For information
on 8 June 2010

LegCo Panel on Food Safety and Environmental Hygiene

Poultry Slaughtering Centre

Purpose

This paper briefs Members on the outcome of an assessment of the risk of human infection by avian influenza (AI) viruses associated with the live poultry trade in Hong Kong, and on the Administration's decision to shelve the development of a Poultry Slaughtering Centre (PSC) in Hong Kong.

Background

2. Since 2006, the Government has been actively pursuing the development of a centralised poultry slaughtering centre in Hong Kong with a view to achieving the goal of segregating humans from live poultry. The Government last consulted the Panel on Food Safety and Environmental Hygiene (the Panel) of the Legislative Council (LegCo) on the proposed legislative amendments concerning the slaughtering facility on 13 November 2007.

3. While we were proceeding with the preparatory work for the PSC, the AI incidents in local wet markets in June 2008 triggered off the introduction of a statutory prohibition of overnight keeping of live poultry at the retail level and a Buyout Scheme which subsequently reduced the number of farms to 30, wholesalers to 23 and retail outlets to 133. The declining consumption of live chickens was further hit by an AI incident in a local farm in December 2008.

4. Given the reduction in size of the live poultry trade, the Administration had to make an updated assessment on the risk of AI outbreak in Hong Kong and review the scope and scale of the proposed PSC.

Scientific Assessment of AI Risk

5. The Administration conducted a scientific assessment in late 2009/early 2010 to evaluate the risk of human infection by AI viruses associated with the live poultry trade in Hong Kong. The Scientific Committee on Emerging and Zoonotic Diseases[1] (Scientific Committee), chaired by Professor Yuen Kwok-yung and comprising doctors, veterinarians, microbiologists, and experts discussed the assessment report on 26 March 2010 and noted the following –

(a) in early 2004, AI outbreaks were widespread in many Asian countries/economies. Subsequently, infection has spread to over 60 countries/economies in different continents. Since then, with the improvement in the knowledge and capacity for detection of the disease as well as strengthening of AI preventive and control measures, the disease pattern has shifted from widespread outbreaks to isolated and sporadic ones, particularly in those places with vigilant measures in place to control and prevent highly pathogenic avian influenza (HPAI) outbreaks. The number of countries reporting detection of HPAI viruses in domestic poultry/wildlife to the World Organisation for Animal Health has reduced by 68% in the past few years; and

(b) over the years, the Government has put together a package of measures to prevent and control AI outbreaks in Hong Kong, such as the introduction of a chicken vaccination programme, the enhancement of biosecurity measures at local farms, wholesale market and retail outlets, the requirement of animal health certificates for imported chickens, the implementation of no overnight stocking of live chickens at the retail level and the banning of keeping backyard poultry.

6. The Scientific Committee agreed that the risk of AI to Hong Kong has been significantly reduced in recent years. The Committee confirmed the efficacy of the control and surveillance measures at all levels, and agreed that any extra efforts in pursuing further segregation of humans from poultry at the retail level will only yield marginal results in containing the AI risk. The Committee suggested that we need to maintain vigilance against AI as the situation is dynamic, and that the current measures need to be maintained and effectively reinforced.

[1] Changes in social and ecological conditions including population growth and movement, food and eating habits, environmental and other factors play a part in the emergence of zoonotic or potentially zoonotic diseases. Diseases normally confined to animals may find a path to human beings and cause illness as a result. To tackle these problems from the scientific perspective, Scientific Committee on Emerging and Zoonotic Diseases is set up by the Centre for Health Protection.

7. Hong Kong has adopted preventive vaccination despite that we have no endemic H5 AI infection in poultry. Since March 2003, the existing H5N2 vaccine (named Intervet Nobilis) has been used on local poultry in Hong Kong, and there has been only one reported outbreak of H5N1 HPAI on a local farm (December 2008). The existing H5N2 vaccine is still largely effective in protecting local poultry from H5N1 HPAI virus. The Scientific Committee noted that the Administration had commissioned an investigation group on vaccine study to conduct research and tests on the efficacy of the existing H5N2 vaccine, and to conduct comparative studies of alternative vaccines. The information and data gathered would facilitate the Administration in the choice of the most suitable vaccine.

