



**Australian Government**  
**Inspector-General of Biosecurity**

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# Adequacy of preventative border measures to mitigate the risk of African swine fever

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Review report No. 2019-20/02



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#### Review team and acknowledgments

Dr Naveen Bhatia and Glenn McMellon assisted the Inspector-General in this review.

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# Review process

## Purpose

To examine the adequacy of the Department of Agriculture, Water and the Environment's preventative border measures to mitigate the risk of African swine fever (ASF) entering Australia.

## Scope

This review considered the department's pre-border and at-border measures to prevent entry of ASF-infected material into Australia (for example, pork and pork products, and fomites).

The review considered:

- the adequacy of the department's biosecurity risk-mitigation strategies, action plans and operational plans, through:
  - pre-border and at-border intelligence activities to keep ASF out
  - verification activities and outcomes to ascertain residual risk for major pathways
  - sampling and testing regimes of intercepted and seized pork and pork products to inform decision-making at policy and operational levels
- the authority for decision-making and processes to mitigate biosecurity risks at the border
- the adequacy of the department's biosecurity risk management resources in addressing expanding demands to maintain Australia's biosecurity risk exposure at an appropriately low level.

## Out of scope

This review did not examine:

- the effectiveness of the department's controls to manage residual biosecurity risks associated with commodities other than pig meat and pig meat products
- policy and activities that are the responsibility of external stakeholders, including state and territory agencies and governments, individuals and biosecurity industry participants
- commercial considerations.

## Conduct of review

During this review, I consulted extensively within and outside the department.

In particular, I:

- conducted an entry meeting and subsequent in-person meetings with key stakeholders to
  - communicate the review’s objectives and scope
  - outline responsibilities
  - identify risks related to the review and any appropriate mitigation strategies
  - obtain initial background information regarding management of approved arrangements
  - provide an opportunity for all parties to discuss the proposed review process and seek points of clarification
- discussed preliminary data and information requirements with relevant departmental officers
- conducted a desk audit of relevant departmental data, documentation and procedures relevant to importation of pig meat and pig meat products
- undertook site visits of airports, mail centres, sea cargo import depots and express airfreight depots to observe and examine the department’s procedures and operations for managing imports
- considered potential risks, including whether
  - the department’s risk-based methodologies for assessment, screening and verification, used in detecting meat and meat products and residual biosecurity risks, are adequate and correctly applied by staff or industry stakeholders
  - powers under the *Biosecurity Act 2015* are adequate to manage risks in a timely and efficient manner
  - the department has timely internal mechanisms to identify and respond effectively to emerging risks
  - the department has sufficient resources or capabilities available to address current and new or emerging biosecurity risks
  - standard operating procedures and instructional material used by departmental staff are easy to follow and up to date
  - ICT systems efficiently support operational requirements and departmental processes
  - stakeholders provide the department with appropriate or timely information to allow it to carry out its responsibilities
  - the department provides stakeholders with appropriate or timely information to allow them to carry out their responsibilities.

As required by the *Biosecurity Act 2015*, I presented my draft report to the Director of Biosecurity for departmental consideration. The department’s response to my recommendations is included in this report. I also provided a copy of this report to the Director of Biosecurity and the Minister for Agriculture.

# Summary

African swine fever (ASF) is a highly contagious disease that poses a significant biosecurity risk to Australia's pig industry. An ASF outbreak in Australia would be very difficult to eradicate and would have serious impacts on the domestic pig industry and pork export opportunities.

To manage ASF, Australia only permits the import of pork and pork products from countries or zones that have been approved by the department as ASF-free—unless the items have been retorted or cured for long enough to inactivate the virus. Commercially imported uncooked pig meat from ASF-free countries or zones must be processed at approved arrangement facilities upon arrival to address other disease risks, and is not considered a high-risk entry pathway for ASF.

Between August and September 2018 acute ASF outbreaks were reported in piggeries in China and in wild boars in Belgium. Australia responded by suspending the import of pig meat from Belgium. The department also created an ASF web page to promote awareness.

The department identified international travellers and mail from ASF-affected countries as the 2 highest risk pathways. Between 5 November 2018 and 1 April 2019 the department trialled increased interventions of travellers and mail from China. Since November 2018 the department has banned the personal import of pork jerky and pork biltong into Australia. The department also assessed biosecurity risk associated with the import of several other commodities and implemented revised import conditions to mitigate the risk of ASF.

Samples of pork products seized between December 2018 and February 2019 tested positive for the presence of the ASF virus fragments. The testing also confirmed that ASF virus fragments could persist in highly processed pork products. Following the testing, the department extended the heightened intervention period for travellers from China. In May 2019 the department also began heightened intervention of travellers from Vietnam. This was a significant delay from when Vietnam reported the first ASF outbreak in February 2019.

The department has continued 100% screening of express mail service articles and parcels from China through the mail centres, and is conducting ongoing increased intervention of targeted mail items from other targeted countries.

Beginning in November 2018 the department initiated a campaign to raise awareness among incoming travellers about ASF and the need to declare any food or pork products. This included the release of a new in-flight passenger video, advertising in Australian-based Chinese newspapers, writing to airlines flying directly from China and Vietnam, increased signage at Australian airports and contacting Chinese tour operators.

By April 2019 ASF was widespread across Chinese provinces—resulting in the death of millions of pigs. ASF outbreaks have since occurred in Cambodia (April), Hong Kong and North Korea (May), Laos (June), the Philippines (July), Myanmar (August), South Korea and Timor-Leste (September), and the province of North Sumatra in Indonesia (December).

In September 2019 the department tested a batch of seized samples of pork products from targeted airports and mail centres. Almost half of the samples tested positive for ASF virus fragments. The majority of positive samples had come through mail facilities.

In 2018–19 the department seized over 31,500 pork products weighing more than 33.1 tonnes from international travellers. The Inspector-General of Biosecurity (IGB) considers travellers from ASF-affected countries, intending to work on Australian piggeries, the highest risk cohort. On a positive note, the proportion of travellers declaring pork products has risen to over 90% since the heightened intervention and awareness campaign. The department needs to find ways to achieve a similar success rate in the international mail pathway, where only about a third of seized products are correctly declared.

In October 2019 the department responded to requests from the IGB and commenced operations to determine whether the non-commercial express airfreight pathway is a significant risk pathway for illegal entry of pork products. The IGB noted that the data capture in the airfreight pathway is insufficient to assure the department that this pathway is low-risk for ASF entry into Australia. This pathway is subject to a separate IGB review.

The majority of pig meat enters Australia commercially through the sea freight pathway. Importers and customs brokers declare consignments using tariff codes through the Department of Home Affairs' Integrated Cargo System. Imported pig meat consignments using swine-specific tariff codes have a high rate of compliance compared to those using tariff codes that are not swine-specific, such as sausages or glands. The higher rate of non-compliance is possibly due to a higher reliance on product descriptions, which can be misleading.

The data indicates a significant quantity of potential ASF-risk material has been entering Australia via major pathways. Additional effort will be required to reduce ASF risk to an appropriately low level, particularly when ASF is detected in more nearby countries and is more widespread within affected countries.

ASF is not the only challenge confronting the department's biosecurity divisions. The department also faces major biosecurity risks, such as brown marmorated stink bug. To address changes in trade and travel operations and border processing, the department must make major organisational changes within the same 3- to 5-year time frame as ASF prevention measures. These challenges require the department to prevent biosecurity risks and, at the same time, transform biosecurity systems and operations.



This report focuses on the prevention components of Australia's biosecurity measures to mitigate the risks posed by ASF, for which the department has primary responsibility. However, it does not diminish the comprehensive whole-of-government and industry efforts being made in post-border ASF preparedness, including important prevention measures at business and site levels.

This report identifies 3 strategic risks to the department's capability to effectively prevent ASF entering into Australia:

- inadequate agility, resulting in slow responses to evolving challenges like ASF
- inadequate agility and number of resources, resulting in ASF efforts drawing resources away from vital measures to mitigate other biosecurity risks to Australia
- inadequate organisational flexibility necessary for the department to address heightened ASF risk for at least 3 to 5 years, while transforming its biosecurity systems to address global growth in trade and travel, commercial system changes and changes in at-border processing of trade and travel.

The report takes an outcome-based approach to the assessment of ASF prevention readiness and summarises relevant observations and findings through an IGB assessment of key areas. The report provides recommendations arising from this assessment.

The report also provides an initial assessment of whether ASF prevention resource demands across the department may be threatening Australia's ability to appropriately mitigate similar biosecurity risks. Diversion of resources for crisis management (including ASF) from other parts of the biosecurity system is not sustainable and may increase the risk of severe pest or disease incursions and trade disruption. Constraints such as staffing caps should be removed for critical biosecurity assurance and oversight functions that are cost-recovered by various means. The department will need to review and bring to the government's attention the effects of resourcing levels and composition on future biosecurity risk management.

The department is responding well to the increased ASF risk, within current constraints. However, it must continually adjust and maintain vigilance to ensure that ASF measures appropriately address the ASF spread, trade and travel environment. The recommendations in this report aim to improve these measures.

# Recommendations

## **Recommendation 1**

The department should increase intervention on flights, especially from neighbouring countries affected by African swine fever, to capture adequate numbers of high-risk matches and determine resources required to mitigate the risk of African swine fever.

## **Recommendation 2**

Using detector dogs at major seaports, the department should screen passengers ending their cruise ship voyage in Australia through targeted operations to ascertain the rate of leakage of meat and meat products in the current manual screening by biosecurity staff.

## **Recommendation 3**

The department should increase screening of express mail service and parcels from African swine fever-affected countries (in addition to China) at targeted mail centres. The outcomes should be recorded electronically in a central register to allow for a quick post-hoc analysis to inform relevant policies and operations.

## **Recommendation 4**

The department should analyse the airfreight pathway to ascertain why incorrectly declared items have a higher compliance rate in this pathway compared to the mail pathway.

**Recommendation 5**

The department should work closely with commercial importers and brokers of pork products to ensure product descriptions on imported tariff products that are not swine-specific are accurate and include 'pork', where applicable.

**Recommendation 6**

The department should urgently expand the detector dog program, consistent with the increase in traveller numbers and mail volumes, to minimise entry of all undeclared meat and meat products into Australia.

**Recommendation 7**

The Australian Government should commit to ensuring adequate long-term (3- to 5- year) funding for African swine fever risk management, including border screening and enforcement. Funding for biosecurity measures (including strong intelligence and risk-based measures) should be linked to growth in traveller numbers, trade volumes and associated biosecurity risks.

**Recommendation 8**

The department should invest more in information technology systems in line with the Department of Home Affairs changes for seamless movement of arriving travellers. This will enable the department to use all available data for real-time, automated risk assessment.

**Recommendation 9**

The department should increase and sustain its awareness campaign in high-risk countries to target the mail and airfreight pathways, especially using social media platforms.

**Recommendation 10**

To target arriving travellers, the department should invest in real-time digital signage at major international airports that can be rapidly changed (including language) by a departmental officer using a mobile device.

### **Recommendation 11**

The department should consider developing a ‘just declare it’ alert that is automatically sent to arriving passengers’ mobile phones when they turn their phones off flight mode.

### **Recommendation 12**

The department should include additional criteria in risk assessment for flights from African swine fever- affected countries, including a focus on seasonal farm workers.

### **Recommendation 13**

The department should explore opportunities for new and expanded co-regulatory arrangements with targeted industry sectors, including those that use 2D and 3D CT scanners.



**Rob Delane**

Inspector-General of Biosecurity

23 March 2020

# Assessment of the department's African swine fever prevention readiness measures

	Measures in place	IGB assessment	Recommendation no.
1	Threat assessment of known and likely offshore sources of African swine fever, including: <ol style="list-style-type: none"> <li>primary ASF-infected risk regions</li> <li>most likely future risk regions</li> <li>hub airports and seaports.</li> </ol>	Optimal	Nil
2	Identification and assessment of major current and likely risk pathways, including: <ol style="list-style-type: none"> <li>traveller pathway</li> <li>mail pathway</li> <li>airfreight pathway</li> <li>commercial pathway</li> <li>other pathways.</li> </ol>	Satisfactory	1, 2, 3, 4, 5
3	Appropriate infrastructure and operational capability in place, including: <ol style="list-style-type: none"> <li>detector dogs</li> <li>X-ray scanners.</li> </ol>	Satisfactory	6
4	Coordinated, agile management arrangements with efficient cooperation, including: <ol style="list-style-type: none"> <li>inter-department management arrangements</li> <li>inter-division management arrangements.</li> </ol>	Optimal	Nil
5	Funding arrangements enable the department to respond appropriately and consider: <ol style="list-style-type: none"> <li>resourcing—quantity and flexibility</li> <li>other resourcing issues.</li> </ol>	Unsatisfactory	7
6	Adequate staffing ramp-up capability, including staff redeployment and recruitment.	Satisfactory	Nil
7	Adequate ongoing monitoring and adjustment of intervention measures deployed for major pathways.	Satisfactory	Nil

	Measures in place	IGB assessment	Recommendation no.
8	Regulatory powers and capability to apply regulation, including: a. appropriate regulations and processes b. frontline staff equipped to apply regulations.	Optimal	Nil
9	Appropriate technical support at all key sites	Optimal	Nil
10	Appropriate ASF-related data and management information, including: a. practical data capture systems b. timely, accurate management reports.	Satisfactory	8
11	Adequate public information about the biosecurity risk of ASF, targeted at: a. industry b. travellers c. the general public.	Optimal	9, 10, 11
12	Appropriate partnership with industry pre-border and at-border, including with: a. agribusiness sector b. import transport and logistics sector.	Optimal	Nil
13	Identification of post-border pathways linking ASF risk material to Australian pigs, including seasonal workers.	Satisfactory	12
14	Appropriate collaboration with: a. state and territory governments b. industry.	Optimal	Nil
15	Impacts of ASF on other biosecurity risk measures appropriately assessed and action taken, including: a. surge in brown marmorated stink bug incidents b. risk-return approach applied to resource re-allocation c. remedial and recovery plans in place for risk areas reduced in resources d. options for innovation examined to enable risks to be mitigated with reduced resources.	Satisfactory	13
16	Contingency plans for long-running ASF measures assessed, including: a. ministerial engagement b. track record of government responsiveness .	Satisfactory	Nil

Note: The IGB assessment rating for each measure integrates the ratings for sub-items.

## Chapter 1

# Threat assessment of known and likely offshore sources of African swine fever

## 1.1 Background

In 2018 there were about 781 million pigs worldwide. China led the world in pig production with over 440 million pigs—producing more than 54 million metric tonnes of pork. This was followed by the European Union at 150.2 million pigs (24.3 million tonnes of pork), USA at 73.15 million pigs (11.9 million tonnes of pork) and Brazil at 38.83 million pigs (3.7 million tonnes of pork) (Statista 2019).

