

POTENTIAL COST OF AFRICAN SWINE FEVER VIRUS (ASFV) TO MALAYSIA

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### Abstract

African Swine Fever virus (ASFV) was first identified in East Africa in the early 1900s as a disease causing high mortality in domestic pigs (*Sus scrofa domesticus*). The disease only affect pigs, can be spread quickly and fatal. Malaysia, a country with domestic pig-farming industries have taken measures to tighten importation of pigs and pork products from affected countries, in fear of the spread of the disease. Infection in the domestic pig-farming industry will require the government to undertake massive eradication measures, such as culling activities, quarantine and closure of pig-farms which will result in heavy losses for the industry as well as affect food security. In retrospect, some of the emergency measures undertaken by the government to curb the disease, such as implementing import restrictions may be challenged by the affected exporting countries. The challenge could be carried out through the dispute settlement mechanism in World Trade Organization. Defending the actions by the government and the potential ramifications of the retributive actions are also potential costs of ASFV to Malaysia.

*Keywords:* African Swine Fever, import restrictions, food security, control

### **THE ORIGINS OF AFRICAN SWINE FEVER VIRUS (ASFV)**

African Swine Fever virus (ASFV) is a devastating haemorrhagic viral disease of pigs, affecting domestic and wild pigs of all ages and sexes (World Organisation for Animal Health-OIE, 2019). It was first identified in East Africa in the early 1900s as a disease resulting in high mortality in domestic pigs (*Sus scrofa domesticus*). In 2007, reports of ASFV was recorded in Georgia, the Caucasus region of Eurasia and since then it has spread to surrounding countries such as Armenia, Azerbaijan and then Russia. By end of 2019, the disease is present in nine European Union member countries, namely Belgium, Bulgaria, Slovakia, Estonia, Hungary, Latvia, Lithuania, Poland and Romania. (European Food Safety Authority- EFSA, 2019). Despite culling and control mechanism by the affected countries, the ASFV continue to spread.

Amid fears, the disease reached China, the worlds' biggest pork producers which produces an estimated 54,040 metric tonnes of pork in 2018 (USDA Foreign Agricultural Service, 2019). Within a short time, trans-boundary spread of the disease was recorded in other East Asian countries such as Korea, Taiwan and Mongolia. According to Dr. Matthew Stone, OIE Deputy Director General for International Standards and Science on 20 July 2020, currently there are 51 countries affected by ASFV. In the ASEAN region, the disease has been reported in Philippines, Brunei, Viet Nam, Cambodia, Laos and Thailand. Malaysia remain to be a country with ASFV- free status but challenges are building up for Malaysia to keep the disease out of the country and at the same time allow trade flows freely.

The impact of ASFV to the pig farming industry of the infected countries are enormous. ASFV is highly virulent for domestic swine (pigs) and remains a global threat because no effective vaccine is available to eradicate the disease (Kolbasov, Titov, Tsybanov, Gogin &

Malogolovkin, 2018). In the case of Russia, the first reported incidence of ASFV was reported in 2007. Since then, the Russian pig farming industry suffered massive losses. It was reported that, for the period between 2007-2017, there were more than 1,000 cases of ASFV outbreaks which resulted in deaths of estimated 800,000 pigs in the 46 regions across Russia (The Federal Service for Veterinary and Phytosanitary Supervision, 2018). Production of backyard swine (pigs) industry decreased by almost half, from 1,119 tons of pork in 2007 to 608 tons of pork in 2017 (Kovarev, 2018). As there are no effective vaccines available to treat the virus, the disease remains active in Russia, and unable to be contained.

### **The Pig Farming Industry in Malaysia**

The pig farming industry in Malaysia currently has more than 1,748,547 million heads of pigs valued at RM5 billion (Department of Veterinary Services Malaysia, 2020). Most of these are reared in 614 commercial farms. There are limited numbers of backyard pig farms in Malaysia as the pig farming industry is highly regulated, in part due to the occurrence of Nipah virus outbreak in 1998/1999.

