

Advisory Council on Food and Environmental Hygiene

**Recommendations of the Consultancy Study on
the Way Forward of Live Poultry Trade in Hong Kong**

PURPOSE

The Government has commissioned a consultancy to study the way forward of live poultry trade in Hong Kong (“the Consultancy”). Following the presentation of updated findings by the Consultant to Members on 29 September 2016 (ACFEH paper 4/2016), this paper briefs Members of the final recommendations of the Consultancy.

BACKGROUND

2. Highly pathogenic Avian Influenza (AI) viruses have been circulating in many parts of the world and detected in Hong Kong. Since the first H5N1 AI outbreak in 1997 causing six fatalities, from time to time there have been imported cases of human infections of H5N1 AI and incidents of H5 AI found in the live poultry supply chain. H7N9 AI virus began to emerge since 2013. So far, there have been 21 imported cases of human infection recorded, two incidents of detection of H7N9 among imported live poultry in 2014 leading to culling of a total of over 41 000 live poultry, and a case of detection of H7N9 AI virus from environmental samples in a public market in 2016, in Hong Kong.

3. Over the years, the Government and the local live poultry trade, as well as the relevant Mainland authorities and the farms supplying Hong Kong, have collaboratively built up a resilient and stringent surveillance and control system for the purpose of reducing AI risk in Hong Kong. While there has been no local human infection of H5 or H7 AI virus after 1997, the emergence of H7N9 incidents has triggered the Government to consider, on public health grounds, whether Hong Kong being a place with scarce land resources and a densely populated city should continue with the sale of live poultry. To this end, the Food and Health Bureau commissioned in mid-2015 a consultancy study to advise on the way forward for the live poultry trade taking into account the current situation of the trade, consumption of

live poultry in Hong Kong, experience in comparable places, views of stakeholders and possible mutation of AI viruses. A copy of the Executive Summary of the Consultant's report is at [Annex](#).

4. A public consultation exercise is now being conducted to gauge public views on the recommendations before we formulate our decision on the way forward of live poultry trade in Hong Kong.

KEY FINDINGS OF THE CONSULTANCY STUDY ON THE WAY FORWARD OF LIVE POULTRY TRADE IN HONG KONG

Comprehensive Safeguarding Measures in Hong Kong

5. Comparing AI safeguarding measures implemented in some other places (including Singapore, Guangzhou and New York City) and having regard to the views of health experts consulted, the Consultant considers that the system of measures currently adopted in Hong Kong is generally amongst the most comprehensive and stringent in the world, and that the measures are effective in preventing human infection of AI, as evidenced by the fact that there has been no locally infected human case of H5 or H7 AI virus after the first AI outbreak in Hong Kong in 1997.

Views from Different Stakeholders

Culinary Preference of the Public

6. Consumption of live poultry is a culinary culture of Hong Kong. A survey conducted by the Consultant shows that a significant portion (47%) of members of the public indicating preference for live poultry over other forms of poultry (including freshly slaughtered¹, chilled² and frozen³), followed by those who are indifferent to all forms (32%), prefer other forms of poultry (14%) and do not eat poultry (7%). Despite the occurrence of a few AI cases in Hong Kong in the past two decades, members of the public are in general confident about the food safety of consuming live poultry. The survey results also show that about 43% of the Hong Kong people would be dissatisfied or very dissatisfied if they could no longer purchase live poultry in Hong Kong.

¹ Freshly-slaughtered poultry are slaughtered at designated retail outlets for sale. This poultry should be stored / displayed at temperatures between 0 - 10 degrees Celsius, preferably 4 degrees Celsius.

² Chilled poultry are slaughtered and packaged chicken stored at 0 – 4 degrees Celsius after going through a chilling process and has a shelf-life of five to seven days.

³ Frozen poultry undergo a quick freezing process; the poultry are kept under negative 18 degrees Celsius during storage and transportation. Frozen poultry can be stored for over three months or longer.

