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Key Findings

- Innovative traceability mechanisms improve market access and incentives to invest in food product quality
- Consumer demand indicates that free-range duck from certified supply chains would be well received in Ho Chi Minh City
- Premia for local varieties and health status suggest that these systems can be privately financed, contributing to self-directed poverty reduction.

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

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Safety Certified Free-Range Duck Supply Chains Enhance both Public Health and Livelihoods

Jennifer Ifft, Nguyen Do Anh Tuan, Nguyen Duc Loc, Joachim Otte, and David Roland-Holst

A broad array of control measures for Highly Pathogenic Avian Influenza (HPAI) is being considered for the poultry sector in Viet Nam and elsewhere. Free-range poultry, both ducks and chickens, are prominently represented in the poultry production systems across the Greater Mekong Sub-region (GMS), where HPAI risk remains high, and the developing world generally. Any national strategy for intervention in this sector needs to take careful account of how free-range poultry producers, largely smallholders, can participate in supply chains serving urban areas while improving overall biosecurity standards. A recent project in Ho Chi Minh City piloted a safety certified free-range duck supply chain and assessed consumer demand and willingness to pay for this type of duck.

The project was motivated by evidence from detailed poultry supply chain surveys in northern Viet Nam, which suggested that animal health status remains highly uncertain to both intermediaries and final consumers. Animal health certification pilots in Ha Noi for chickens have shown promise to remedy this situation. Since ducks are a prominent poultry category in Viet Nam, a comparison pilot was undertaken for duck supply chains in the Mekong river delta.

This pilot study assessed mechanisms designed to overcome incentive problems for product quality improvement, reducing disease and food safety risks while increasing smallholder incomes and reducing public expenditure for conventional surveillance and control measures. In particular, this study aimed to explore the potential of the demand side of the poultry market to promote and finance

higher food safety standards, thereby reducing costly and often uncertain government intervention.

Implementing a pilot safety certified and traceable supply chain for small scale poultry producers entailed coordination amongst several stakeholders, investment in quality assurance, and emphasis on education and training. Given the importance of existing business relationships in poultry supply chains, developing new supply chain relationships can be very complex. This project utilized existing relationships and institutions wherever possible, while providing for capacity to build and upgrade standards and practices as necessary.

The project introduced and tested innovative practices that can now be commercially adopted. The first phase began with recruitment of all supply chain participants and carefully managed their relationship with the project and among each other. Participants included 3 farmers who in total raised around 3,000 ducks over approximately 3 months, a prominent distribution company, and both supermarkets and specialty poultry shops. Farmers were selected for their capacity to implement and maintain safe production standards, as well as to deliver ducks consistently within the specified time period.

The project has also determined willingness to pay for safety certification of free-range ducks through a household survey and economic experiment, as well as by careful tracking of sales by project vendors.

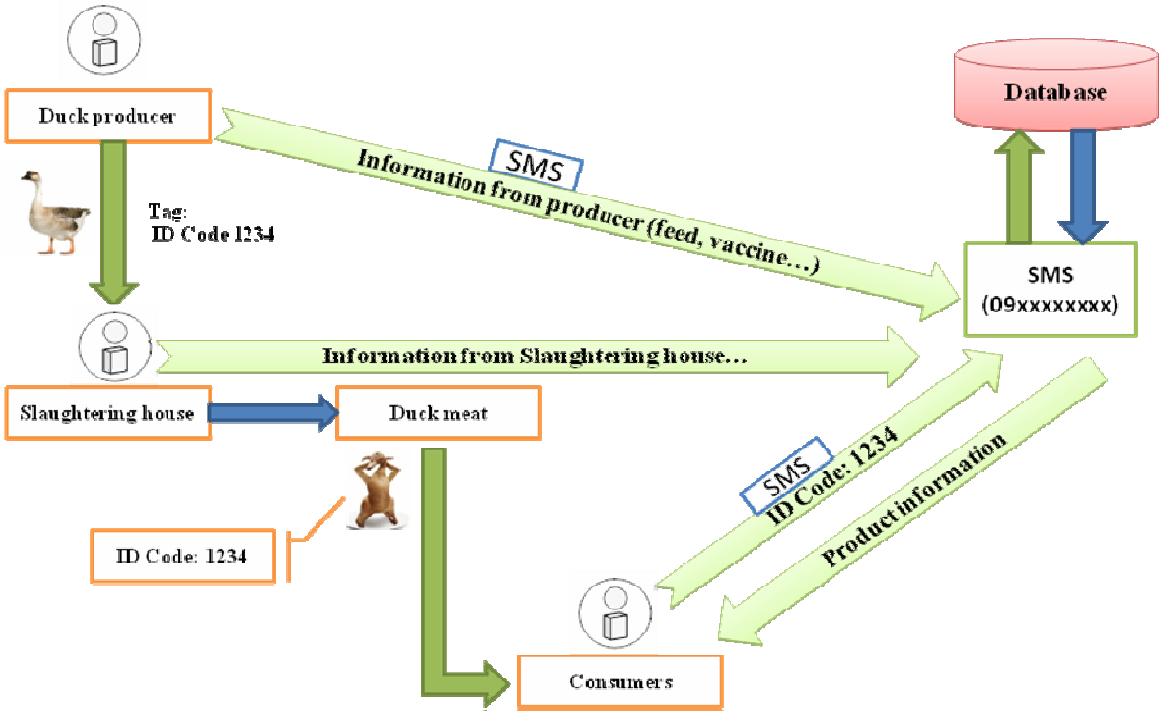
Supply Chain Innovations

The previous project in Ha Noi used a tag as an effective short term marker to ensure traceability. This tag was put on chickens while they were still on the farm, and could not be removed without rendering it unusable. The tag 'survived' slaughter and was easily visible to consumers and a similar system was used for ducks on this project. To complement the tag, an SMS-based tracking and monitoring system was developed to track production activities, as well as duck sales. The protocol and design of this system, illustrated in Figure 1, could easily be replicated by commercial traceability systems.