Prior to the Nipah virus outbreak, there were 2.353 million population of pigs being reared in Malaysia in year 1998, and nearly a million of head of pigs were being exported (Department of Veterinary Services Malaysia, 2020). The numbers sharply dropped to 1.368 million heads by end of 1999, and there were no longer any exports of pigs from Malaysia until today. Instead, in year 2010, Malaysia began importing pigs and pigs products to fulfil increasing demand by the consumers in the country as the domestic production were not able to fulfil the demand.

The Nipah virus outbreak in 1999, was a zoonosis case in which the animal virus jumped to human, resulted in 265 persons diagnosed with acute encephalitis with 105 deaths. Over one million pigs in Malaysia were culled in the efforts to eradicate the disease, and it placed a severe strain on the billion-dollar pig-farming industry. The government also spent considerable amount of money to conduct widespread of pig surveillance as well compensating the pig-farmers for the loss of pigs (Looi and Chua, 2007). Due to the Nipah virus outbreak, Malaysia is highly sensitized towards any new virus affecting the pig-farming industry as the industry has suffered major setback due to the previous outbreak.

### **Preventing the Spread of ASFV into Malaysia**

World Organisation of Animal Health (OIE) has reiterated there are no published treatment or vaccine for ASF virus. Therefore, currently the most effective way to curb the transmission of the disease is through preventive measures. According to the OIE, prevention in countries free of the disease depends on stringent import policies, ensuring that neither infected live pigs nor pork products are introduced into areas free of ASF.

According to OIE, the virus can be spread easily through a multitude of pathways, namely through:

- a. oral-nasal excretion/secretion
- b. blood;
- c. raw meat;
- d. carcasses;
- e. offal;
- f. faeces and urine;

- g. soil;
- h. scavenging insects;
- i. hematophagous insects and ticks;
- j. fomites;
- k. food/kitchen waste; and
- l. grass and other vegetables.

In the case of the spread of the disease into Georgia, the Caucasus region of Eurasia, the government suspected that the virus may be introduced via ships entering through the Poti port, carrying contaminated meat and meat products. And since most pigs are kept on a free range, scavenging basis, access to dumped waste is a mechanism for infection to occur (FAO Empress Watch, 2007). Therefore, strict preventive actions are necessary to maintain ASFV-free country status, especially for Malaysia as the cost of carrying out eradication measures of the disease would be too burdensome. Once the virus enters a country and infects the pig population, the control and management of the disease would be much more difficult to carry out. Complete eradication of the disease in infected pig-population, involves rapid diagnosis, culling and disposal of all animals on the infected premises, thorough cleaning and disinfection, movement controls and surveillance. These eradication measures are labour intensive, costly, time consuming and prone to failures as there are many ways for the disease to be spread. Furthermore, the virus is highly resistant in environment and can survive for years in frozen carcasses.

Recently, Russia faced issues of products sold in the domestic market that were infected by ASFV. In 2019, there were reports of sausages containing ASFV sold across 136 supermarkets and food stores in 39 Russian regions, almost half of the country's territory.

Although parts of the products were seized and destroyed, large amounts of the products were sold and consumed by customers (Vorotnikov, 2020). Introduction of the infected products to the domestic pigs or wild pigs' population, through food waste, for example, would ultimately result in the outbreak of the disease in Russia, again.

Considering these matters, Malaysia implemented several preventive measures to maintain the ASFV-free status of the country. Beginning 2018, Malaysia placed temporary import restrictions of pigs and pork-related products from ASFV affected countries (Department of Veterinar Services Malaysia, 2020). The import restriction was based on the declaration of ASFV disease in the OIE, or through reports of ASFV incidences in the affected countries. The first country to be restricted from exporting live pigs and pork products to Malaysia are Poland, Belgium and China in 2018. In 2019, the temporary restrictions were expanded to include Thailand, VietNam, Cambodia, Hong Kong, Myanmar, Laos, Republic of Korea and Indonesia. In addition to the temporary import ban, Malaysia also restricted tourists from bringing in any pork-based products by hand-carry or luggage even for private consumption. Announcements were made in flight and around the airport, as well as press releases and news article to inform the public about the new measure.