AI Surveillance Programme

8. To enable early detection of AI virus and prevention of AI outbreaks, the Government has implemented a comprehensive surveillance programme for both local poultry and imported poultry since 1998. Since the end of 2002, the surveillance programme has been extended to cover wild birds, captive wild birds in recreational parks and pet birds in the market. The Agriculture, Fisheries and Conservation Department (AFCD) has also been offering sick and dead wild bird collection service to the public since October 2005. Key developments since the AI surveillance programme was put in place are listed as follows –

(a) **Farm**: In the span of seven years between March 2003 and April 2010, there has been only one reported outbreak of H5N1 HPAI on a local farm (December 2008). The outbreak led to culling of all chickens in that farm, another chicken farm located within 3-kilometre radius of the infected farm and Cheung Sha Wan Temporary Poultry Wholesale Market, and suspension of local and imported live poultry including day-old chicks and pet birds supply for 21 days. Subsequent investigations concluded that the virus could have been introduced to the farm by droppings of infected wild birds. This outbreak did not result in onward transmission of virus among farms;

(b) **Retail markets**: Since the end of 2003, H5N1 HPAI viruses were detected once in June 2008 in retail markets. On-going surveillance conducted in retail outlets by the University of Hong Kong found that the isolation rate of H9N2 viruses in 21 months has significantly dropped from 5.11% before banning the keeping of live poultry overnight in retail markets in July 2008 to 0.09% after the commencement of the new practice (see **Table 1**). As H9 is a good indicator of the loading of avian flu virus in the poultry population, the results show that the risk of AI at the retail level has been successfully controlled at a stable and low level;

Table 1. Surveillance of H9N2 in retail markets conducted by the University of Hong Kong

	Before the ban on overnight keeping of live poultry in retail markets	After the ban on overnight keeping of live poultry in retail markets
No. of samples collected	4 186	3 300
No. of positive H9N2	214	3
Isolation rate	5.11%	0.09%

(c) **Wild birds**: Results from wild bird surveillance have also shown that although H5N1 HPAI viruses have been detected intermittently in dead wild birds in Hong Kong over the past five years, the number of dead wild birds found with H5N1 HPAI viruses has demonstrated a substantial downward trend.

Commercial Viability of the Proposed PSC

9. Consumption of live chicken has been declining in recent years, particularly so after the 2008 Buyout Scheme. Relevant figures are at **Annex A**. We have commissioned a consultant to conduct a commercial viability study (the Study) and to ascertain market interests in operating the proposed PSC.

10. The market sounding exercise conducted in the second half of 2009 indicated that there was lukewarm interest among potential operators and that the proposed model was commercially not viable. The project is considered unattractive in commercial terms.

11. The Study also found that a substantial segment of our community, in particular the culinary sector, is still very endeared to retaining live chicken sale in Hong Kong.

Overall Risk Assessment

12. While influenza H5N1 cases have decreased in 2009, the Government maintained a high degree of vigilance as infections are still occurring in some countries. Owing to all the stringent biosecurity and hygiene measures in place, the Government considers the risk of poultry infection with AI viruses at import, farm, wholesale, retail and transportation levels has been significantly reduced, and that the risk of human infection through contact with live poultry now remains at a minimal level. Based on the available findings of studies in AI infected places[2], the avian-to-human transmission of influenza H5N1 virus remains very limited at present.

13. Implementation of central slaughtering and the ban of live chicken sale at the retail level will not completely eliminate the chance of AI outbreaks in Hong Kong as outbreaks may depend on occurrence of a series of low probability events. Local farms could still be subject to outbreaks and wild birds including migratory birds remain as a medium of virus transmission. For instance, in early 2009, a total of 38 wild bird and poultry carcasses were found along the western coastline of Hong Kong, of which nine were found to be positive of H5N1 AI virus.