The Australian pig industry is relatively small with about 3,700 pig producers annually producing about 420,000 tonnes of pig meat, of which around 10% is exported (ACIL Allen Consulting 2019). The gross production value of pigs is around \$1.3 billion (ABARES 2019). The majority of this production is under intensive indoor housing systems and is insufficient to meet domestic consumption. Around 50% of pig meat consumed in Australia is sourced from imported processed products—mostly from the European Union and the United States (Pitts & Whitnall 2019).

Australia also has an estimated 24 million feral pigs (Hampton et al. 2006), found mainly around wetlands and river systems. Australia's feral pig population creates a significant potential spread vector for the disease should it emerge. Animal pest and disease management measures, such as zoning and animal destruction, would likely prove ineffectual in controlling ASF's spread because feral pigs are distributed across most Australian farmland. In such a scenario, the virus would likely become endemic, crippling the country's \$5.3 billion pig industry and the livelihoods of pig farmers (Deloitte 2019).

### 1.1.1 African swine fever—outbreaks and spread

African swine fever is a contagious viral disease of pigs and is often associated with a mortality rate as high as 100%. Acute forms of ASF are characterised by high fever; anorexia; redness of skin on ears, abdomen and legs; abortion in pregnant sows; cyanosis; vomiting; diarrhoea; and death within 6 to 13 days. Subacute and chronic forms are caused by moderately or low virulent viruses, which produce less intense clinical signs that can be expressed for much longer periods. Mortality rates are lower but can still range from 30% to 70%. Chronic disease symptoms include loss of weight, intermittent fever, respiratory signs, chronic skin ulcers and arthritis.

The ASF virus was first detected in Kenya in 1909 and has now been identified in 50 countries. Between the 1960s and 1980s it spread across Europe, the Caribbean and Brazil. Most countries successfully controlled the outbreaks.

In 2007 it was introduced to Georgia and spread to the Russian Federation, Azerbaijan, Belarus, Armenia and Iran. Since then it has spread north and west into Europe and eastwards. Since 2015 ASF has continued to spread throughout Russia, the Ukraine, Estonia, Latvia, Lithuania, eastern Poland and Moldova. In January 2018 small ASF outbreaks in wild boar and domestic pigs were reported throughout Eastern Europe. In September 2018 ASF was reported in wild boars in Belgium, resulting in Australia suspending the import of pig meat from Belgium. In August 2018 acute ASF outbreaks were reported in China and by April 2019 the disease had spread to all Chinese provinces—resulting in the death of over a million pigs. ASF outbreaks have since occurred in Cambodia (April), Hong Kong and North Korea (May), Laos (June), the Philippines (July), Myanmar (August), South Korea and Timor-Leste (September) and the province of North Sumatra in Indonesia (December).

The ASF virus is found in all body fluids and tissues of infected pigs. It can be spread by direct contact with infected feral or domestic pigs; people movement of contaminated meat products; contact with contaminated premises, vehicles, feed, farm equipment and clothing or footwear; vectors such as biting flies and ticks (although there is no scientific data around this for Australian species); feeding infected swill or meat scraps to pigs; and contaminated effluent and water (ACIL Allen Consulting 2019).

Pigs are infected mainly through the oro-nasal route after contact with infected pigs or after feeding on virus-containing pork or contaminated products. All excretions and secretions of infected pigs such as blood, faeces, urine, semen or saliva can contain the virus (Bellini, Rutili & Guberti 2016). Therefore, the virus spreads effectively through contact between pigs. For example, in Russia in 2008–09 the initial stages of the ASF epidemic were caused by direct contact of infected wild boars with each other and free-range domestic pigs in backyard farms (Gogin et al. 2013). The risk of transmission via embryos is considered negligible.

ASF can survive in a protein-rich environment and in a variety of swine products for months. It can persist in unprocessed frozen pork for 3 years or more, with some reports suggesting that it can persist indefinitely. It is resistant to high temperatures and requires exposure to a temperature of 60°C for at least 20 minutes for inactivation (Costard et al. 2013). Pork that is fresh, frozen, smoked, salted or dried may contain infective quantities of the ASF virus. Commercially processed products, such as ham or cured pork loin, contain no active virus 140 days after processing (Penrith & Vosloo 2009).

The resistance of the virus to inactivation also means that transmission is possible via fomites such as contaminated clothing and shoes, equipment, luggage and vehicles (Bellini, Rutili & Guberti 2016). ASF outbreaks in Spain, the Netherlands, Belgium, Cuba, Georgia, and more recently, in China are results of feeding of food waste (swill feeding) that contained the ASF virus or had come into contact with contaminated meat or meat products. Chinese authorities banned the practice of swill feeding following a study that found 62% of their first 21 outbreaks were related to feeding kitchen waste to pigs (FAO 2018). The practice of swill feeding is illegal in Australia.

As there is no vaccine or treatment for ASF, the only response to control ASF is to cull infected and at-risk pigs. China has about half the world's pigs and has lost about 38.7% of their pig herd to the disease. It was estimated that by the end of 2019, around a quarter of the world's pigs would be eliminated due to an ASF endemic (van der Zee 2019).



## 1.2 Regulatory control of biosecurity risks in Australia

### 1.2.1 International obligations

Biosecurity restrictions on imports must conform to Australia's rights and obligations as a World Trade Organization (WTO) member country. These rights and obligations derive principally from the WTO Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement).

The SPS Agreement provides a framework of rules to guide WTO member countries in the development, adoption and enforcement of sanitary (human and animal health) and phytosanitary (plant health) measures. The SPS Agreement provides WTO member countries with the right to use SPS measures to protect human, animal and plant health. The basic obligations are that SPS measures must:

- be applied only to the extent necessary to protect life or health and not be more trade restrictive than required
- be based on scientific principles and not maintained without sufficient scientific evidence
- not constitute arbitrary or unjustifiable treatment or a disguised restriction on trade.

Each WTO member country is entitled to maintain a level of protection it considers appropriate to protect health within its territory. This is called the appropriate level of protection (ALOP).

### 1.2.2 National regulatory framework

#### 1.2.2.1 Appropriate level of protection

The SPS Agreement defines the concept of ALOP (Beale et al. 2008). Australia's ALOP is expressed qualitatively as being 'a high level of sanitary and phytosanitary protection, aimed at reducing risk to a very low level but not to zero'. Successive Australian governments have adopted this conservative approach to managing biosecurity risks, reflecting community expectations about the importance of maintaining Australia's relative freedom from exotic pests and diseases.

Under this approach, commodities may not be imported unless biosecurity risks are reduced to a level consistent with Australia's ALOP. The Australian Government uses risk analyses to consider the level of biosecurity risk associated with importation of animals and animal material, consistent with SPS obligations and noting relevant World Organisation for Animal Health (OIE) standards.

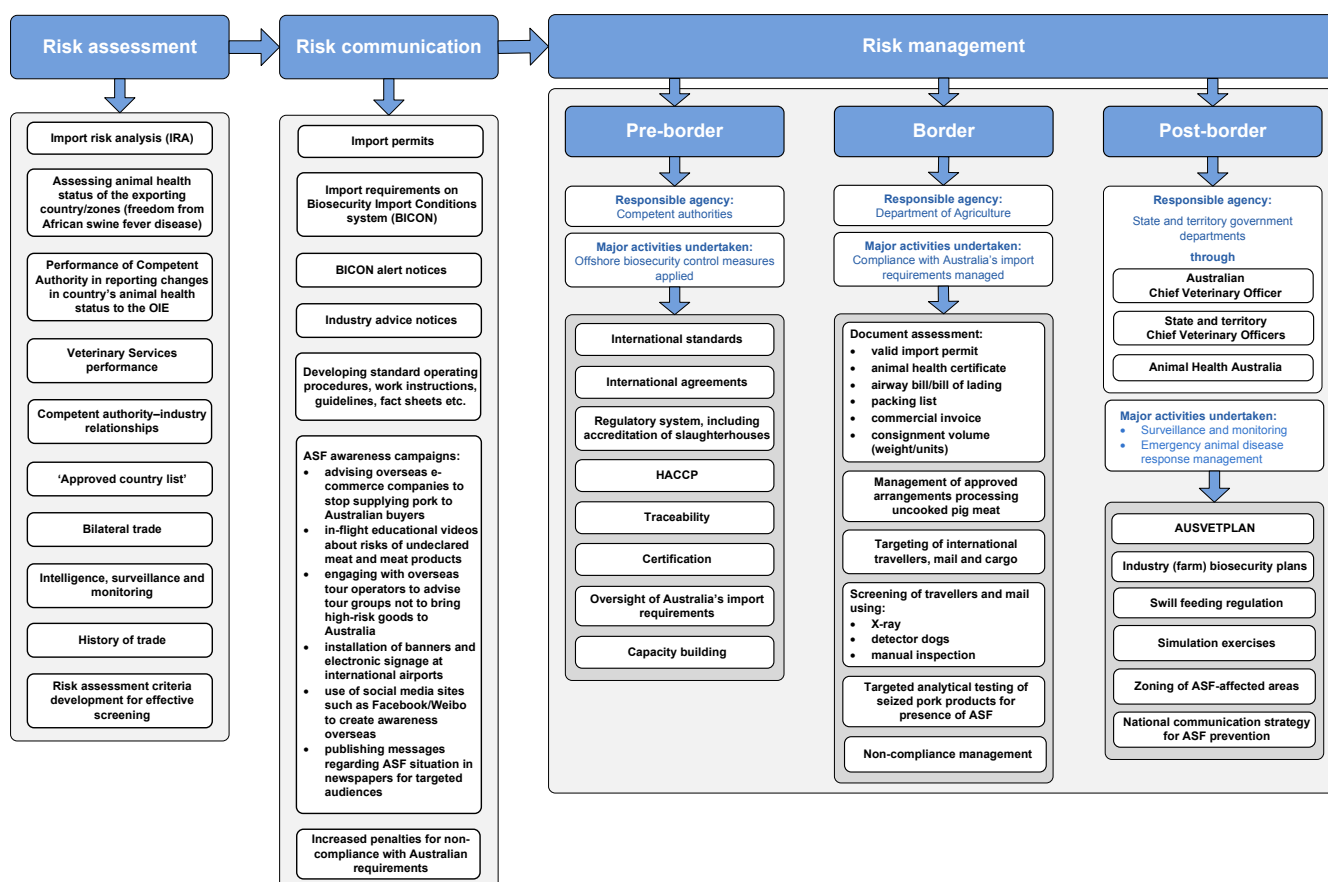
If the Director of Biosecurity finds that the risks associated with importing a commodity exceed the level of risk acceptable to Australia, risk management measures are proposed to reduce them to that level. If biosecurity risks cannot be reduced to an acceptable level, those imports are not permitted.

Australia manages the biosecurity risks associated with trade through the Department of Agriculture, Water and the Environment. As the lead regulatory authority, the department undertakes risk assessments and imposes various pre-border and at-border management measures to minimise the entry of regulated animal diseases (including African swine fever) into Australia through imported pig meat and meat products. Post-border activities include surveillance, monitoring, risk assessment, emergency preparedness and response planning. [Figure 1](#) shows the department's control measures for pig meat imported into Australia.

The department manages biosecurity risks associated with entry of imported uncooked, cooked and cured pig meat through:

- surveillance and assessment of global risks
- science-based import risk analysis to underpin import policies
- approval and auditing of overseas exporting countries and competent authorities (including veterinary services)
- setting pre-border and at-border controls and procedures for importation
- approval and auditing of the storing, processing and waste disposal of imported pig meat at approved arrangement facilities.

**FIGURE 1** Department control measures for pig meat imported into Australia



Source: Inspector-General of Biosecurity

### 1.2.2.2 Approval of countries

The department endeavours to manage as many biosecurity risks as possible offshore to keep risks far away from Australia. It does this by assessing and approving competent authorities (listed overseas government agencies) to certify pre-border measures.

The department must approve a country's competent authority (CA) for that country to be accepted to export to Australia. This involves a detailed evaluation of the CA's biosecurity services and its performance. The evaluation aims to provide the department with confidence that the CA is capable of providing independent, reliable and valid certification that exported pig meat meets Australia's import permit requirements.

The department also investigates issues of non-compliance or discrepancies in animal health certification. The department responds to incidents of non-compliance or other issues that are detected at the border by engaging with CAs to seek clarification and resolution of the underlying issue. All approved countries remain under general review and approval can be suspended at any time. The department publishes a list of approved CAs on the [Biosecurity Import Conditions \(BICON\) system](#).

The department has developed specific import requirements for that are approved to export pig meat to Australia (Table 1).

**TABLE 1** Countries approved to export pig meat to Australia with specific import requirements

Country of export	Permitted products	ASF—OIE country status	Changes to import conditions
Belgium	Uncooked pig meat	Present (limited area)	Import of uncooked pig meat suspended on 18 September 2018 (backdated to 24 July 2018)
Canada	Uncooked and cooked pig meat	Never reported	Unchanged
Denmark	Uncooked and cooked pig meat	Never reported	Unchanged
Finland	Uncooked pig meat	Never reported	Unchanged
Ireland	Uncooked pig meat	Never reported	Unchanged
Italy	Dry-cured pig meat	Present (limited area)	Limited products allowed
Netherlands	Uncooked pig meat	Absent	Unchanged
New Zealand	Uncooked and cooked pig meat	Never reported	Unchanged
Spain	Dry-cured pig meat	Absent	Limited products allowed
Sweden	Uncooked and cooked pig meat	Never reported	Unchanged
UK	Uncooked and cooked pig meat	Never reported	Unchanged
USA	Uncooked and cooked pig meat	Never reported	Unchanged

### 1.2.2.3 Legislative controls

The key risk management measure to minimise biosecurity risks reaching Australia is the power of the Governor-General to prohibit by legislation the introduction or importation of certain goods into Australia. This power is contained in the *Biosecurity Act 2015* and has been used to protect Australia from the risks associated with pig meat. The Governor-General has proclaimed that the importation of pig meat is prohibited unless the Director of Biosecurity (the Secretary of the Department of Agriculture, Water and the Environment) grants a permit. The Director of Biosecurity could refuse to grant an import permit (eliminating the risk) or grant an import permit with a range of risk-management measures (for example, disease testing and onshore processing) to reduce risk to appropriate levels. The department manages this through the import permit process (see [1.2.2.4](#)).

Food, including pig meat, entering Australia is subject to the *Imported Food Control Act 1992*, the *Imported Food Control Regulations 1993* and the *Australia New Zealand Food Standards Code*. Examining compliance with standards for imported food under the *Imported Food Control Act 1992* is out of scope for this review.

### 1.2.2.4 Import permit process

Import permits state the requirements that must be met for imports to enter Australia. The department assesses all import permit applications to determine the biosecurity risks posed by the proposed import and whether measures are required to reduce the level of identified risk to one that is acceptably low—for example, inspection on arrival or further processing of uncooked pig meat in approved arrangement facilities. The department's import process is supported by the BICON system (see [1.2.2.5](#)). The process is also supported by online and manual permit systems and forms. The systems are intended to support the consistent application of risk management measures for a specific commodity requiring an import permit. The process is also a way of collecting information about imports, which can feed into the setting of risk management measures.