Malaysia also carried out clinical supervision at commercial pig farms and wild pigs' area, whereby blood samples were taken from the pigs and were diagnosed for any trace of the ASFV disease. The surveillance activities are important to ensure that any case of ASFV could be detected at the earliest instance, to avoid outbreak of the disease from occurring. Furthermore, in preparation to mitigate the risk, Malaysia have also conducted ASFV outbreak simulation exercise to test the readiness of participating agencies in Malaysia. In the event of outbreak of ASFV in Malaysia, eradication exercise will require support and coordination of

various agencies, such as the National Disaster Management Agencies (NADMA), Department of Veterinary Services, Department of Health plus ancillary support from the armed forces, civil defence department, police and fire and rescue department.

In addition to the above measures, one of the infection routes identified for ASFV is through improper disposal of pork-waste, or other infected livestock waste disposal. Therefore, Malaysia has also conducted liaison sessions with waste management operators at ports throughout the country with regards to livestock waste disposal to provide information and advised on the proper waste management to avoid the spreading of the disease.

### **Criticism of the Preventive Measures**

Nevertheless, the preventive measures implemented by Malaysia were not without criticism, particularly from the exporting countries. Countries that are affected by Malaysia's temporary measures of halting imports of pork and pork products, among others, include Belgium and Poland of the European Union. The European Union protested the temporary measure placed on imports of pork and pork products from Belgium and Poland, citing the commitments under the World Trade Organization's Agreement on the Application of Sanitary and Phytosanitary Measures (the SPS Agreement). The SPS Agreement, among other, requires WTO members to recognize equivalence measures applied by countries in containing spread of a disease.

Other countries have also introduced similar measures to either protect their ASFV-free status, or to curb further spread of the virus into their territory. For example, in 2014, Russia initiated ban of pig imports from European Union countries and in 2018, several countries in Southeast Asian Nation (ASEAN) also implemented import bans of pigs from EU and other



ASFV affected countries. Philippines, for example, ban imports of pork products from Mongolia, Belgium, China, Bulgaria, Czech Republic, Germany, Moldova, South Africa, Zambia, Latvia, Poland, Russia, Ukraine, Hungary and Japan in 2019. (Byrne, 2019).

### **Potential Cost of ASFV to Malaysia**

The potential cost of ASFV to Malaysia, therefore, could be categorised into two categories. One would be the potential cost implication of failing to curb the disease into Malaysia, and secondly, the repercussions costs of implementing the measures which are contested by the exporting countries.

#### ***Preventing Loss from ASFV***

ASFV highly contagious disease that has the capacity to rapidly spread, multiply and remain virulent for a long time in multiple media, regardless of borders. As there is currently no effective vaccine or treatment, ASFV can cause huge economic losses and severely affect food security. The measure to restrict imports of meat from countries with ASFV outbreak is a provisional precautionary measure on the basis of available pertinent information consistent with the SPS Agreement, which aims to protect human, animals and plants from diseases, pests or contaminants.

Effective preventive measure of the ASFV from spreading into Malaysia equals to protecting the livelihood of over 600 pig farms across Malaysia, valued at estimated RM5 billion, and the employment of almost 5,000 employees in the industry. In addition, it protects the related industries such as logistics sector, and further processing industry down the value chain.

In the event of ASFV infections in Malaysia, the government will have to implement eradication measures, similar to the experience of Nipah virus in 1998, which would be costly. During the Nipah virus outbreak, over a million pigs were culled and buried in massive graves, and the government provided compensation to the pig farmers in order to ensure cooperation by the farmers and avoid smuggling out of the pigs or pork products which may exacerbate the outbreak further. In addition, the Malaysian pig-farming industry may have difficulty to rebound if it suffers a second disease outbreak in the pig-population.

In the case of Russia, the Russian agricultural ministry stated on its website that ASF has led to the ministry spending of about 14.2 billion roubles (US\$ 220 million) in the last few years. This figure was only for anti-ASF monitoring, culling pigs infected with the disease and underpayment of taxes by the farms destroyed as a result of the outbreaks. (Vorotnikov, 2018).