Divided Views of Health Experts

7. Views of experts of public health and animal health are divided. Some are of the view that live poultry supply could continue if existing safeguarding measures could be further enhanced, while some doubt if it is necessary to retain the sale of live poultry due to the potential AI risk of human contact with live poultry at retail level. Nevertheless, all the consulted experts support maintaining the local poultry rearing industry. The Scientific Committee on Emerging and Zoonotic Disease of the Centre of Health Protection recommends eventual cessation of the sale of live poultry at retail markets to control the risk of AI transmission to human.

Support Status Quo by Trade Operators

8. Local trade operators, including farmers, wholesalers, retailers, and transporters, in general support maintaining status quo for supplying both local and imported live poultry in Hong Kong, in order to preserve local culinary culture and minimise impact on the trade. Some trade operators have even expressed a wish to see an expansion of live poultry trade in the future.

RECOMMENDATIONS OF THE CONSULTANCY STUDY ON THE WAY FORWARD OF LIVE POULTRY TRADE IN HONG KONG

Maintaining Status Quo of Live Poultry Trade

Continuing Sale of Live Poultry at Retail Level

9. The survey shows a significantly larger share of people favouring live poultry over freshly-slaughtered ones. Nevertheless, as retail outlets are the main contact points between human and live poultry, the Consultant has also reviewed the alternative of supplying freshly-slaughtered poultry in place of live ones through the options of slaughtering at farms or in a centralised slaughtering facility. Neither option is considered feasible, due to limitation of farms to install the necessary bio-security and ancillary facilities to execute on-farm slaughtering, and the questionable commercial viability to sustain a centralised slaughtering facility given the prevailing level of demand.

No Need to Ban Importation of Live Poultry from the Mainland

10. Past AI incidents in Hong Kong have shown that the source of AI infected poultry could include both local and Mainland farms. Notwithstanding there have been AI cases on the Mainland over the years, having regard to the stringent safeguarding measures imposed on the Mainland registered farms that supply live poultry to the Hong Kong market, and the lack of concrete evidence showing higher AI risk in live poultry from the Mainland registered farms than those from local farms, the Consultant is of the view that there is no strong basis for banning importation of Mainland live poultry.

Proposed Bio-security and Safeguarding Improvement Measures

11. To go along with maintaining status quo for the live poultry trade, the Consultant has identified a number of bio-security and safeguarding improvement measures along the supply chain to enhance the separation of human and live poultry, and hygiene condition, as well as monitoring live poultry supply. Details of the measures are set out below.

Introducing additional vaccination against H7N9 AI virus

12. All Mainland and local chicken farms are already required to apply the bivalent H5 vaccine to chickens which have been found to provide sufficient protection against multi-clades of H5 AI virus. In the light of the increasing threat of H7N9 AI virus, the Consultant recommends that the Government should explore the feasibility of introducing additional vaccination to encounter the new challenge posed by H7N9 AI virus.

Strengthening Pre-sale AI Test at Local Farms

13. In addition to serology test on pre-sale batches of live chickens, and monthly PCR test on local farms conducted by the Agriculture, Fisheries and Conservation Department to monitor the antibody levels in chickens, and health conditions of chickens / environment respectively, the Consultant recommends that PCR test should be increased from the current monthly basis to each batch of chickens before they are delivered to the wholesale market, with a view to enhancing the safeguard for detecting possible AI viruses, and reducing the possibility of any infected live poultry entering the market.

Relocation of the Wholesale Poultry Market

14. The Cheung Sha Wan Temporary Wholesale Poultry Market (CSWTWPM) has been serving as the only wholesale poultry market in Hong Kong. Given that the wholesale market is the largest holding place of live poultry in Hong Kong, the Consultant suggests the Government to consider relocating the wholesale market to a less populated area, with a view to reducing the risk of AI virus exposure to the public. A possible option considered by the Consultant is a site at Fu Tei Au in Sheung Shui, which was originally earmarked for the purpose for establishing a centralised poultry slaughtering centre but was later put on reserve.

Reducing Staying Time of Minor Poultry at the Wholesale Market

15. While unsold live chickens are allowed to stay for a maximum period of 24 hours after they enter the wholesale market, there is no limit set on the number of days of minor poultry (such as pheasants, chukars, silky chickens and pigeons) kept at the wholesale market⁴. The Consultant suggests setting a limit (e.g. three to four days) for keeping minor poultry at the wholesale market together with compulsory emptying of poultry keeping cages for thorough cleansing and disinfection, with a view to reducing the staying time of minor poultry at the wholesale market, thereby reducing the AI risk at the wholesale level.