### 1.2.2.5 Biosecurity Import Conditions system

The department's BICON system contains the import requirements and risk management measures for more than 20,000 animal, plant, microbial, mineral and human products, and provides:

- information to the public and importers on the import process and the import requirements for permitted commodities
- instructions to departmental staff on the entry-management process for each commodity, including risk management measures.

## 1.3 Primary ASF-infected risk regions

To detect ASF the department conducts ongoing tracking and intelligence scanning through reputable veterinary information channels and media monitoring.

The department's Chief Veterinary Officer is Australia's delegate at the World Organisation for Animal Health (OIE). He is also the President of the OIE World Assembly. The department has close ongoing involvement with the OIE and has many bilateral relationships. This ensures the department is well informed of actual and suspected ASF outbreaks in other countries.

The department's animal biosecurity staff have extensive networks that provide valuable intelligence on the status and prognosis of ASF infection globally and the applied measures for prevention, control and eradication of the disease.

## 1.4 Most likely future risk regions

The department closely monitors the spread of ASF in the region. It also responds to reports of ASF spread in neighbouring countries, such as Indonesia. The department regularly reviews and updates import conditions to prevent ASF entering Australia. It has worked with local counterparts in Papua New Guinea (PNG) to address ASF risks. In October 2019 the department undertook a collaborative survey in the New Britain and New Ireland provinces of PNG, which was focused on raising public awareness of ASF and gathering intelligence on the disease. The program has also supported PNG counterparts with capacity development and education activities. These activities focused on ASF in other high-risk regions and locations, such as ports and airports.

Since the first outbreak of ASF in China in August 2018, ASF has been reported in 10 other countries in Asia. The ASF risk is likely to remain for some years, due to the direct and hub transit airline connections and mail and airfreight routes from these countries to Australia. This will put increasing pressure on Australia's biosecurity defences.

The prevalence of ASF in the region and evolving risk profiles in Europe and elsewhere require the department to remain vigilant. However, this review raises significant concerns about Australia's future capacity to mitigate the risks of an increasing global spread of ASF. These concerns are based on the operational biosecurity resource levels currently available to the department and the low likelihood of transformational innovation in ASF intervention measures within the next 5 years.

The first ASF outbreak in Indonesia was reported from North Sumatra and is likely to spread to other provinces, including Bali. The department has commenced preventative measures and increased intervention on the approximately 180 direct weekly flights that operate between Indonesia and major Australian cities.

On 4 December 2019 China released a 3-year plan to eradicate ASF and accelerate the recovery. Australian industry, the department and state biosecurity agencies will benefit from monitoring both the ASF response and industry recovery strategies being developed and applied in China and other ASF-affected countries.

## 1.5 Hub airports and seaports

Singapore and Hong Kong are 2 major hub airports used by visitors and Australians transiting from ASF-infected countries such as China, Vietnam and the Philippines. It can be difficult for the department to determine the movement of travellers arriving from hub airports such as Singapore, Hong Kong and Dubai (and smaller transit airports). Expanding the use of movement data in risk assessments to target high-risk passengers who transit through these hub airports or have been in rural areas could help the department efficiently utilise available resources.

## Chapter 2

# Identification and assessment of major risk pathways

## 2.1 Background

Australia remains free of the major epidemic diseases of livestock and many of the serious pig diseases. This is due to geographical isolation and the application of biosecurity procedures for imported livestock, genetic material and animal products. Serious animal diseases such as foot-and-mouth disease, ASF, Aujeszky's disease, classical swine fever, porcine reproductive and respiratory syndrome, post-weaning multi-systemic wasting syndrome, rabies and transmissible gastroenteritis do not occur in Australia. Australia is also free of many of the less significant or less widely distributed diseases of pigs, such as porcine epidemic diarrhoea.

While ASF has never occurred in Australia, an incursion could prove difficult or impossible to eradicate as the entire affected pig population would have to be destroyed. An outbreak of ASF in Australia could have a significant negative impact on the country's agricultural economy. It would lead to a direct loss in production, less productivity of remaining stocks, losses across other points in the supply chain and related industries, negative impact on exports, loss of reputation in international markets and reductions in consumer supplies.

The department monitors serious animal diseases, including ASF and foot-and-mouth disease in other countries by:

- subscribing to international animal health surveillance, intelligence and alert systems. These systems contain formal reporting of disease incidents and outbreaks to OIE by the competent authority in countries affected
- reviewing and analysing interception data, including across pathways for pork and pork products entering Australia. This involves recording product types and quantities entering from high-risk countries, and laboratory analysis for presence of ASF virus in the intercepted products.

The IGB considers a number of pathways could potentially lead to the entry of ASF into Australia:

- international travellers, including visa workers for Australian agriculture
- international mail, including express and general airfreight
- pork meat and other pork products, including pet food and treats
- sea freight
- porcine tissue, fluids and germplasm
- contaminated feed imports
- ad hoc entry of cruising yachts and illegal boats into northern Australia.

## 2.2 Traveller pathway

### 2.2.1 Air travellers

#### 2.2.1.1 Risk assessment

The department develops and deploys evidence-based risk assessments for traveller cohorts using the Home Affairs' ICS system. This enables matching of travellers' Advanced Passenger Information (API) to high-risk entities after traveller check-in to automatically identify travellers of interest for biosecurity purposes prior to their arrival in Australia. The department risk assesses each traveller for the likelihood of carrying undeclared actionable biosecurity material, regardless of whether the traveller is a declarant or non-declarant to questions 6 to 9 on the Incoming Passenger Card (IPC). This involves placing alerts on those travellers who match the highest risk profiles. Due to IT and resource limitations, caps are imposed on the number of interventions. However, this is prioritised in accordance with the risk assessment.

#### Recommendation 1

The department should increase intervention on flights, especially from neighbouring countries affected by African swine fever, to capture adequate numbers of high-risk matches and determine resources required to mitigate the risk of African swine fever.

#### Department's response: *Agreed.*

The department has increased intervention for high risk flights, commencing late 2019. By the end of 2020, an additional 500,000 passengers will have been screened under the \$66.6 million African swine fever (ASF) package announced in December 2019.

#### 2.2.1.2 Seizure of pork and pork products, 2016 to 2019

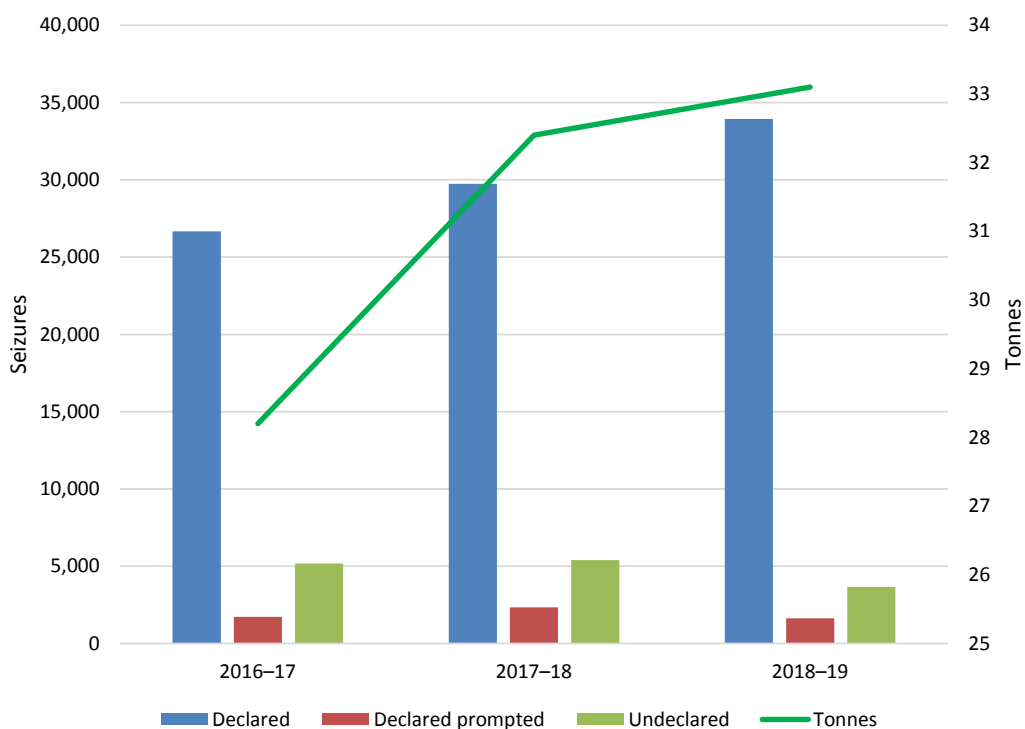
Between July 2016 and June 2019 the department, working with the Department of Home Affairs, seized about 93.7 tonnes of pork and pork products from international air passengers arrived in Australia ([Figure 2](#)).

From 2016–17 to 2017–18 there was an 11.7% increase in the total quantity of pork product seized. This included an increase in declared (11.5%), declared prompted (35.7%) and undeclared (4.3%) pork products.

From 2017–18 to 2018–19 there was still an increase in total pork products seized, but at a much lower rate (4.7%). During this period, there was also a 14.2% increase in declared pork products, a 30.2% reduction in declared prompted and a 69.6% reduction in undeclared pork products. This change in travellers' behaviour could be attributed to the department's:

- increased intervention response
- increased awareness campaigns to declare goods on entering Australia (see [Chapter 11](#)).

**FIGURE 2** Seizures of pork and pork products, air traveller pathway, 2016–17 to 2018–19



### 2.2.1.3 Top 10 countries for seizures, 2018–19

During 2018–19, 63% of the total pork and pork products (by weight) seized at Australian airports were from the top 10 countries (Table 2). These countries also accounted for three quarters of undeclared pork (by weight). Passengers from mainland China brought in 44.6% of the total amount of undeclared pork products. These passengers were more likely to bring in pork and pork products undeclared (18%). Country of origin was unknown for 383 kg (1.2%) of seized pork and pork products. Over 39,700 separate items were seized during 2018–19 and the average weight of each seized item was 842 grams. Over 2.3 tonnes of undeclared pork and pork products intercepted in travellers’ luggage poses a significant biosecurity risk that needs to be addressed.



**TABLE 2** Top 10 countries for pork product seizures, traveller pathway, 2018–19

Country	Declared items		Declared prompted		Undeclared		Total		% of total no.	% of total kg
	(no.)	(kg)	(no.)	(kg)	(no.)	(kg)	(no.)	(kg)		
China <b>a</b>	5,342	4,259	430	272	1,437	1,041	7,209	5,572	18.4	16.9
Vietnam <b>a</b>	2,099	3,616	88	97	245	300	2,432	4,013	6.2	12.1
Singapore	4,668	3,785	113	49	160	8	4,941	3,842	12.6	11.6
Philippines <b>a</b>	1,568	1,888	80	54	207	139	1,855	2,081	4.7	6.3
Thailand	1,581	1,377	57	28	160	96	1,798	1,501	4.6	4.5
Malaysia	1,363	1,036	51	29	81	45	1,495	1,110	3.8	3.4
USA	2,140	970	156	36	183	46	2,479	1,052	6.3	3.2
Indonesia <b>a</b>	703	548	71	42	129	72	903	662	2.3	2.0
Germany	1,054	528	21	5	33	14	1,108	547	2.8	1.7
Hong Kong <b>a</b>	779	470	42	12	55	28	876	510	2.2	1.5
Others <b>b</b>	12,225	11,003	502	272	914	519	13,668	11,794	34.8	35.7
Unknown	408	363	26	7	50	13	484	383	1.2	1.2
<b>Total</b>	<b>33,930</b>	<b>29,844</b>	<b>1,637</b>	<b>903</b>	<b>3,654</b>	<b>2,334</b>	<b>39,248</b>	<b>33,067</b>	<b>100</b>	<b>100</b>

**a** African swine fever-affected country. **b** Includes 187 countries.

#### 2.2.1.4 Ports of seizure, 2018–19

In 2018–19 Australia's busiest airports, Sydney (12.9 tonnes) and Melbourne (8.9 tonnes) accounted for about two-thirds of all pork and pork products seized from all international travellers. Brisbane (4.6 tonnes) and Perth (3.4 tonnes) accounted for 14% and 10.4%, respectively (Table 3). Together, these 4 airports accounted for over 90% of overall undeclared pork seizures for all airports.

**TABLE 3** Pork and pork products seized at Australian airports, 2018–19

Airport	Declared (kg)	Declared prompted (kg)	Undeclared		Total	
			(no.)	(%)	(no.)	(%)
Sydney	11,720	422	850	35.6	12,992	39.2
Melbourne	8,321	133	541	22.6	8,995	27.1
Brisbane	4,043	69	544	22.8	4,656	14.0
Perth	3,098	114	223	9.3	3,435	10.4
Adelaide	1,332	109	112	4.7	1,553	4.7
Coolangatta	602	9	40	1.7	651	0.7
Darwin	307	22	22	0.9	351	1.1
Avalon	187	3	29	1.2	219	0.6
Cairns	153	23	23	0.9	199	2.0
Canberra	82	2	5	0.2	89	0.3
<b>Total</b>	<b>29,845</b>	<b>906</b>	<b>2,389</b>	<b>100</b>	<b>33,140</b>	<b>100</b>

### 2.2.1.5 End-point survey

The department conducts random end-point surveys of international travellers to estimate the amount of biosecurity risk material that has not been detected by previous screening methods. The end-point surveys conducted between 1 November 2018 and 31 July 2019 detected 175 pork and pork products weighing 99.6 kg. For this period, the department determined the leakage rate in the traveller pathway was 0.45% for pork products.

### 2.2.1.6 Enhanced intervention, 5 November 2018 to 25 February 2019

In response to the recent spread of ASF through parts of Europe and China, the department has undertaken additional activities to ensure that its biosecurity measures continue to protect Australia from this disease.

Between November 2018 and May 2019 the department increased screening of travellers for pork products. This is considered the peak tourist season for international visitors to Australia. The department initially focused efforts on travellers originating from mainland China, due to the widespread outbreaks occurring there. About 2,300 or 14.7% of the total 15,040 pork products seized during this period were from travellers arriving from mainland China (Table 4). Overall, the department issued 1,055 infringement notices and warnings—39% of these were issued to travellers from mainland China. The 5 countries with the largest number of pork interceptions during this period were Singapore (3,511), China (2,319), United Arab Emirates (1,447), Hong Kong (1,145) and Malaysia (913). Singapore is a hub for flights from other countries.

**TABLE 4** Pork products seized during increased intervention, 5 November 2018 to 25 February 2019

Category	All flights	Leakage	Mainland China flights	Leakage
Pork products seized	14,996	74	2,296	27
Infringements issued	252	17	116	10
Written warning issued	803	37	295	10

Flights from mainland China carry approximately 1.5 million travellers to Australia every year. This amounts to approximately 69% of all travellers arriving from China. About 400,000 of these travellers are returning Australian residents and the remaining 1.1 million are visitors. During the enhanced intervention period, Australian citizens accounted for about 5.5% of the total seizures of undeclared pork. For the same period, Australian citizens also accounted for 16% of undeclared pork seizures from Singapore and 12% from Hong Kong.