### ***Potential Retribution Actions***

Some exporter countries have been very vocal with criticism with regards to measures taken by importing countries on ASFV. Dissatisfaction with import bans or restriction, may lead the disapproving country into taking further legal action towards Malaysia under the WTO. One example is the dispute settlement proceedings in the WTO initiated by the EU against the Russian Federation, due to the latter's temporary ban on import of pigs and pork-products from EU due to ASFV. In 2014, The EU filed a dispute against Russia's ban on imports of pigs and pork products on the basis of sanitary and phytosanitary reasons, from the EU as a whole (EU-wide ban), as well from four EU member States: Estonia, Latvia, Lithuania and Poland (EU member State bans) due to concerns related to ASFV. The dispute process took three years before the WTO Appellate Body, in 2017, confirmed that the ban by Russia was illegal under the

rule of international trade. As a result, Russia was obliged to bring its measures in line with WTO rules, and by failing to do so, may result in Russia having to compensate EU or worse, face trade sanctions.

The dispute settlement procedure in WTO is lengthy. A typical dispute process will normally take a year, and 15 months or more if the defendant files an appeal. The process also involves multiple reports submission, expensive legal representation, and multiple attendance to the consultation sessions in WTO office in Geneva, Switzerland. This process is burdensome and costly and would be further costly should the ruling by the WTO include orders of compensation payments to the affected countries. On the other hand, there would be a bigger loss if trade sanctions are imposed on Malaysia, as it will affect the whole country's income from international trade activities.

In addition, there may also be retribution actions by affected exporting countries, such as introduction of non-tariff measures on products of interest to Malaysia. It may also strain diplomatic relations between Malaysia and the affected countries and could potentially derail bilateral cooperation in other areas.

### **Other Measures to Be Considered**

According to the OIE, there are other measures Malaysia could implement to prevent the introduction of ASFV into the country to further complement the measures already in place. The current implemented measures rely on the vigilance and strict enforcement of biosecurity and quarantine at all entry points into Malaysia, awareness among pig producers and active

surveillance measures. In addition to these measures, the Department of Veterinar, Malaysia should carry out a scientific study, to determine the new appropriate level of protection (ALOP) for the country based on risk assessments and allocate sufficient resources to address the highest risks for the introduction and spread of ASFV based on the determined ALOP. The scientific based risk assessment and subsequent control mechanism would help Malaysia in arguing its case for maintaining strict import controls and quarantines, including the current temporary import bans on affected countries.

Malaysia should also leverage on various international fora to collaborate with interested countries to reflect on mechanisms to detect, mitigate, and respond to the risk of ASFV. The ASEAN Ministerial Meeting on Agriculture and Forestry (AMAF), provides the best avenue for Malaysia to discuss with ASEAN members on the risks and mitigation measures on ASFV, and to exchange information and experiences. This would be particularly useful as Malaysia shares some borders with ASEAN members and the risk of ASFV transmission is higher when the neighbouring countries are affected.

In addition, Malaysia should increase international engagements with affected countries to understand further about the disease, appraise existing mitigation measures by these affected countries and reflect on its successes or failures. This knowledge would allow Malaysia a better position in order to replicate or innovate Malaysia's mitigation measures which would allow resumption of trade while at the same time protecting Malaysia from exposure to the disease. Increased engagement and collaboration across relevant countries and enhanced information

sharing for ASFV would also improve diplomatic ties with affected countries with better understanding of each other's concerns and efforts undertaken to resume trade.

### **Conclusion**

ASFV remains to be one of the biggest threats towards the pig-farming industry in Malaysia. The continued spread of ASFV in Africa and Europe demonstrates a potential for further spread in other regions of the world. There are still gaps in current knowledge about the disease, and effective vaccines have yet been developed. There is a need for continued monitoring of the disease and identifying best measures to control the disease from spreading.

Current pro-active decision by Malaysia to implement preventive measures to curb the spread of the disease into Malaysia may be relevant, to prevent the potential loss in the pig-farming industry. The absence of ASFV cases in Malaysia, signals the effectiveness of Malaysia's control of the disease from reaching the country.

However, Malaysia must be mindful of the potential retribution actions by affected countries. The retribution actions such as initiation of dispute settlement in WTO, could potentially cost Malaysia time and money to defend the case as well as the possibilities of other forms of retaliation from affected countries that may affect the country's bilateral ties and income from international trade activities.

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