Upgrading of Live Poultry Retail Outlets

16. In addition to the existing safeguarding measures imposed at retail level (e.g. stringent hygiene codes, regular inspections by officers of the Food and Environmental Hygiene Department and AI tests), the Consultant recommends that live poultry retail outlets should be upgraded to provide enhanced physical barriers between consumers and the live poultry as far as possible, such as provision of separate holding areas for storage and display of live poultry, to further minimise the risk of human infection.

⁴ The arrangement aims to allow flexibility of the wholesalers concerned to fulfil any ad-hoc daily market demand and economic of scale of bulk shipment of minor poultry from the Mainland.

WAY FORWARD

17. Having regard to the findings of the consultancy study, we agree to the broad direction that the status quo should be maintained, i.e. sale of live poultry at retail level should be continued and import of live poultry from the Mainland should not be banned. Nevertheless, members of the public have been invited to forward to us their views on the Consultant's recommendation in Annex by 3 June 2017. We will take into account the views received when finalising our decision on this matter.

ADVICE SOUGHT

18. Members are invited to note the key recommendations of the consultancy study on the way forward of live poultry trade in Hong Kong.

Food and Health Bureau
April 2017

Executive Summary

This study (“the Study”), commissioned by the Food and Health Bureau (“FHB”), is conducted to propose the way forward of the live poultry trade in Hong Kong from the perspective of avian influenza (“AI”) control for safeguarding public health.

Live Poultry Trade

Poultry is an important source of meat in Hong Kong. Over the past 20 years, the total poultry consumption in Hong Kong has shown an increasing trend.

Poultry is available in different forms in the market including live, freshly slaughtered, chilled, frozen and prepared. Chilled, frozen and prepared chickens are mostly imported. Live chickens are supplied by both local farms and registered farms on the Mainland, and freshly slaughtered chickens are produced from these chickens. According to the Agriculture, Fisheries and Conservation Department (“AFCD”), in 2016 the local poultry industry produced HKD400 million worth of produce, which accounted for over 38% of the total produce produced by the local agriculture industry.

The live poultry trade has occasionally been affected by occurrence of avian influenza incidents since the first one occurred in 1997. The Government has since then taken various actions to control the spread of disease and ultimately to safeguard public health. Except the first incident in 1997, so far there has been no confirmed locally infected human case of H5 or H7.

Culinary Preference

A telephone survey was conducted by the Study Team in November and December 2015 with an aim to collect information on the culinary preference of the general public and their views on the way forward of live poultry trade. 1,000 valid responses from the general public were collected.

The survey results showed that nearly half (47%) of the respondents still preferred the consumption of live chickens to other forms of chickens.

Consumption of live poultry is considered a unique culinary culture of the Hong Kong population.

Survey results also showed that about 43% of the respondents would be dissatisfied or very dissatisfied if they could no longer purchase live chickens in Hong Kong.

AI Risks and Existing Safeguarding Measures

According to the World Organisation for Animal Health (“OIE”), both H5 and H7 AI viruses need to be put under close surveillance, and OIE should be notified of incidents caused by H5- or H7-infection of poultry due to their serious socio-

economic or public health consequence. Other avian influenza such as H7N7, H7N3, H10N7 or H6N7 and H9 are usually less virulent.

Since the first human case of H5N1 AI infection occurred in Hong Kong in 1997, numerous safeguarding measures have been imposed by the Government to prevent the outbreak of avian influenza in Hong Kong. These measures can be classified as “preventive”, “surveillance” and “remedial” in nature –

- *Preventive* – Preventive measures include vaccination of poultry, bio-security requirements at the farm level, certification of poultry from the Mainland, strict hygiene requirements in wholesale market and retail outlets, thorough cleansing of transport cages and vehicles, banning overnight stocking of live poultry at all retail outlets, etc.
- *Surveillance* – Surveillance programmes for early detection of signs of AI infection include frequent collection of samples from live poultry and environment at all levels of the live poultry supply chain, and dead bird carcasses reported territory-wide for AI virus testing.
- *Remedial* – In dealing with AI cases, rapid response is of the essence to minimise the chance of human infection. Such responsive measures include detention and culling of infected live poultry, thorough cleansing and disinfection of the nearby environment, etc.