During the enhanced screening period, samples of pork products—seized at international airports and mail-processing centres—have been tested at the Australian Animal Health Laboratory (AAHL) for the presence of ASF virus (Table 10). The increased intervention was intended as a trial ending in February 2019 but has been extended indefinitely following positive results from testing. The increased intervention has had a positive impact on the number of travellers declaring pork products. However, over 3 years, almost 2.4 tonnes of seized pork products were not declared. Non-declarant travellers pose the highest risk.

In April 2019 the department undertook a modelling exercise to determine the flights most likely to achieve results through increased traveller intervention on individuals arriving on flights from ASF countries. This resulted in a 30% increase in annual alerts on travellers arriving from mainland China and Vietnam. An increase on traveller alerts from other ASF-affected regions would result into annual screening of over 343,700 more travellers, including from Hong Kong, Indonesia, Malaysia, Singapore, the Philippines, South Korea and Taiwan.

Good modelling is dependent on accurate data. However, the department is limited by outdated and cumbersome IT systems, especially those that record traveller movements.

Beale et al. (2008) emphasised the need for strategic intelligence to underpin the risk-return approach to biosecurity:

Australia can only know which risk pathways and commodities are most threatening if it has collected and analysed relevant information. Good strategic intelligence on the animal and plant pest and disease status of neighbouring countries and trading partners is vital. This information ensures that biosecurity agencies can respond appropriately, including possibly modifying import requirements (p. 161).

### 2.2.2 Sea travellers

The department considers the sea traveller pathway to be low risk for the entry of ASF virus. It does not use either detector dogs or X-ray machines to screen sea travellers. The department performs manual screening of travellers' luggage at the exit. Limited data is available on meat and meat products entering Australia through this pathway because biosecurity officers have recording limits for entering information in the department's electronic data collection tool, Mail and Passenger System (MAPS) on products seized at the time of disposal. However, this pathway presents an ASF risk due to the recent ASF outbreaks in an Indonesian province and the large number of Australians who travel on cruises to Indonesia. The IGB recommends that the department screens cruise ship travellers ending their voyage in Australia. This would help determine any leakage (meat and meat products) in the manual screening currently being practised by the department's frontline staff.

#### Recommendation 2

Using detector dogs at major seaports, the department should screen passengers ending their cruise ship voyage in Australia through targeted operations to ascertain the rate of leakage of meat and meat products in the current manual screening by biosecurity staff.

#### Department's response: *Agreed.*

The department has commenced planning for targeted operations in the cruise vessel pathway. Current planning includes detector dogs as well as other biosecurity screening methods.

## 2.3 Mail pathway

International mail is divided into 4 classes:

- Letters—made up of postcards, enveloped letters, papers, brochures, books and magazines wrapped in plastic, not more than 500 g in weight and 2 cm thick.
- Other articles (OAs)—articles that are not of letter, parcel or express mail class, sorted into small OA (up to 500 g) or large OA (between 500 g and 2 kg).
- Parcels—articles that weigh over 2 kg and under 30 kg, maximum of 150 cm for any one dimension.
- Express Mail Service (EMS)—priority international mail service, can weigh up to 30 kg, maximum of 150 cm for any one dimension.

### 2.3.1 Mail risk assessment

The department develops national mail risk assessment strategies to target high-risk biosecurity risk material in international mail. It calculates risk assessment criteria using data recorded by biosecurity officers in the Mail and Passengers System (MAPS) and Australia Post volume data. MAPS data include routine detection records, end-point survey volumes and detections (known as leakage) and total stream volumes. Australia Post data cover volumes of each cohort arriving into Australia by international mail. Mail risk assessment is based on mail class and country of origin.

### 2.3.2 Interception of pork and pork products, 2016 to 2019

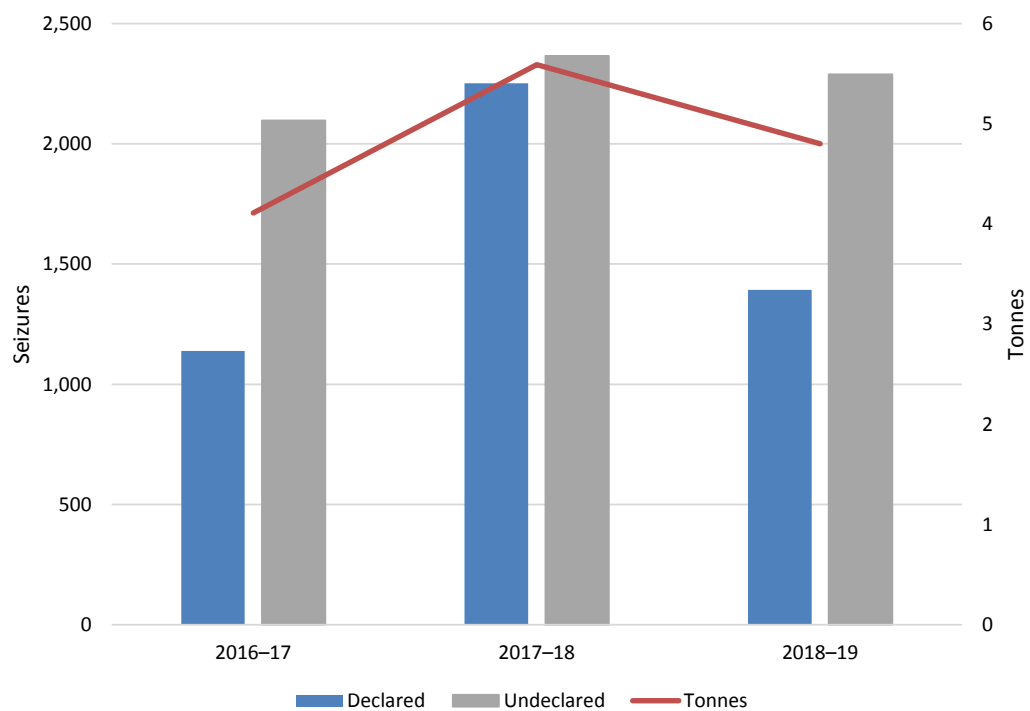
All international mail arriving into Australia is processed at mail gateway facilities located in Brisbane, Melbourne, Perth and Sydney. Australia Post owns the gateway facilities and the Department of Agriculture, Water and the Environment and Department of Home Affairs manage biosecurity and other risks accordingly. Parcels entering via express airfreight companies are not covered in this analysis.

Between July 2016 and June 2019 the department seized over 14.5 tonnes of pork and pork products. Between 2017–18 and 2018–19 there was a 14.3% reduction in the overall quantity of pork and pork products seized in the international mail pathway.

In 2017–18 correctly declared mail items represented almost half (48.7%) of the total amount of pork products seized ([Figure 3](#)). Undeclared items included categories such as declaration not attached, incorrectly declared, undeclared and unknown. The reason for a reduction in the proportion of correctly declared pork product seizures is unclear.

Between 2017–18 and 2018–19 the number of pork products seized in the mail pathway dropped by 20%. However, the number of correctly declared items also dropped by 38%.

In 2018–19 the department seized over 3,600 pork and pork products weighing more than 4.8 tonnes. EMS accounted for over 2.9 tonnes (60%). However, only 37% of those items seized were correctly declared to have pork and pork products ([Table 5](#)). This is a reduction of the proportion of declared pork products from the previous year. During the same period, parcels accounted for 24.3% of total seizures with only 32.9% correctly declared. Combined, these 2 classes accounted for 83.5% of pork product seizures, with only 35.8% correctly declared.

**FIGURE 3** Seizure of pork and pork products, international mail pathway, 2016–19

**TABLE 5** Seizure of pork and pork products, international mail pathway, 2016 to 2019

Year	EMS		Parcels		Other articles		Letters (no.)	Total (no.)
	(no.)	Declared (%)	(no.)	Declared (%)	(no.)	Declared (%)		
2016–17	1,814	35.3	917	34.2	501	36.7	4	3,236
2017–18	2,050	41.4	1,273	33.5	1,294	75.4	1	4,618
2018–19	2,181	37.0	893	32.9	605	48.2	3	3,682

EMS Express mail service

In early 2019 the department determined that EMS and parcel articles posed a very high risk for pork and pork products. The department needs to do more to achieve a higher proportion of correctly declared items in the mail pathway.

### Recommendation 3

The department should increase screening of express mail service and parcels from African swine fever-affected countries (in addition to China) at targeted mail centres. The outcomes should be recorded electronically in a central register to allow for a quick post-hoc analysis to inform relevant policies and operations.

**Department's response:** *Agreed.*

The department has increased screening of mail classes (express mail service, parcels and other articles) from ASF-affected countries with implementation of revised mail profiles commencing in 2020. All detections resulting from the increased screening will be recorded in the Mail and Passenger System (MAPS), and will inform frequent data reporting and analysis performed by the department.

The department screens 100% of EMS articles and parcels from China through the mail centres. However, this pathway represents no more than 20% of parcels arriving in Australia. It is unclear how many parcels are screened for pork and pork products through the self-assessed clearance (SAC) airfreight pathway. However, if pork products were only 50% as prevalent in other airfreight pathways as has been recorded in the EMS pathway, then as many as 5,400 items and 7 tonnes of pork may be entering via the airfreight pathways.

### 2.3.3 Top 10 countries for seizures, 2018–19

China and South Korea are not free from ASF but are represented in the top 10 countries for which pork products were detected in international mail during 2018–19 (Table 6). These 3 countries account for over 52% of detected mail articles and 67% of total weight. Overall, China accounted for over 40% of all articles detected (51% by weight). Alarming, only 27.9% of the mail items detected from China were correctly declared.

This was a 9.17% reduction in seizures, as well as a 4.5% reduction in correctly declared items from China compared with the previous year.

**TABLE 6** Seizures of pork and pork products, international mail pathway, by country of origin, 2018–19

Country	Mail articles		Articles correctly declared		Undeclared	
	(no.)	(kg)	(no.)	(%)	(no.)	(%)
China <b>a</b>	1,496	2,471	417	27.9	1,079	72.1
France	852	575	351	41.2	501	58.8
USA	388	369	262	67.5	126	32.5
Thailand <b>a</b>	107	181	44	41.1	63	58.9
Spain	99	85	21	21.2	78	78.8
South Korea <b>a</b>	95	168	52	54.7	43	45.3
Malaysia	58	82	14	24.1	44	75.9
Netherlands	54	101	28	51.9	26	48.1
Germany	54	95	28	51.9	26	48.1
United Kingdom	42	32	31	73.8	11	26.2
Other countries <b>b</b>	437	639	140	32.0	297	68.0

**a** African swine fever-affected countries. **b** Includes 69 countries.

The department's awareness campaign about heightened ASF risk in the traveller's pathway appears to have led to an increase in the number of travellers declaring pork and pork products. In 2018–19 almost 90% of international travellers declared pork and pork products. In contrast, around 39% of items were correctly declared in the mail pathway.

### 2.3.4 Enhanced intervention, 5 November 2018 to 25 February 2019

From 5 November 2018 to 25 February 2019 the department commenced enhanced screening of mail articles from China for ASF, intercepting 1,153 items containing pork. China and France accounted for almost 60% of total seizures at 686 (Table 7).

**TABLE 7** Top 10 countries for seizures of pork products, 5 November 2018 to 25 February 2019

Country	Items seized	
	(no.)	(%)
China <sup>a</sup>	352	30.5
France	334	29.0
USA	100	8.7
Spain	48	4.2
Thailand	26	2.3
Germany	27	2.3
South Korea <sup>a</sup>	29	2.5
Estonia	25	2.2
Netherlands	21	1.8
Italy	18	1.6
Other	173	15.0
<b>Total</b>	<b>1,153</b>	<b>100.0</b>

<sup>a</sup> ASF-affected country

The IGB considered the potential risk of illegal importation of commercial quantities of pig meat into Australia. Given the low value of pork—in November 2019 pig meat prices were averaging \$4 per kg (APL 2019)—there appears to be a low incentive to illegally import commercial quantities of pig meat into Australia. However, this could change, with the anticipated global shortage of pig meat driving prices up. The department has intercepted significant quantities of pork in both passenger and mail pathways, regardless of offshore and domestic pricing for pork products.

### 2.3.5 End-point survey

The department also conducts a random end-point survey of international mail. Between 1 November 2018 and 31 July 2019 the department detected 39 pork products—weighing 18 kg—from end-point surveys. This represented a leakage rate of about 0.05%.

## 2.4 Airfreight pathway (self-assessed clearance)

Rapid growth in the importation of goods purchased through e-commerce and increased utilisation of relatively low-cost airfreight services poses a potential biosecurity risk management challenge.

Between October 2016 and January 2017, the department trialled verification of the expressed airfreight (parcel) pathway—known within the department as the self-assessed clearance (SAC) pathway—at an approved arrangement. The department concluded this pathway to be low risk, and minimal intervention measures were applied.

During 2018–19, 50 million non-commercial SAC consignments arrived by air into Australia. The department risk assessed 100% of cargo using over 1,000 risk criteria in the ICS. Based on this risk assessment, 420,000 (0.8%) consignments were referred to the department. Of those referred, 290,000 (68%) were released on accompanying documentation and 130,000 (31%) received further intervention—such as inspection or an upgrade into the Agriculture Imports Management System (AIMS) for further assessment or treatment.

In November and December 2019, the department reviewed efficacy of its regulatory controls on the non-commercial airfreight pathway. The operation targeted meat and meat products entering Australia from ASF-affected countries. Initial results indicate that this is a low-risk pathway for pork products. However, a number of concealed biosecurity risk materials have been detected. This pathway is the subject of a separate IGB review to determine why this pathway has a higher compliance rate of incorrectly declared items than the mail pathway.

#### Recommendation 4

The department should analyse the airfreight pathway to ascertain why incorrectly declared items have a higher compliance rate in this pathway compared to the mail pathway.

**Department's response:** *Agreed.*

The department has commenced analysis of this pathway.



## 2.5 Sea freight (commercial) pathway

Australia imports a large quantity of pig meat under strict biosecurity protocols. Approximately 50% of pig meat consumed in Australia (domestic and imported) comes from ASF-free countries. Specific import conditions apply to imports from approved countries and consignments of all uncooked pig meat is inspected by biosecurity officers on arrival. The department allows imports from countries that are not free of other diseases such as porcine respiratory and reproductive disease, but meat must be cooked or undergo other specific processes to destroy target pathogens. Eight of the 12 countries approved to export unretorted pork and pork products to Australia have never reported an ASF outbreak.

### 2.5.1 Import management

#### 2.5.1.1 Import risk analysis

In 1998 the department initiated a generic import risk analysis (IRA) for pig meat to determine biosecurity risks associated with imports of pig meat (Department of Agriculture, Fisheries and Forestry 2004). It considered 26 disease agents of potential biosecurity concern.

