastructure, and developing small wholesale markets with registered slaughterhouse facilities in strategic urban locations.

2. Access to information and technology for smallholder farmers can be improved, particularly with respect to product quality, pricing, and other market conditions. On the financial side, micro-credit schemes can accelerate technology adoption and small enterprise modernization, improving product quality/reliability and leading eventually to established brands/reputation that confer higher long term value-added at lower transaction cost. Education with respect to contracting, negotiation, and conflict resolution would improve the terms of smallholder market participation.

Prior to 2003 several projects attempted to reconfigure regional small-holder supply chains in order to improve farmers' livelihoods. However, in light of the HPAI outbreaks, these projects have taken a back seat to bio-security concerns. Our opinion is that these objectives can be complementarily met. Poultry sector transition will surely continue in Thailand, but abrupt changes could destabilize livelihoods among the country's economically vulnerable rural majority.

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