Based on the study of the AI safeguarding measures in other cities in the world and the views of health experts collected, the system of measures currently adopted in Hong Kong is generally amongst the most comprehensive and stringent.

Owing to the safeguarding measures, there has been no locally infected human case¹ of H5N1, H5N6 and H7N9. However, the AI viruses have previously been detected via surveillance measures in different levels of live poultry supply chain, including farm, wholesale, and retail levels.

Although the probability of outbreak of AI in Hong Kong has been kept to minimum by existing safeguarding measures, potential risk of human infection of AI through contact with live poultry shall not be overlooked.

Since the emergence of H7N9 on the Mainland in 2013, as at end December 2016, the total number of cases reported globally had reached 819². According to the World Health Organisation (“WHO”), most such human infection cases had involved contact with infected poultry or exposure to contaminated environments, including live poultry markets. Evidence also shows that H7N9 viruses have become enzootic among poultry in some parts of the Mainland and are unlikely to

¹ There are imported human H5N1 and H7N9 cases and local human cases of H9N2. The latter is considered less virulent.

² Avian Influenza Report, Volume 12 Number 53, published by Centre for Health Protection, HKSARG
<http://www.chp.gov.hk/files/pdf/2016_avian_influenza_report_vol12_wk53.pdf>

be eradicated³. It is also noted that the AI incidents in Hong Kong have all been related to H7N9 since 2014.

Stakeholders Views on the Way Forward of Live Poultry Trade

Stakeholders' views on the future of live poultry trade are divided. There is no public consensus on whether the retail sale of live poultry should continue.

A health expert panel discussion involving five health experts covering major disciplines of public and animal health and 55 trade operators were conducted on 20 April 2016. Another two health experts who were not available for the discussion have provided views on the related subjects.

Some of the health experts participating in the panel agreed that the sale of live poultry at retail level could continue if existing safeguarding measures were further enhanced. Some experts cast doubts if it was necessary to retain the sale of live poultry at retail level due to the potential risk of human contact with live poultry at retail ends. ***Nevertheless, all the health experts supported maintaining the local poultry rearing industry.***

For the general public, with reference to the survey conducted 39% of the respondents did not have any explicit views on the future of live poultry trade, 35% supported prohibiting sales of live chicken at retail level while 26% did not support such a measure. However, as mentioned earlier, 43% surveyed would be dissatisfied or very dissatisfied if they could no longer purchase live chickens in Hong Kong.

Trade operators in general supported maintaining status quo with supply of both local and imported live poultry, which was considered important in preserving local culinary culture and minimising the impact on the trade.

Since the stakeholders' views on the way forward of live poultry trade in Hong Kong have shown to be divided, it should be discriminative when taking into account the views of different stakeholders due to their different positions and knowledge levels on AI risk.

³ "Recommendation on Control of the Risk of Transmission of Avian Influenza to Humans in the Long Term", published by Scientific Committee on Emerging and Zoonotic Diseases, dated July 2016.
<http://www.chp.gov.hk/files/pdf/recommendation_on_control_of_the_risk_of_transmission_of_avian_influenza_to_humans_in_the_long_term.pdf>

Recommendations on The Way Forward

Considering the strong culinary preference for live chicken of Hong Kong people, the prevailing AI risk, and the effectiveness of existing safeguarding measures implemented in Hong Kong to safeguard public health, it is recommended that live poultry trade in Hong Kong should be maintained. This will preserve the culinary culture of Hong Kong people and minimise the impact on the trade operators.

The Study Team has also deliberated the potential changes to the existing mode of operation for the live poultry trade to further reduce the risk of AI infection in human, including:

- Banning of live poultry importation
- Banning of live poultry trade at the retail level

For the first potential change which is to ban the importation of live poultry from the Mainland, the Study Team has found no concrete evidence showing that imported live poultry carry higher risk of AI than that of the local live poultry, in that:

- In reviewing the past AI incidents, evidence shows that the AI incidents happened on both local and imported live poultry.
- Stringent safeguarding measures have been imposed on both imported and local live poultry.