The generic IRA specifies the risk management measures that all countries must meet to reduce ASF disease risks consistent with Australia's appropriate level of protection. These measures include:

- each consignment must be accompanied by a valid import permit
- all consignments must be accompanied by a veterinary certificate in accordance with the World Organisation for Animal Health (OIE) International Animal Health Code 'Model international veterinary certificate for meat of domestic animals'. The certificate must be signed by an official veterinarian certifying that
  - the pigs from which the meat was derived have been kept since birth in a country or zone that is recognised by Australian authorities as free from African swine fever
  - the pig meat has been canned such that all portions of the can contents have been heated to at least 100°C, or
  - the pigs from which the meat was derived have been sourced from premises that have been free from evidence (clinical, serological or virological) of ASF infection for the 3 months prior to slaughter; the premises are located in an area where ASF is compulsorily notifiable; and the pig meat has been dry cured under specified conditions for the production of Parma type hams (minimum curing 399 days), Iberian type hams, loins or shoulders, or Serrano type hams (minimum curing 140 days)
- the pig meat must be packaged in clean new packaging and container sealed with a seal bearing the number or mark.

The 2004 generic import risk analysis report is still be valid and has not undergone any changes.

On 2 December 2019 the department announced that it would commence a review of current biosecurity measures for the importation of natural sausage casings for human consumption. The review is in response to a request from industry to consider the effectiveness of salt and phosphate-supplemented salt against pathogens of concern and also in response to changes in the global distribution of ASF.

As of 6 November 2019, 112 permits were valid for importation of pork and pork products from 10 approved countries ([Table 8](#)). Import permits are issued for 2-year periods.

**TABLE 8** Import permits, 6 November 2019

Country	Import permits
Canada	21
European Union	68
USA	20
Others	3
<b>Total</b>	<b>112</b>

### 2.5.1.2 Entry management

Goods imported into Australia require classification under the *Customs Tariff Act 1995*. On 21 July 2011 the then Department of Agriculture and the then Australian Customs and Border Protection Service (Customs) signed a memorandum of understanding, defining each party's biosecurity and border protection responsibilities.

The 2 interlinked electronic information management systems used for clearing imported commodities, including pork and pork products, at the border are:

- the Integrated Cargo System (ICS)—managed by Customs
- the Agriculture Import Management System (AIMS)—managed by the department. The staff uses AIMS to assess risk, target and record real-time processes, such as entry management, point-to-point movement of imported goods and inspection findings as part of arrival clearance procedures, and directions for re-export or destruction of failed consignments.

The ICS automatically refers all import consignments of biosecurity concern to AIMS. Some of these referrals are based on tariff codes targeted by community protection criteria set by the department. Inspectors at the first port of arrival are responsible for clearing imported consignments in their region.

### 2.5.1.3 Risk assessment

The department manages biosecurity and imported food risks associated with imported cargo through the use of particular criteria in the Integrated Cargo System (ICS). Based on this criteria, data obtained from information lodged within the ICS is assessed to identify potential biosecurity and imported food risks. Matching conditions aimed at a broad target (such as tariff, goods description and entity) are the key tools for the referral of cargo of biosecurity and imported food concern from the ICS through to the AIMS or SAC database, for further risk assessment and/or intervention.

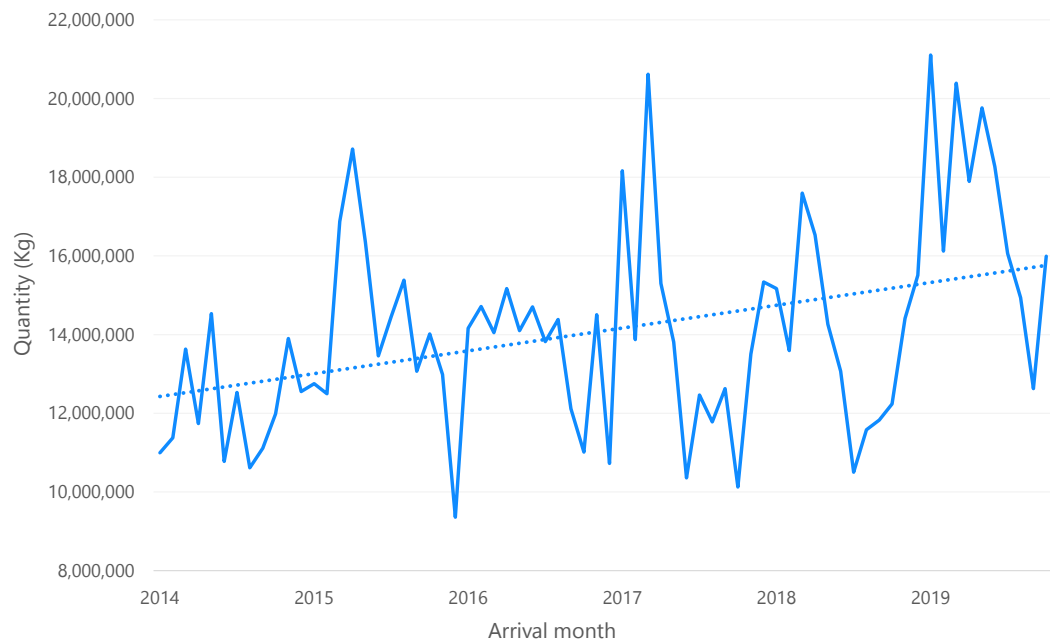
### 2.5.1.4 Tariff codes

Import trade and non-compliance data in the sea and air cargo pathways was sourced from the AIMS. Similarly, enhanced screening seizure data in the international mail and travellers' pathway—identified by pig meat tariff codes—was sourced from MAPS. [Appendix B](#) contains a complete list of tariff codes used to identify permitted and seized pork and pork products across all pathways. These products were covered by 31 different tariff codes—23 swine-specific and 8 otherwise.

### 2.5.1.5 Import volumes

Australia imports a substantial quantity of primarily frozen pork—uncooked, cooked and cured. Between 1 January 2014 and 31 October 2019, a steady increase of mostly uncooked pig meat (over 986,500 tonnes) was imported through the sea freight pathway (Figure 4). These imports—representing over 43,200 entries into the department’s system—originated from 42 countries, with majority from the United States, Denmark, the Netherlands and Canada.

**FIGURE 4** Pork meat imported into Australia from 1 January 2014 to 31 October 2019



Between 1 January 2018 and 31 October 2019 the department made over 21,700 pig meat import entries into the AIMS. Only 126 (0.7%) of those entries were found to be non-compliant (Table 9). However, over 11% of not swine-specific entries failed document assessment. During this period, the department inspected 541 entries and directed 1,224 for re-export or destruction.

**TABLE 9** Imported pig meat, sea freight pathway, 1 January 2018 to 31 October 2019

Category	Unit	Tariff code <sup>a</sup>		Total
		Swine-specific	Not swine-specific	
Entries	no.	13,237	8,470	21,707
Quantity	kg (million)	1,837	37	1,874
Failed documents	no.	250 (1.9%)	980 (11.6%)	1,230 (5.7%)
Non-compliant	no.	67 (0.5%)	59 (0.7%)	126 (0.7%)
Inspected	no.	142 (1.1%)	399 (4.7%)	541 (2.5%)
Re-export or destruction	no.	467 (3.5%)	757 (8.9%)	1,224 (5.6%)

<sup>a</sup> Tariff codes for swine-specific and not swine-specific products are in [Appendix B](#).

### 2.5.1.6 Approved arrangements

Imported uncooked pig meat poses a high biosecurity risk because it provides a direct pathway for the introduction of exotic diseases such as foot-and-mouth disease and ASF into Australia. Australia only permits importation of uncooked pig meat for processing into pre-cooked product like ham or bacon, or for smallgoods like salami and sausages. If strict biosecurity control is not maintained on the product until it is properly processed, there is a risk of illegal diversion of imported raw pork to the domestic market with consequent livestock disease risks (IGB 2019a).

Under the *Biosecurity Act 2015* the department can approve public or private industry entities (or biosecurity industry participants) to carry out certain border biosecurity risk management activities, in accordance with specified conditions. Approved arrangement holders enter into a legal obligation with the department agreeing to maintain appropriate biosecurity standards and protocols. Approved arrangements, categorised under different classes to manage the risk associated with imported uncooked pig meat, include:

- Class 2.52—Temperature-controlled storage of imported pig meat
- Class 2.8—Temporary storage of containerised refrigerated pig meat
- Class 3.2—Imported pig meat processing
- Class 10.2—Biosecurity waste collection
- Class 10.6—Biosecurity waste transport.

As of July 2019, 27 class 3.2 approved arrangement facilities were operating in Australia—spread across NSW (7), Victoria (11), Queensland (4), South Australia (3) and Western Australia (2).

Between 2017 and 2019, the department conducted 269 audits on class 2.52, 2.8 and 3.2 approved arrangements. It found a high level of non-compliance, including 24 failed (8.9%), 17 critical and 158 major non-compliances (Table 17 in IGB 2019a).

The department's biosecurity protocols for uncooked imported pig meat are rigorous—imports are only permitted from countries free of ASF. The IGB considers that the department appears to be satisfactorily managing the commercially imported pig meat consignments that use swine-specific tariff codes. However, pig meat imported using tariff codes that are not swine-specific have a higher rate of non-compliance—resulting in re-export or destruction of those consignments. Many of these imports were found to contain pig products. This may have been due to incorrect product descriptions being entered by importers or brokers into the Integrated Cargo System.

#### Recommendation 5

The department should work closely with commercial importers and brokers of pork products to ensure product descriptions on imported tariff products that are not swine-specific are accurate and include 'pork', where applicable.

#### Department's response: *Agreed.*

The department will continue to undertake a range of communication activities to ensure commercial importers and brokers are aware of their biosecurity responsibilities in relation to import declarations and tariff codes. The department also monitors compliance of pork import declarations and where systemic non-compliance is observed ensures process improvements are made and any relevant regulatory actions are initiated.

## 2.6 Other pathways

### 2.6.1 Porcine fluids, tissues and genetic material

Australia does not allow import of porcine genetic material (semen and embryos) for breeding purposes. However, recently there have been attempts to import porcine semen illegally with successful prosecution ([Box 1](#)). Import of porcine biological material for laboratory research is permitted under strict import conditions.

#### Box 1 Semengate

Since 1995 the department has not issued any permit to import pig genetics because of the biosecurity risk. In February 2017 the department was tipped off about a semen syndicate. In August 2019 the investigation led to prison sentencing of 2 Western Australian men for their involvement in aiding the illegal importation of Danish pig semen, hidden in shampoo and hand lotion bottles. The semen—imported between 2009 and 2017—was used for insemination of 199 sows, spawning more than 2,000 piglets in Australia. Testing by the department found no traces of exotic disease.

### 2.6.2 Yachts

All commercial vessels arriving in Australia must use the department's Maritime Arrivals Reporting System (MARS). All non-commercial vessels arriving in Australia are required to contact the department at least 96 hours before arrival.

A departmental biosecurity officer boards the vessel to ask questions, assesses documents and conducts a physical inspection upon arrival. Vessel masters must declare and present all food and provisions, plant material and animal products for inspection on arrival in Australia. All passengers and crew are required to stay on board until pratique is granted. The department recommends that passengers declare all prohibited goods prior to arriving in Australia.

## 2.7 Testing seized pork and pork products for African swine fever

Between November 2018 and May 2019, the department seized 23 tonnes of banned pork products at Australian borders. The department tested pork and pork products seized at Melbourne and Sydney international airports and mail gateway facilities over 2 periods. The third round of testing included products seized at Melbourne, Sydney, Brisbane, Perth and Avalon international airports and Sydney and Melbourne mail gateway facilities ([Table 10](#)).

The department expected some positive results as a number of the products seized and tested are banned for import into Australia. The types of pork products that tested positive for ASF virus included cooked pork, sausages, mooncakes, ham, unprocessed pork buns, dumplings and preserved products.

**TABLE 10** Seized pork and pork products specimens testing for ASF, December 2018 to September 2019

Date	Pathway/location	Sample tested	ASF-positive	ASF-positive (%)
3 to 16 December 2018	Melbourne and Sydney international airports and international mail gateway facilities	152	6	3.9
21 January to 3 February 2019	Melbourne and Sydney international airports and international mail gateway facilities	283 <sup>a</sup>	40	14.1
2 to 15 September 2019	Melbourne and Sydney international airports and international mail gateway facilities Brisbane, Perth and Avalon international airports	418	202	48.3

<sup>a</sup> Two samples were also found to carry fragments of foot-and-mouth disease virus. Test results were supplied by the Australian Animal Health Laboratory

In the sample test conducted between 2 and 15 September 2019, the majority of samples (57.4%) were taken from Melbourne and Sydney gateway facilities. These 2 mail centres accounted for 57.9% of the total positive results (Figure 5). The results indicated the presence of ASF virus fragments, which means that these products could possibly transmit the virus.

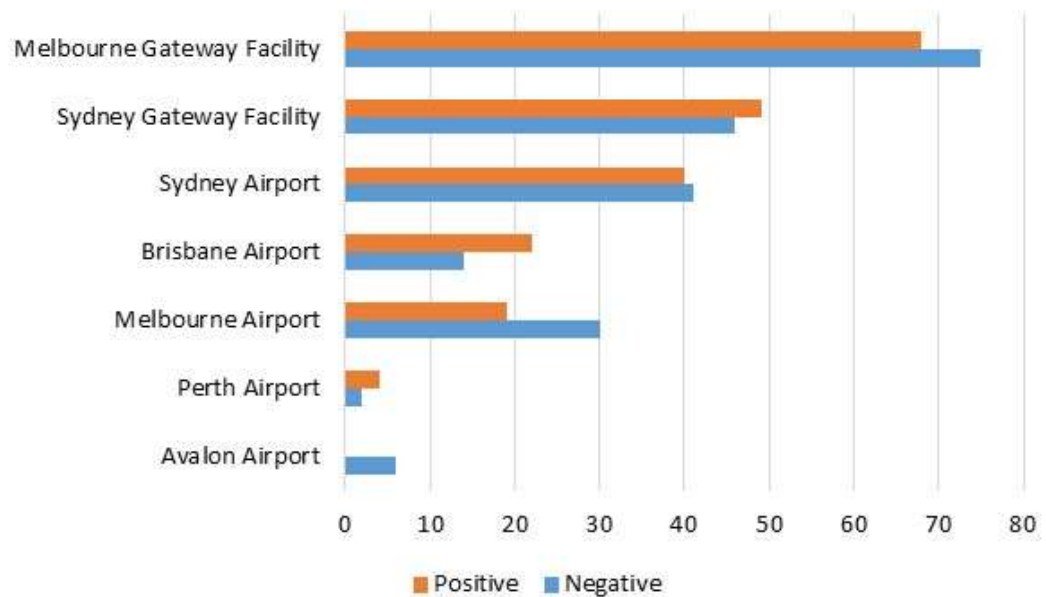
Data analysis confirmed that the highest volume of pork products are detected in EMS and parcels.