Way Forward

14. In view of the above, we propose to maintain the status quo and to shelve the development of the PSC. This is a science-based decision,

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[2] See for example, Santhia, K., et al. "Avian influenza A H5N1 infections in Bali Province, Indonesia: a behavioral, virological and seroepidemiological study." Influenza.Other Respi.Viruses. 3.3 (2009): 81-89.

Vong, S., et al. "Risk factors associated with subclinical human infection with avian influenza A (H5N1) virus--Cambodia, 2006." J.Infect.Dis. 199.12 (2009): 1744-52.

Wallensten, A., et al. "No evidence of transmission of H5N1 highly pathogenic avian influenza to humans after unprotected contact with infected wild swans." Epidemiol.Infect. 138.2 (2010): 210-13.

grounded in an assessment of the local situation. As long as the AI risk is kept low in that our biosecurity measures remain effective and there being no such significant changes to the avian flu virus that it would pose new threats to public health, the PSC project should not be revived in future.

(a) Containing the chicken population in Hong Kong

15. To reduce the likelihood of human contact with live poultry, the Government introduced a voluntary surrender scheme and a buyout scheme for poultry retailers, wholesalers, transporters and farmers in 2004/05 and 2008 respectively. As a result, the number of retail outlets was reduced from over 800 prior to the introduction of the first voluntary surrender scheme to 133 at present, wholesalers down from 87 to 23, and poultry farms from 192 to 30[3]. The total licensed rearing capacity of poultry farms in Hong Kong has also been reduced from 3.9 million in 2004 to about 1.3 million at present. The supply of live chickens in Hong Kong, including those imported from the Mainland, has declined from a daily average of 92 000 chickens in 2003 to only 16 500 in 2009. The reduction in these numbers has greatly contributed to containing the chicken population and chicken supply in Hong Kong at a steady level, thus minimising the chance of human contact with live chickens. To prevent the AI risk from rekindling, the Government should maintain the status quo for the number and rearing capacity of chicken farms and the supply of live chicken.

(b) Enhanced measures on AI prevention

16. To further keep up with the momentum of our surveillance programme under the status quo option, we would implement a basket of enhanced surveillance and control measures at all levels of the live poultry supply chain –

Level	Enhanced Measures on AI Prevention
Farm	• Strict enforcement of biosecurity measures introduced since 2008
Wholesale	• Increasing the sampling size for H5 antibody titre testing in wholesale market for enhancing the precision of flock immunity estimates

[3] Immediately before the launch of the 2004/05 Voluntary Surrender Scheme, the number of live poultry retailers, wholesalers and farms was 814, 87 and 192 respectively. Immediately before the launch of the 2008 Buyout Scheme, the number of live poultry retailers, wholesalers and farms was 461, 71 and 52 respectively. At present, the number of live poultry retailers, wholesalers and farms is 133, 23 and 30 respectively.

Level	Enhanced Measures on AI Prevention
Retail	• Increasing the number of environmental samples taken by the University of Hong Kong at markets (samples per year to increase by 5% from the current some 3 400 to 3 570) • Enhancing surprise inspections to ensure strict compliance with hygiene measures (increasing inspection frequency from bi-weekly to weekly)
Import Control	• Continuing to conduct testing for H5 antigen and antibody titre level for every imported consignment • Increasing the testing of blood samples (by 10% from 18 to 20)

Apart from the enhanced measures listed above, a whole range of AI prevention measures have already been put in place since the first outbreak in 1997. A list of key measures is at **Annex B**.

17. Looking ahead, we would continue with our AI surveillance programme, keep abreast of the global situation and watch out for signs of re-assortment of AI viruses. In the event of AI outbreaks among local poultry in future, we would activate a series of response actions including culling operations of various scales, which have been proven highly effective in containing the spread of AI virus in the past. Should the outbreak become severe to an extent that, for instance, the virus has widely spread or local human infection cases are confirmed, the Administration might have to consider imposing even more stringent control on the sale and rearing of live poultry in Hong Kong.

18. Members are invited to note the way forward of the development of the poultry slaughtering centre set out in this paper.