Farmers sent daily production status updates via mobile phone text messages (SMS) and also reported occasional activities, such as purchase of feed and use of vaccines or other medication. Simple training was provided to the farmers before they began to send SMS messages and farmers adapted quickly to the system. On a larger scale, a project that involves farmers sending regular SMS updates would have to strike a careful balance between simplicity and amount of information that is needed.

Consumers were an integral part of the SMS system. The duck tags had a unique code for each bird. Advertising materials provided a telephone number for consumers to send the tag code, via SMS, to obtain the location of the farm that the duck came from and other information such as the date of slaughter. Unique codes helped to protect the integrity of the traceability system. If each farm or duck is assigned a unique and secret code, copying the tag with relevant information will be very difficult. A further safeguard that was used during this project was that only 2 SMS were answered for each duck code; after that no information could be retrieved. This restriction helps to prevent copying of tags or tag numbers. Feedback from farmers, retailers and consumers was incorporated into the design of the SMS system. SMS and tags are of low cost which contributes to the sustainability of this approach.

Figure 1: An SMS-based Traceability System



Assessing Consumer Demand

The project attempted to understand consumer preferences and also measured their willingness to pay for safety certification of free-range duck. Sales of duck from the certified supply chain provided valuable information about markets. Information on consumer demand not only promotes private sector involvement, but also informs public policy as consumer behaviour can impact policy effectiveness.

1. Local Markets Dominate: The majority of duck and chicken consumed by households in Ho Chi Minh City is purchased in wet markets, or small open air markets that are located in almost all neighbourhoods in the city. This is despite the growth of supermarkets, and indicates that the convenience and quality of local markets still drives poultry consumption decisions. This finding contrasts sharply with surveys done in the wake of early HPAI outbreaks, and suggested that Ho Chi Minh City households have reaffirmed strong traditional preferences for local/legacy varieties.
2. Safety is a Top Concern: Consumers care about safety over other quality characteristics for duck, and are more concerned about HPAI and other poultry diseases than any other safety-related issues. This finding holds despite high levels of existing government certification (73% of all purchases) and presents a private branding opportunity to finance development of credibly certified supply chains for duck and perhaps other livestock products.
3. Certification Increases Retail Sales Volume: The poultry shops selling ducks from this project were better able to sell their full duck inventory during the project period. Retailers purchase fresh duck on a daily basis, so inventory management is a major issue for these small retailers. Supermarkets participating in the project reported their highest level of weekly duck sales *ever,* and a sales volume that was 32% higher than the average.

4. Consumers are Willing to Pay: This project utilized an economic experiment to measure willingness to pay for safety certified free-range duck. Given the choices made by participants for ducks with different types of certification, the overall willingness to pay for certification of the duck from this project was about 12,800 VND or US$ 0.71. This is about 20% of the price of the ducks offered in the experiment. The premium for individual characteristics (such as production standards) varied considerably across districts in the study, which indicates that localized marketing could be a good strategy for distributors and retailers.

Conclusion

This brief note discusses the findings of a pilot study, establishing a safety certified free-range duck supply chain in Ho Chi Minh City. In addition to their specific findings, the approaches used in Ha Noi and Ho Chi Minh City provide general principles about how similar projects could proceed and how safety certified supply chains can support HPAI control programmes.

1. Certified supply chains should utilize existing institutions, even with the understanding that some practices will have to change. Creating a supply chain independent of existing markets would slow down the introduction of certified supply chains, significantly increase costs, and might lead to displacement of eligible incumbent market actors. It should be recognized that, across the GMS and in most developing countries, supply chains like those studied here are populated by networks of low income entreprenneurs, and thus the pro-poor multiplier effects of the proposed approach can be very substantial.
2. When initiating certified supply chains, a small number of innovations should be introduced. These should be innovations that can easily be adopted by the private sector in a short period of time without large infrastructure investments, complex technology adoption, or dramatic changes in traditional practices. With replication, the benefits of certified supply chains become apparent and gain support.
3. Consumer preferences for safer poultry provide both the social and financial basis for certified supply chain approaches. Household surveys and other types of economic analysis not only provide information on the willingness to pay for certification, but also information on consumption and attitudes can underpin future marketing efforts.
4. Feedback mechanisms are critical. The involvement of existing institutions reinforces this through visibility to various stakeholders. Projects of this nature must have links to government, the private sector, and the broader community involved in HPAI control. Over time, all of these actors will need to be involved in building up the scope and capacity of certified free range poultry supply chains.

Certified supply chains for free range poultry have the potential to be important part of HPAI control policies in Viet Nam as well as in other countries. These supply chains meet growing consumer demand for safe poultry, and free-range and smallholder producers already produce poultry breeds that are preferred for meat quality. This is an important opportunity to leverage private preferences and incentives in the advancement of public health and livelihoods, making it attractive to policymakers and the private sector alike.

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