Testing for ASF has not been conducted on any pork products post-border.

## 2.8 Handling and disposal of seized pork and pork products

Pork and pork products seized at the border are treated as biosecurity waste. Biosecurity officers dispose of products in secure biosecurity waste bins kept at first points of entry, including mail gateway facilities, seaports and airports. Waste bins are regularly collected by contracted third-party service providers, transported to an approved waste disposal site and treated by deep burial.

**FIGURE 5** ASF virus testing of seized pork and pork products, air travellers and mail pathways, 2 to 15 September 2019



## Chapter 3

# Appropriate infrastructure and operational capability in place

### 3.1 Risk assessment, screening and verification methods

Following the outbreak and spread of ASF in Asia and Europe, the department determined that the mail and traveller pathways are the highest risk pathways for the illegal import of pork products from ASF-affected countries.

Practical options available to the department to reduce the ASF risk include:

- banning the import of all non-commercial pork products
- increased inspections and screening of travellers and mail articles from ASF-affected countries
- targeting of travellers who lived in rural areas or worked on farms with pigs, especially those who intended to work on farms in Australia
- testing of seized pork products for presence of ASF virus
- modelling to adjust the risk assessment of high-risk passengers
- education and awareness campaigns for the traveller and mail pathways (see [Chapter 11](#)).

The department implemented these options to varying degrees. However, many of the department's actions have been reactive. When a new country notifies of an outbreak of ASF, the department responds in due course. The IGB has not seen evidence that the department has plans in place to be proactive against travellers and mail articles from countries that have not yet experienced an ASF outbreak.

#### 3.1.1 Overall process

The types of goods arriving into Australia via international mail and travellers are constantly changing. Online products are evolving, online businesses are expanding, and goods that are in demand now may not be in demand in the future. Different countries present different risks. Tourism and other inbound travel from different countries changes over time but is steadily increasing. For these reasons, biosecurity risk assessments are reviewed annually to ensure the department targets international mail articles and travellers presenting the highest biosecurity risks (IGB 2019b). However, ASF risk is changing rapidly.



The department screens selected international mail and passengers on arrival, either by X-ray, detector dogs or manual inspection. This helps biosecurity officers identify passengers who are carrying undeclared biosecurity risk material. However, passengers may carry goods that are difficult to detect through X-ray screening or are not detector dog targets. Officers may then need to consider other information such as visual assessment and knowledge of seasonal and cultural events to select passengers for manual screening (IGB 2019b).

The Mail and Passenger System (MAPS) is the repository for data on air and sea travellers, international mail and cruise vessel pathways. Frontline officers use MAPS to record information about detections of biosecurity risk material and pests in these pathways. Data collected in MAPS are also used to inform mail and passenger risk assessments, calculate performance indicators and help allocate resources.

The department also conducts daily end-point surveys on a random sample of international travellers (see [2.2.1.5](#)) and mail articles (see [2.3.5](#)) to estimate the amount of biosecurity risk material that has not been detected by routine screening methods.

## 3.2 Detector dogs

Previous IGB reviews (IGB 2019b, IGB 2019c) noted that detector dogs have proven to be the most effective tool for detecting undeclared pork and other meat products carried by travellers, and in international mail and parcels. The use of detector dogs has gained popularity across the globe. Canada, the United States and some European countries have started using detector dogs to successfully detect meat products that could carry ASF and foot-and-mouth disease virus, in baggage and mail.

Detector dogs are an integral part of the department's biosecurity screening regime for travellers, mail and cargo. The department currently uses 39 detector dogs, deployed at most Australian international airports that receive travellers from ASF-affected and hub regions such as Singapore and Hong Kong. Canberra Airport does not have a detector dog but does receive direct flights from Singapore. The department also uses detector dogs at all international mail gateway facilities.

At airports, travellers are directed to a dedicated marshalling point for screening. At mail centres, detector dogs conduct screening on moving conveyor belts carrying targeted mail items. The mobility of detector dogs allows the department to rapidly deploy them to areas or regions that require increased screening. Detector dogs provide a distinct advantage in detecting undeclared biosecurity risk material over other screening methods, including the ability to:

- screen large numbers of passengers and their baggage in a short period
- be trained as multipurpose detectors because of their excellent sense of smell and strong retrieval drive
- screen large items at airports and mail centres
- be impartial (the dogs are not subject to bias).

In 2018–19 the department’s 39 detector dogs found over 4,100 pork products (weighing 1.8 tonnes) at international airports and 620 pork products (weighing 0.5 tonne) at international mail centres ([Table 11](#)). In November 2019 the department deployed a detector dog to Darwin Airport following the ASF outbreak in nearby Timor-Leste.

**TABLE 11** Detector dogs and 2D X-ray machines, international mail and traveller pathways, November 2019

Location	Detector dogs	2D X-ray scanners	RTT scanner
NSW	20	10	0
Victoria <sup>a</sup>	9	6	2
Queensland	5	5	0
Western Australia	3	3	0
South Australia	1	2	0
Northern Territory	1	1	0
ACT	0	1	0
<b>Total</b>	<b>39</b>	<b>28</b>	<b>2</b>

RTT Real-time tomography. <sup>a</sup> Victoria’s RTT scanners are in trial (not functional for routine use).

In an earlier report, the former IGB noted that between 2012 and 2018 detector dog numbers fell by 46%, and recommended:

The department should improve the rate and effectiveness of screening mail and passengers, by both X-ray and by detector dogs. The department should increase the number and prioritise the use of detector dogs to fully use the mobility and versatility of dogs to screen across a range of environments including carousels, cargo and conveyances for targeted and random screening (IGB 2019b).

The IGB concurs with the former IGB and notes that biosecurity risks would be more efficiently managed if the department invested in more detector dogs to perform searches on passengers and luggage arriving from ASF-affected countries. The presence of detector dogs at airport arrival lounges also works as a strong deterrent for incoming passengers and promotes the government’s war on infested and prohibited undeclared goods carried by passengers.

As noted in the IGB’s 2019 review of [Effectiveness of biosecurity measures to manage the risks of brown marmorated stink bugs entering Australia](#), the department was trialling the use of detector dogs for inspecting break-bulk imports for BMSB (IGB 2019c). The dogs are now being used for verification of fumigation of break-bulk imports in Perth, Melbourne and Brisbane. The same dogs are also deployed for screening at airports and mail centres.

In October 2019 the department deployed a detector dog to Darwin following the ASF outbreak in Timor-Leste. The dog was being used for biosecurity screening of travellers and goods on Norfolk Island. Norfolk Island was the only location in Australia with detector dog capability that does not receive direct flights or trade from ASF-risk countries. On 1 November 2019, another detector dog was relocated to Cairns International Airport, which receives travellers from ASF-affected countries.

By July 2020 the department plans to add 6 detector dogs to the current squad of 39 to enhance the existing capability at airports and mail centres. However, with the continued increase of the number of ASF-risk countries and flights, it is difficult to ascertain how the department can effectively address ASF risk without further increases in detector dog numbers for the next 3 years. The department should consider using more detector dogs to screen a greater proportion of incoming passengers and mail.

The department has argued that it is more effective to increase data analysis capability and technology than to increase the number of biosecurity officers and detector dogs. However, the investment required to upgrade the IT systems means that the data analysis capability and technology will not be available for some time. In the meantime, the department is more reliant on its officers and detector dogs to screen for undeclared meat products.

### Recommendation 6

The department should urgently expand the detector dog program, consistent with the increase in traveller numbers and mail volumes, to minimise entry of all undeclared meat and meat products into Australia.

**Department's response:** *Agreed.*

The department is expanding the detector dog program under the \$66.6 million ASF package which includes funding for the procurement and training of six additional biosecurity detector dogs. The additional detector dogs will be deployed by July 2020.

## 3.3 X-ray scanners

Conventional 2D X-ray imaging systems are most widely used for live X-ray scanning of travellers' carry-on and check-in baggage. X-ray scans can also be saved for off-line inspection of screened baggage for items of biosecurity concern or for future scrutiny. If a biosecurity officer suspects from the live X-ray image of a screened bag that the bag contains a prohibited item, it is physically searched by the officer to remove biosecurity risk material. The department has been using 2D X-ray technology at airports and mail centres since the 1990s. However, 2D systems cannot reveal the exact bag content.

Real-Time Tomography (RTT) is a newer technology and uses multiple X-ray sources to create 3D images. This allows inspection of 3D-rotatable images with the additional option to slice the view to facilitate the identification of biosecurity risk material when the images are superimposed with other objects. In July 2018 the department, in collaboration with New Zealand MPI, started trialling an RTT machine at Melbourne airport, with a similar machine also being trialled at Auckland airport. The trial was extended to 31 March 2020, and the new scanners would be deployed after the trial period (subject to funding).

The department and New Zealand biosecurity authorities are creating a library of algorithms to automatically detect and identify biosecurity risk material (including meat and meat products). So far, 581 meat products have been screened for algorithm development. The department is testing whether it is possible to create a computer algorithm to automatically detect meat products.

During October 2019 the department compared the 3D X-ray with 2D X-ray and detector dogs on EMS articles coming through the Melbourne Gateway Facility from China. The 3D X-ray detected meat products at a rate of more than 5.5 times that of other screening tools (2D X-ray and detector dogs).

The RTT X-ray technology can screen baggage faster than the current 2D machines—reducing waiting times for passengers. The department intends to install more such machines at international airports. However, the RTT X-ray units are much bigger and heavier than the conventional 2D X-ray units and therefore require more room to install. The department is collaborating with airport authorities to redesign the existing baggage handling areas for in-line screening of baggage.

The department is currently using 28 2D X-ray scanners across all major international airports and mail gateway facilities ([Table 10](#)). 3D computed tomography (CT) scanners are being trialled at Melbourne Airport’s international terminal and mail gateway facility. The ASF response package announced by the Minister for Agriculture in December 2019 will fund 2 new 3D CT scanners (at Melbourne and Sydney mail gateway facilities). These scanners are forecast to be deployed by July 2020.

In 2018–19, using 2D X-ray scanners, biosecurity officers at international airports around Australia detected over 7,600 pork products (weighing 7.7 tonnes) in travellers’ baggage. For the same period, officers detected over 2,200 (3.4 tonnes) pork products in mail articles at mail gateway facilities.

The IGB noted that the department is proactively engaging with some airport authorities to seek cooperation on the likely installation of new 3D X-ray machines. The department is getting positive responses where airports luggage handling areas need redesign to house a machine.

The trial of the 3D CT scanners has been widely promoted. However, the application of this technology for ASF or other biosecurity risk materials is at an early stage. The substantial purchase or lease and installation cost of these machines, and the current need to secure budget funding for this purpose, suggests that widespread use before 2021 is unlikely. In the short to medium term, the 3D CT scanners are likely to deliver benefits through augmenting international passenger and parcel consignee awareness campaigns ([Chapter 11](#)).

Upgraded outbound air (passenger, baggage and freight) safety obligations mean that the expertise of airlines, airfreight companies and airport operators is evolving—including in handling the conflicting challenges of appropriate security intervention and passenger experience. There is significant 3D scanning expertise in the Australian commercial sector. The current ASF challenge is the first such biosecurity challenge since the advent of new CT scanning technologies and upgraded aviation security obligations. Therefore, full co-design with airlines and airports of a new biosecurity risk mitigation regime is essential and urgent. This co-design partnership may lead to innovative co-regulatory biosecurity arrangements that are less dependent on government funding.

## Chapter 4

# Coordinated, agile management arrangements with efficient cooperation

The inadequate agility of biosecurity resources (financial and personnel) is a widely expressed concern. A range of comments have been advanced about biosecurity funding levels and sources, uncontrolled demands from risk owners, staff ceilings, recruitment delays, bleed of funds from import-biosecurity to subsidize export services, etc. A clear theme emerging is one of inadequate agility of resources to deal with the complexity, diversity and chronic or acute growth in risks generally or specifically (which also implies inadequate resource quantum to meet future demands, even if overall resource level is adequate to meet current demands).

Evidence available from previous IGB reviews and feedback from staff and stakeholders leads the IGB to question the collective capability (aptitude and attitude) of regulated entities and personnel to effectively discharge their responsibilities to mitigate biosecurity risk to the level of their obligations. Prior IGB reviews have highlighted this issue (most notably for fumigators), and improved biosecurity action is being taken. However, the IGB concluded that those primarily responsible for taking action to prevent biosecurity pests approaching or breaching the Australian border are not considered to be adequately fulfilling that responsibility (as an overall cohort). This exposes Australia to potentially serious biosecurity risks every day.

There appears to be an important and urgent communication need to ensure that 'biosecurity first' is the task of biosecurity officers (without impeding business any more than essential). Similarly, there is a need for improved communication to ensure that risk-creating businesses and risk mitigating regulated entities are better educated that it is their responsibility to mitigate biosecurity risk. Improved compliance and proactive commitment from such businesses will lead to the necessary intervention of biosecurity officers being less often and potentially less disruptive. This is the most valuable business facilitation improvement likely to be immediately achievable.

Feedback to the IGB raised concerns that funding is driving risk-mitigation measures, and that a disconnect exists between risk owners (largely Canberra-based) and operational risk regulators (in operational centres Australia-wide). Risk-return improvements are not complete and are seemingly now driven more by where resources can be saved, rather than by where very low-risk situations can be changed or removed from routine biosecurity intervention.

Operational managers are very concerned about their ability to deal with ‘multiple demand surges’, such as the heavy demands already placed on their teams by BMSB, ASF and now Coronavirus responses. Diversion of resources to meet acute demands for BMSB, ASF and Coronavirus means that those diverted resources are not applied to other risk pathways.

## 4.1 Inter-department management arrangements

In response to ASF, the department has been working closely with Australian Border Force (the Department of Home Affairs). Agencies have worked collaboratively at international mail centres and to screen travellers at international airports. However, the Department of Home Affairs will soon be streamlining the way travellers enter Australia—including the potential introduction of ticketless SmartGates and digital incoming passenger cards. The Department of Agriculture, Water and the Environment will need to work with the Department of Home Affairs to ensure IT needs are fully integrated with any system changes. This will require substantial expenditure in IT system upgrades.

The department has also worked with the Department of Foreign Affairs and Trade to increase awareness of ASF by providing advice through the Seasonal Worker Programme.

The department also works closely with Australia Post at international mail centres.

The IGB concludes that ramped up biosecurity measures for both ASF and BMSB highlight the gap between the pace of innovation in intelligence-driven biosecurity measures and the pace of change in travel and trade systems transformation. The gap is now sufficiently large that changes being driven by other Australian regulators and companies within the same field of operations will adversely affect the department’s ability to deliver biosecurity measures without substantial increase in border biosecurity staffing. Ongoing investment in better IT systems and associated internal business process transformation will also be needed. Given the entrenched resistance to biosecurity staffing increases that would match the rate of growth in travel and trade, the IGB considers there to be only 2 short- to medium-term options:

1. The Australian Government acknowledges that a less effective border biosecurity system and higher level of residual biosecurity risk is acceptable, or
2. The Australian Government makes a substantial investment in biosecurity intelligence and information systems that are integrated with Department of Home Affairs and commercial systems.