At the same time, according to the survey, live poultry imported from the Mainland is still preferred by some of the Hong Kong population owing to their perceived better meat texture and taste, and often lower price than that of local poultry. Therefore, the importation of live poultry should be maintained.

For the second potential change which is to ban the live poultry trade at retail level, live poultry will need to be slaughtered before delivery to the retail outlets. However, centralised slaughtering at individual farms or centralised slaughtering has been deemed unviable due to reasons of either space, technical or commercial constraints.

While the live poultry trade remains in Hong Kong, in view of the prevailing AI risk, it is strongly recommended that safeguarding measures should be further improved under the existing operation mode of live poultry trade.

Measures that are both effective in mitigating AI risk and feasible to be implemented are recommended for the Government's consideration and further study. First of all, in addition to the bivalent Re6+Re8 vaccine (which can provide sufficient protection against prevailing clades of H5 AI virus) currently used by all local chicken farms and registered farms on the Mainland, considering the increasing risk of H7N9, it is strongly recommended that the Government should

explore the feasibility of introducing additional vaccination in local chicken farms against the new challenge posed by H7N9 AI virus.

Second, for local live poultry, further to the monthly Polymerase Chain Reaction (“PCR”) test (virological testing) and regular and pre-sale serological tests, it is recommended that PCR test should be conducted for each marketable batch before delivery to the wholesale market. This could provide an additional safeguard for detecting AI virus, and thus reducing the possibility of any infected live poultry entering the market.

Third, the live poultry retail outlets are the main contact points between the general public and live poultry. Although numerous safeguarding measures, including stringent hygiene code, regular inspection and sampling, have been applied in the retail outlets, it is recommended that the outlets be upgraded to enhance separation by providing physical barriers. The suggested separation may be conducted in different degree in view of various constraints confronted by different live poultry retail outlets such as their physical locations, scale of operation, a need for re-designing of the market, etc., and should be handled with certain flexibility. Dedicated study and layout design may be required for individual outlets to enhance separation to some extent. The physical barriers in the retail outlets are expected to further minimise the contact between the general public and potential viruses, hence reducing the risk of human infection.

Fourth, it is recommended that the wholesale market at Cheung Sha Wan be relocated to a less populated suburban area. Given that the wholesale market is one of the largest holding place of the live poultry in Hong Kong, relocating the wholesale market can reduce the risk of virus exposure to the public.

Finally, it is recommended to set up a maximum number of days (e.g. 3 to 4 days) for minor poultry staying in the wholesale market, plus compulsory emptying of poultry keeping cages for thorough cleansing. By reducing the staying time of live poultry in the wholesale market, the AI risk at the wholesale level can be further reduced.

Conclusion

In conclusion, the decisions on the way forward of the live poultry trade in Hong Kong are not easy. Based on the study of the current situation and views from interviewed health experts, it is noted that there is no system that can attain zero risk. Nonetheless, the safeguarding measures against avian influenza currently adopted in Hong Kong are regarded as one of the most comprehensive and stringent in the world, and have been effectively keeping the risk of human infection to a minimal. Besides, survey results showed that there was a strong culinary preference for live chickens. Therefore, it is recommended that the live poultry trade in Hong Kong, including the sale of live poultry at the retail level, should be maintained.

Nevertheless, to further safeguard public health, improvement measures have been studied and proposed. The Government should keep in view the developments, including the prevailing AI risk in the region, the occurrence of AI

cases in Hong Kong and the neighbouring places, and consider the implementation of these improvement measures. Costs of these proposed measures are subject to further studies.

Last but not least, the recommendations on the way forward in this Study are made on the basis of the current AI risk level. If AI risk level increases significantly in the future (which is beyond current comprehension), the Government may wish to reassess the necessity of changing mode of operation in the live poultry trade, or even banning of the live poultry trade. Signs of an increasing risk level may include confirmed local cases of human infection, increasing detection of AI in live poultry or environment in Hong Kong, and occurrence of sustained human to human transmission.