Food and Health Bureau
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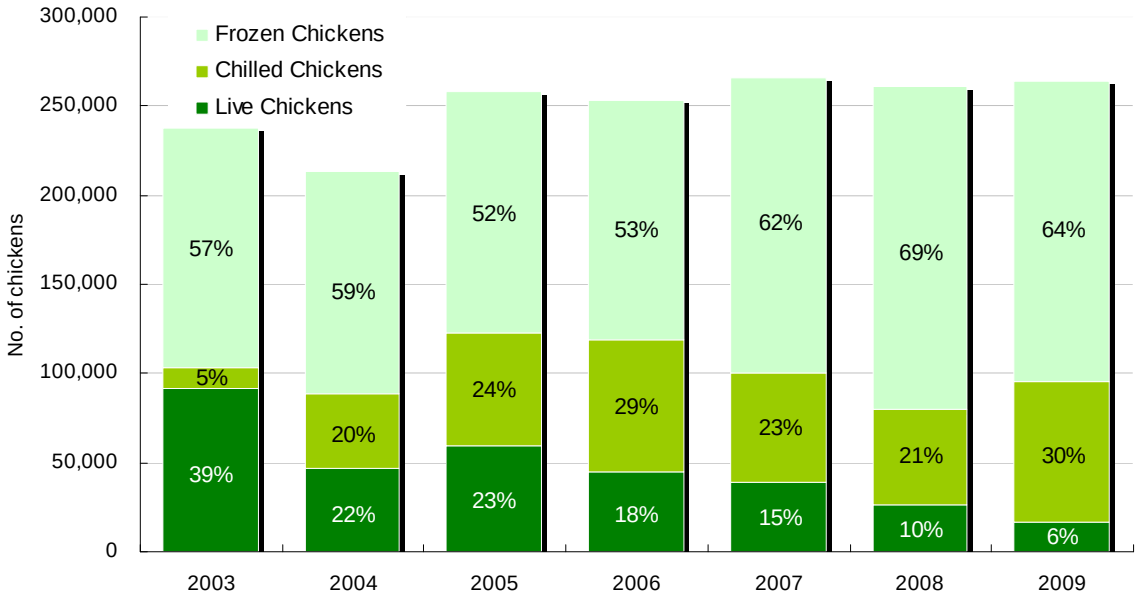
Annex A

Live chicken consumption on a declining trend

According to the Consultancy Study, the consumption of live chicken appears to be declining, although the overall level of consumption of chicken has increased since 2003 (see bar chart below). There have been noticeable changes in the consumption pattern among the various types of chicken. In terms of total daily consumption of chicken, live chicken has declined from nearly 40% (92 000 chicken) in 2003 to just 6% (16 500 chicken) in 2009. The growth in overall consumption has been due to chilled and frozen chicken, whose total market share has increased from about 60% in 2003 to 94% in 2009.

Average Daily Consumption of Live, Chilled and Frozen Chicken



Source: No. of Live Chickens: Actual chicken throughput provided by the Agriculture, Fisheries and Conservation Department.

No. of Chilled and Frozen Chickens: Consumption data in tonnes per annum converted to whole chickens per day assuming average of 1.5kg per chilled and frozen chicken provided by the Food and Environmental Hygiene Department.

Annex B

Key measures put in place to prevent AI infection since the first outbreak in 1997

To reduce the risk of infection spreading from poultry to humans, the Government adopts the following measures –

- vaccination for chickens in local farms and imported chickens;
- regulation of local farms including tightened biosecurity measures (for example, all farms should be bird-proof);
- import control (for instance, imported chickens must come from registered farms with health certificates);
- segregation policy (no waterfowl which are natural carriers of avian influenza (AI) viruses can be sold in retail outlets);
- hygiene requirements on wholesale market and retail outlets;
- surveillance targeted at humans, poultry and wild birds to ensure timely detection of the presence of any AI viruses in our environment;
- ban on the rearing of backyard poultry;
- prohibition of overnight stocking of live poultry at all retail outlets; and
- introduction of a voluntary surrender scheme in 2004-05 and a buyout scheme in 2008 to significantly reduce the number of live poultry traders.