## 4.2 Inter-division management arrangements

This review observed strong cooperation among the department’s key biosecurity divisions responsible for ASF prevention. The IGB believes that whole-of-biosecurity leadership and teamwork has improved, enabling the department to better address the surge challenges of ASF and BMSB prevention.

The department requires ongoing improvement in whole-of-biosecurity cooperation, and associated efficiency and effectiveness gains, to address continuing ASF and BMSB risks, and new biosecurity threats (such as coronavirus disease (COVID-19)).

## Chapter 5

# Funding arrangements enable the department to respond appropriately

The increase in international movement of people and goods has increased the associated biosecurity risks, including for meat products. Enabling the safe increased movement of people and goods to and from Australia has significantly increased the biosecurity risk management task. The department must be innovative in the way it develops risk management strategies and deploys scarce resources.

Stronger border biosecurity risk management measures to prevent the entry of unwanted pests or diseases into Australia require long-term secured funding. Frontline inspector numbers have fallen by 25% over the past 5 years, but volumes of incoming sea and air cargo, mail and passengers continue to rise steadily, as do accompanying biosecurity risks (IGB 2017).

Governments are often under pressure to reduce public costs by various means, including imposing cost-recovery and average staffing level (ASL) ceilings, or budget cuts. Biosecurity activities funded by cost-recovery should be exempt from ASL ceilings. This would enable the department to employ adequate staff in response to increased detection of contaminated or infected products containing potential biosecurity risks. However, inspection of travellers and mail is not cost recovered by the department.

Sufficient government or general levy funding should always be provided for at-border intervention to ensure compliance with import conditions for commodities, and for risk-based targeted enforcement operations, which are often labour-intensive to police. Ongoing investment in more detector dogs, better screening and scanning technology (such as 3D scanners), information technology systems and associated internal business process transformation will also be needed.

## 5.1 Resourcing—quantity and flexibility

The department conducts activities on the basis of risk-return assessments. Strategies and resources are targeted at areas that will produce the greatest reduction in the probability and consequence of an outbreak or incursion of an exotic pest or disease. However, the inadequate agility of the department's biosecurity resources is a concern widely expressed by operational managers in discussions about operational constraints to diverse and evolving biosecurity risks.

A range of concerns exist about funding levels and sources, including uncontrolled demands from internal 'risk owners', staff ceilings, recruitment delays and movement of funds away from import biosecurity to subsidise export services. However, the main concern is about inadequate agility of resources to deal with the complexity, diversity and chronic or acute growth in risks. This also implies an inadequate quantity of resources for the future. In this context, 'resource agility' refers to the department's ability to quickly access new resources, or to redeploy or reconfigure existing resources—for example, less staff, more detector dogs.

Funding arrangements have almost always affected the department's ability to respond to biosecurity concerns. Comments such as 'the department has 3,500 biosecurity staff, they must be able to redeploy resources' highlight the generally poor understanding of the diverse responsibilities of the department, and the historical under-investment in new systems and technology that would enable greater efficiency and agility.

On 11 December 2019 the Australian Government increased biosecurity funding by \$66.6 million over 18 months to address ASF. The new funding package should temporarily alleviate the drain that ASF has put on the department's resources. The ASF response package will focus on resourcing deficits, capability to issue infringement notices and area freedom zoning arrangements, in the event of an ASF incursion. The funding package will not cover the time period necessary to provide an appropriately high level of ASF prevention measures as ASF continues to spread across south-east Asia and into Pacific countries. The department needs an increase in resources dedicated to ASF for the next 3 to 5 years.

## 5.2 Underpinning resourcing issues

The 2008 Beale Review, [One Biosecurity: A Working Partnership](#), recommended the establishment of a national biosecurity authority as a means of enabling agility in Australia's national (pre-border and at-border) biosecurity strategic and tactical resources. This agility would ensure resources could respond rapidly to the changing biosecurity threat environment. There seems to be no material prospect of the national biosecurity authority model being revisited. However, it is vital that the agility of biosecurity measures and resourcing approximates what would have been achieved had such an authority been put in place.

The anticipated biosecurity levy is expected to be legislated in 2020 following further consultation with the import industry. This is an important advance, but it is insufficient to deliver the level of resource agility necessary for the department to be able to cost-effectively deliver the required biosecurity outcomes.

Until the fundamental resourcing and operating model for Australia's biosecurity functions is modernised, Australia is likely to experience an ongoing sequence of biosecurity crises such as ASF and BMSB that require specific new funding to be approved.



## Chapter 6

# Adequate staffing ramp-up capability

## 6.1 Staff redeployment and recruitment

The department needs to extend enhanced intervention to include additional flights from Vietnam, Hong Kong and Singapore. Singapore is included as it serves as a major hub for those passengers not flying directly from China, Hong Kong and Vietnam. This would result in an additional 2,125 travellers that would need screening. The department has assessed that more biosecurity operations resources would be needed if offsets could not be found on medium-risk flights.

The department has constrained ability to redeploy existing biosecurity officers to address the ASF risk due to other biosecurity risk demands, location and skills. Existing biosecurity officers only require limited training to undertake a new job activity. The department deploys training programs designed to target a specific business need or risk, such as ramp-up activity to manage a higher biosecurity risk at the border. Generally, it takes 1 year from resource allocation announcements to the new resources being operational and able to mitigate the targeted biosecurity risks.

Increased intervention in the traveller and mail pathways has occurred for a number of years. The Australian ramp-up of ASF measures should have an initial planning of at least 3 years. This time frame is based on forecasts of the time it will take for countries with well-organised biosecurity programs to contain and eradicate ASF from key production areas.

December to February is the peak travel time for visitors to Australia and is considered a surge period for screening at airports. Unfortunately, this period also coincides with higher demand for at-border biosecurity services associated with brown marmorated stink bug, online parcel imports, Valentine's Day cut-flower imports, and other staff-intensive import issues.

The department has been recruiting and training biosecurity officers for use in traveller and mail pathways in anticipation of these surge periods. However, a significant delay exists between announcing funding of additional staff positions and deploying suitably trained staff. There is some public awareness benefit from such announcements, but it seems unlikely there would be any influence on traveller or mail consignee behaviour.

The department has developed a number of approaches to manage and deliver the biosecurity officer training program requirements. These programs are delivered to new employees upon engagement with the department and when current biosecurity officers are redeployed to manage identified high-risk activities. At the end of the 6-month foundation training program, employees can work independently in a number of job pathways.

The department has increased full-time equivalent (FTE) staffing levels involved in high-level activities at first points of entry around Australia ([Table 12](#)).

**TABLE 12** Staff numbers, detector dogs and X-ray machines at first points of entry, October 2019

State or territory	Cargo (FTE)	Travellers (FTE)	Mail (FTE)	Total (FTE)	Detector dogs	X-rays
NSW	132.1	131.3	36.9	300.3	20	10
Vic.	94.3	93.2	21.7	209.2	9	6
Qld	143.4	75.7	1.9	221	4	5
WA	84.7	55.1	0	139.8	3	3
SA	27.4	18.2	0	45.6	0	2
NT	11.5	7.8	0	19.3	1	1
ACT	2	3.6	0	5.6	0	1
<b>Total</b>	<b>495.4</b>	<b>384.9</b>	<b>60.5</b>	<b>940.8</b>	<b>39.4</b>	<b>28</b>

FTE Full-time equivalent

For the existing workforce, Inspections Group has implemented an integrated workforce model that enables flexibility in the deployment across national biosecurity regulatory activities. This enables the deployment of resources, functionally and geographically, to meet short-term demands for heightened intervention while maintaining the integrity of the biosecurity system.

To source the future workforce, Inspections Group have undertaken numerous recruitment rounds for ongoing, non-ongoing and casual staff to provide workforce flexibility and surge capacity:

- Recruitment has targeted locations of need, specifically Sydney, Melbourne, Brisbane and Perth.
- Sydney and Melbourne ran major recruitment exercises in mid-2019 and all new starters commenced training with the department in 2020.
- Maintained a blend of employment arrangements to provide flexibility to varying demand for activity (for example, casuals and non-ongoing to augment imported grain and seasonal workloads).
- The department is trialling alternative recruitment models with the aim of streamlining recruitment processes for biosecurity officers.

### Recommendation 7

The Australian Government should commit to ensuring adequate long-term (3- to 5-year) funding for African swine fever risk management, including border screening and enforcement. Funding for biosecurity measures (including strong intelligence and risk-based measures) should be linked to growth in traveller numbers, trade volumes and associated biosecurity risks.

**Department's response:** *Noted.*

This is a matter for government.

## Chapter 7

# Adequate monitoring and adjustment of intervention measures

## 7.1 Ongoing monitoring and adjustments

The department extended enhanced intervention to include flights from Vietnam, Hong Kong and Singapore.

Considering the recent ASF outbreak in Indonesia, the department increased intervention on flights from Denpasar (Bali) in December 2019. The department should also complete contingency planning for flights from the next cohort of at-risk countries (for example, Pacific island nations).

It is not clear how the department intends to balance the conflicting demands already placed on the ramped-up resources and additional demands expected as a result of the ASF virus spreading to new countries. The department will need to optimise frontline resources to provide the best overall ASF risk mitigation. However, any significant offshore spread of ASF will lower the level of intervention in some pathways and elevate the ASF risk to Australia.

Increased intervention of EMS and parcels appears to have only occurred on mail items from China. South Korea is an ASF-affected country that has had pork seizures detected through the mail pathway. Rate of screening of EMS and parcels from ASF-affected countries (other than China) should be increased at targeted mail centres.

### 7.1.1 Targeted flight operation

During October 2019 the department launched a targeted operation to verify the performance of current regulatory and educational controls on the international traveller pathway to deter the illegal importation of ASF risk products by travellers from 4 countries that reported ASF outbreaks: China, the Philippines, Timor-Leste and Vietnam.

The objectives of the operation were to determine:

- whether current detections of ASF risk products through business as usual intervention on travellers are indicative of the approaching risk
- whether existing traveller pathway controls are effective
- potential implications for current controls on the traveller pathway.

A total of 1,021 travellers and crew from 5 targeted flights were subject to 100% intervention. The frontline biosecurity officers seized 12 kg of pork products. Of the 36 samples tested for the presence of ASF, 8 (22%) returned a positive result. The department issued 28 infringement notices and 17 written warnings.

The operation identified opportunities to strengthen controls in the traveller pathway:

- increase intervention on flights for travellers from ASF-affected countries that also display high numbers of high-risk travellers
- include additional criteria for risk assessment of flights from ASF-affected countries, in particular focusing on seasonal farm workers.

The operation also suggested deploying more such targeted verification activities in future to provide ongoing assurance—in particular, by covering flights from additional ASF-affected countries with a large number of travellers to Australia.

## 7.2 Intervention measures

The department has focused much of its increased intervention on the traveller pathway ([Chapter 2](#)), which is where biosecurity operations are most visible. The increased intervention has had a positive effect on the number of travellers declaring pork products. However, non-declarant travellers arriving from ASF-affected countries pose the highest risk. Over 3 years, almost 2.4 tonnes of seized pork products were not declared. Data provided to the IGB suggests that an unknown amount of pork products would have entered Australia.

Initially, the department applied increased intervention measures to travellers and mail pathways from specific high-risk countries. Since the first major outbreak of ASF in China in August 2018, the department extended these intervention measures to include more ASF-affected countries. However, there has been a significant time lag between an ASF outbreak and the implementation of increased intervention measures. This is due to the rapid expansion of ASF throughout Asia. Some ASF-affected countries are still not covered under the department's regime of increased intervention measures.

The department considers the air traveller pathway to be high risk and has extended increased intervention measures to some ASF-infected countries such as Indonesia, the Philippines and Timor-Leste. Travellers from ASF-affected countries intending to work in Australian piggeries and on some other farms present the highest risk cohort of travellers. However, mitigation of this risk appears to rely too heavily on voluntary actions by their Australian employers.

The IGB noted that the department's slow response to new sources of ASF risk presents a significant period of risk exposure. This response time is likely due to a lack of biosecurity staff or inflexible funding and employment options that prevent a rapid ramp-up or redeployment of staff. There is a risk that rhetoric about ASF responsiveness runs ahead of operational reality, such that key stakeholders gain a dangerously optimistic view of the completeness and timeliness of ASF prevention measures.

## Chapter 8

# Regulatory powers and capability to apply regulation

### 8.1 Appropriate regulations and processes

The key regulatory powers underpinning measures to minimise biosecurity risks entering Australia are contained within the *Biosecurity Act 2015*. This includes powers vested in the Director of Biosecurity (through the Governor-General of Australia) to prohibit the introduction or importation of pig meat into Australia. In addition, food (including pig meat) entering Australia is subject to the *Imported Food Control Act 1992*, the Imported Food Control Regulations 1993 and the Australia New Zealand Food Standards Code.

The department has comprehensive powers available to prevent ASF risk material entering Australia, and to apply regulatory penalties to those involved. International travellers can avoid penalties at the border by declaring any animal, plant or food products they are carrying into Australia.

In April 2019 the Australian Government amended the migration laws, allowing the Australian Border Force (the Department of Home Affairs) to either shorten or cancel international visitors' visas for up to 3 years for biosecurity contraventions and the importation of objectionable goods (Sullivan 2019). This has enabled Home Affairs to cancel the visas of international visitors who infringe provisions of the *Biosecurity Act 2015*, by:

- failing to declare goods
- providing false or misleading information, such as on an incoming passenger card.

Travellers who fail to declare goods can also be issued with a written warning or on-the-spot infringement notice (\$420 fine) for providing false or misleading information. The department records these actions and could use these in future interventions for non-compliant travellers. Between 5 November 2018 and 31 January 2020 the department intercepted over 39 tonnes of pork products from over 47,000 travellers. The department issued 1,775 infringement notices (33% of non-compliant travellers) and 2,338 written warnings (43% of non-compliant travellers).

The Australian Border Force (the Department of Home Affairs) has exercised these regulatory (legislative) powers, on several occasions, by cancelling visitor visas for biosecurity non-compliances—demonstrating the government’s commitment to protecting the country’s biosecurity status. On 12 October 2019 Australian Border Force officials first cancelled an international traveller’s visa using the new biosecurity-related regulatory power of the Migration Regulations 1994. The traveller had knowingly produced a false or misleading document (incoming passenger card) to a biosecurity officer at Sydney International Airport as she failed to declare over 10 kg of high-risk items, including 4.6 kg of pork. At 31 January 2020 Australian Border Force officials had cancelled 10 visitor visas using the new cancellation grounds—8 of these decisions relate to a failure to declare pork or pork products.

The department manages the high biosecurity risk presented by pork and pork products (Figure 6 and Figure 7) as biosecurity waste and treats (destroys) to remove risk.

**FIGURE 6** Uncooked pig meat seized from a traveller at Sydney airport, October 2019



**FIGURE 7** Pork meat mooncakes seized from a traveller at Sydney airport, November 2019



## 8.2 Frontline staff equipped to apply regulations

The ability of the department's frontline staff to efficiently issue infringement notices is hindered by a lengthy manual process. On 11 December 2019 the Minister for Agriculture announced biosecurity funding of \$66.6 million to safeguard Australia from the threat posed by the global advance of ASF. This funding will enable the department to purchase new mobile devices to issue immediate infringement notices and accept immediate payment. Trials of the new devices are planned for 2020 with implementation anticipated in early 2021.

## Chapter 9

# Appropriate technical support at all key sites

The IGB noted that technical support at international airports is appropriate but could be improved. Airports and airlines are working to optimise passenger movement and positive experience, and the department is seeking to improve the efficiency of airport intervention to mitigate passenger-linked biosecurity risks. The increased use of mobile devices would support these efforts and improve the delivery of regulatory actions and communication.



## Chapter 10

# Appropriate ASF-related data and management information

### 10.1 Practical data capture systems

The department needs ongoing investment in better IT systems and associated internal business process transformation. Improved access to good data and real-time analysis will enable departmental officers to focus on areas of highest risk and reduce efforts in low-risk areas.

Data indicates undeclared high-risk biosecurity material is being brought into Australia, but current processes and data limitations inhibit the department's ability to be fully effective in targeting non-compliant travellers. The move from manual to automatic risk assessments has increased the efficiency of targeting high-risk passengers.

To support an effective and efficient regulatory function, the department must tactically allocate resources—including upgrading IT systems in line with Department of Home Affairs changes. This will enable the department to use real-time data for quick automated risk assessment. It would also help address issues such as the limited movement data available for travellers that transit through non-ASF country airports.

#### **Recommendation 8**

The department should invest more in information technology systems in line with the Department of Home Affairs changes for seamless movement of arriving travellers. This will enable the department to use all available data for real-time, automated risk assessment.

**Department's response:** *Agreed.*

This work has commenced with the department already investing in whole of government seamless traveller initiatives including development of mobile capability for improved data collection and traveller clearance processes in conjunction with Australian Border Force. The department will continue to explore additional opportunities to achieve this outcome.

## 10.2 Timely, accurate management reports

Current systems data and reporting do not support informed decision-making. The department needs to be able to track trends and patterns to manage biosecurity risk in a more targeted way. It also needs to flexibly align border controls to manage changing risk levels and be able to intercept that risk. Current reporting can take an unnecessarily long time. The department must move to real-time reporting as soon as possible.

## Chapter 11

# Adequate public information about the biosecurity risk of ASF

Unless detected and dealt with early, it is extremely difficult to completely eradicate a pest or disease. Direct and indirect costs can quickly run into the millions. Raising public awareness of issues in a way that will promote behaviours that reduce biosecurity risks is a complex task requiring sustained joint action.

The complexity of managing the biosecurity risks posed by increasing commodity types and volume of undeclared pork imports in high-risk pathways is disguising rising risk levels. Several recent reports noted that the authorities fear the disease could enter Australia through the mail system, with lack of awareness among thousands of international students who receive packages of processed meats from family or friends back home (Harris 2019, Goodwin 2019, Vivian & Heaney 2019). Tourists are also often unaware of biosecurity threats, inadvertently bringing pork products on their return back from overseas holidays (Giakoumelos 2019).

In the report *One Biosecurity: A working partnership* Beale et al. (2008) emphasised that commercial business involvement should be focused on promoting and practising good biosecurity. They noted:

Businesses that deliberately breach Australia's biosecurity system should attract substantial penalties where offenders can be identified. However, it is often difficult to find transgressors and even more difficult to mount successful prosecutions. Those business sectors whose dealings may represent a biosecurity threat, including those with a history of biosecurity breaches, should be subject to targeted education and awareness campaigns. This would ensure the requirements and their obligations are clearly understood, thereby improving compliance (p. 73).

Since the release of *One Biosecurity: A working partnership*, the department has progressively engaged with industry to promote good biosecurity practices. The IGB noted that, in the past year, the department has engaged with key industry bodies, including international airlines, tourism agencies, Australia Post, overseas postal services and international authorities to raise awareness of travellers and mail recipients.

## 11.1 Industry

The department has engaged directly with the state and territory Chief Veterinary Officers and peak industry body, Australian Pork Limited (APL) to review arrangements for feeding of pet food that contains porcine ingredients. It is also regularly publishes messages for importers and brokers on the ASF situation, via import industry advice notices and on its Biosecurity Import Conditions (BICON) system.

## 11.2 Travellers

The government is actively managing heightening risks in the traveller pathway. The IGB noted that in the past year the department has engaged with key industry bodies—including international airlines, tourism agencies, Australia Post, overseas postal services and international authorities—to raise awareness among travellers and mail recipients. The department's ASF awareness campaign has included:

- a request by the Minister for Agriculture that the department actively engage with international student associations and tour operators to ensure the message is getting through (Giakoumelos 2019)
- the release of a new in-flight passenger video 'Don't be sorry—just declare it' in March 2019—played on all incoming international flights. The video is available in 7 languages and informs passengers to mark 'yes' on the incoming passenger card to declare:
  - all food and animal, plant or medicinal products that they are carrying
  - if their clothes are dirty and muddy or have been in contact with rivers
- informing all airlines flying directly from mainland China and Vietnam to Australia of ASF intervention measures taken at the point of entry
- engaging with Chinese tour operators to advise tour groups not to bring high-risk goods to Australia but that, if they do, those goods must be declared
- erecting more banners and electronic signage in international airports to publish messages on the ASF situation.

This review attributes the substantial increase in the proportion of people declaring goods in the traveller pathway to successful campaigns by the department to raise awareness about biosecurity risks of ASF. However, the department should increase its awareness campaign in high-risk countries to also target the mail and airfreight pathways. This would address the relatively low proportion of mail that is correctly declared.

The department should invest in smarter real-time digital signage at major international airports to target arriving flights. This signage should be able to be changed by departmental officers using a mobile device. Upon arrival, passengers could also be greeted with a pop-up message on their phones reminding them to 'declare it'.

The department will also be trialling the use of detector dogs to screen travellers in the primary line and baggage carousels. This would serve as a deterrent and help raise biosecurity awareness.

**Recommendation 9**

The department should increase and sustain its awareness campaign in high-risk countries to target the mail and airfreight pathways, especially using social media platforms.

**Department's response:** *Agreed.*

The department is working closely with Australia Post, major online sellers, air couriers and other stakeholders to implement a range of ASF awareness campaigns in mail and airfreight pathways. The department will further strengthen its awareness campaign and education activities in these pathways through printed and electronic material including social media content.

**Recommendation 10**

To target arriving travellers, the department should invest in real-time digital signage at major international airports that can be rapidly changed (including language) by a departmental officer using a mobile device.

**Department's response:** *Agreed.*

The department works with the Australian Border Force to display relevant biosecurity messages in arrival halls at international airports. Electronic signage has been used to increase awareness of travellers about biosecurity risks, including ASF, and can be changed at short notice in response to emerging biosecurity risks. The department will continue to explore other opportunities to modernise signage at international airports.

**Recommendation 11**

The department should consider developing a 'just declare it' alert that is automatically sent to arriving passengers' mobile phones when they turn their phones off flight mode.

**Department's response:** *Agreed in principle.*

The department will continue to explore opportunities to develop automatic messaging for passengers arriving in international airports.

## 11.3 Public

The department conducts targeted public awareness programs against undeclared imported pork and pork products. These programs include preventative intervention actions to manage associated biosecurity risk, such as:

- creating a page on the department's website about the ASF situation (September 2018)
- publishing messages about the ASF situation through Australian-based Chinese-language newspapers and on social media channels, Facebook and Weibo
- advising overseas ecommerce companies to stop supplying pork and pork products to Australian shoppers.

States and industry are also running public education campaigns to raise awareness about the biosecurity risks of swill feeding and feeding imported pet food to pigs, and urging international travellers to declare all food items on arrival (OIE 2019).

The IGB noted that the awareness activities undertaken by the department, states and industry appear to be working as shown by increased declaration (up to 90%) of pork and other biosecurity risk material in the international travellers pathway ([Chapter 2](#)). However, the department needs to urgently review processes that enhance risk identification, communication, management and governance of the international mail pathway.

## Chapter 12

# Appropriate partnership with industry pre-border and at-border

### 12.1 Agribusiness sector

The IGB noted a high level of post-border cooperation in ASF preparedness— with stronger industry and public awareness, and industry, state and business level preparedness activities completed or in train.

The department has been working closely with pork industry representatives, including Australian Pork Limited and Animal Health Australia, on industry and community awareness and industry preparedness programs.

The department has also engaged with the Stockfeed Manufacturers' Council of Australia on the use of stockfeed additives by the pig industry.

### 12.2 Import transport and logistics sector

The department has a close working relationship with international airlines and airport operators.

To raise awareness about ASF, the department has sent posters, stickers and information to Conference of Asia Pacific Express Carriers (CAPEC) members for distribution to their onshore depot staff and overseas partners. Similar material was sent to the Department of Home Affairs seeking its cooperation for enhanced vigilance in the air cargo pathway.

The IGB assesses that the department has a good relationship with industry. The support of the Freight & Trade Alliance is an example of the critical role played by industry organisations in interfacing with member businesses. Further development of co-design and co-regulatory partnerships with industry and companies will be essential for the department to cost-effectively meet future biosecurity challenges.

## Chapter 13

# Identification of post-border pathways linking ASF risk material to Australian pigs

### 13.1 Seasonal workers

ASF is harmless for humans but spreads rapidly among domestic pigs and wild boars through direct contact or exposure to contaminated feed and water. For instance, piggery workers can unwittingly carry the virus on their shoes, clothing and equipment. It can survive in fresh and processed pork products. It is even resistant to some disinfectants.

With no vaccine available, controlling the spread of the virus can be difficult—especially in high-risk countries dominated by small-scale farmers who may lack the necessary resources and expertise to protect their herds.

Travellers arriving on flights directly from mainland China are subject to greater scrutiny by the department. This includes more intensive questioning to determine if manual inspection of footwear or equipment is required for travellers who have been near pigs, farms, markets, zoos or have been on hunting trips.

Australia has a long history of hiring overseas workers to fill the gap for increased demand for labour on their farms. Australian farmers can sponsor overseas workers to work temporarily on their farms under Temporary Skill Shortage visa (subclass 482) or the Seasonal Worker Programme (temporary work visa subclass 403). Ten countries participate in the Seasonal Worker Programme, including Timor-Leste.

Unconfirmed reports estimate that each month 300 to 400 workers enter Australia from Timor-Leste. These farm workers could be carriers of ASF virus—posing a very serious risk of introducing the disease into Australian pig farms or feral pig infested areas. The department is able to identify seasonal workers through such programs. Direct engagement with these entities will educate and inform these cohorts. The IGB noted that the Australian pig industry recently hired a number of overseas specialist pig workers from ASF-affected countries, such as the Philippines and China. Both the Philippines and China are not on the list of countries approved under the Seasonal Worker Programme.



Risk assessments conducted by the department consider the risk of entry of diseases relating to specific commodities but do not differentiate between ports of entry. However, in response to the ASF outbreak in Timor-Leste in November 2019 and a small relative increase in the risk of fomite transmission of ASF (due to the short transport time), the department has provided advice on requirements to manage seasonal workers and farmers, particularly in Northern Australia.

The department should make improvements, including:

- incorporation of relevant additional criteria to include seasonal workers who are often contracted to work in agricultural enterprises in Australia
- targeted operations during peak seasonal times
- heightened arrival risk assessments by biosecurity officers for identified high-risk ASF flights.

The requirements will need to be applied nationally to enhance traveller risk assessment.

### **Recommendation 12**

The department should include additional criteria in risk assessment for flights from African swine fever- affected countries, including a focus on seasonal farm workers.

**Department's response:** *Agreed.*

The department has already commenced work to improve the data used to inform traveller risk assessment and will continue to explore opportunities to further refine the best set of criteria. Implementation of the Mobile Passport Reader application that is currently being trialled will provide additional data on traveller intervention.

## Chapter 14

# Appropriate government and industry collaboration

### 14.1 Partnerships with overseas governments

Australia is an active contributor to the delivery of global animal health programs that assist other countries to manage disease threats. In forums such as the World Organisation for Animal Health, the Food and Agriculture Organization of the United Nations (FAO) and the World Trade Organization, Australia is influential in the setting of international standards and global policy that minimise the biosecurity risk associated with legal trade of animals and animal products.

Australia also maintains a presence in global and regional symposiums, workshops and groups to influence global approaches to ASF risk mitigation, gather intelligence and support countries in the region to implement best practice methods for the prevention and control of ASF. The department has been assisting neighbouring jurisdictions to limit the risk of ASF incursion, including:

- working with Timor-Leste and Papua New Guinea authorities to build capacity in animal health surveillance and detection of emerging and important exotic pests and diseases
- assisting Timor-Leste and Papua New Guinea governments to develop ASF awareness materials for domestic pig farmers and incoming international passengers with messages outlining the risks associated with importing pork products from affected countries
- providing technical and logistical assistance to have samples tested at Australian Animal Health Laboratory (AAHL), following the suspicion of ASF in Timor-Leste. Once the disease was confirmed, the department assisted Timor-Leste authorities to prepare the necessary reports to the World Organisation for Animal Health to meet its international reporting obligations. The department also sent technical officers to provide on-ground support
- coordinating the provision of reagents from AAHL (and with support from FAO) to a number of south-east Asian countries in August 2018 for ASF surveillance testing. AAHL continues to provide kits and reagents to laboratories upon request.

## 14.2 State and territory governments

For Australian governments, the sharing of responsibility occurs through a cooperative partnership under the Intergovernmental Agreement on Biosecurity (IGAB) and various subcommittees established within the National Biosecurity Committee. The IGAB is an agreement between all Australian governments, which sets out their commitments, outlines the agreed national goals and clarifies roles and responsibilities.

At the border the department works collaboratively with the Department of Home Affairs, particularly Border Force. The departments have a Memorandum of Understanding covering:

- information and communications technology sharing
- international mail
- air and sea cargo operations
- passenger and crew processing at international airports and cruise terminals and wharfs.

Border Force manages the Integrated Cargo System (ICS), which records all sea cargo, imports and exports information. The department is dependent on the ICS risk assessment engine that electronically refers commercial consignments with potential biosecurity risks to the department's Agriculture Import Management System (AIMS) for further assessment by biosecurity officers.

## 14.3 Industry

The Australian, state and territory governments are working with industry to ensure all parties understand response arrangements in the event of an ASF incursion. The department has engaged directly with state and territory Chief Veterinary Officers and the peak industry body, Australian Pork Limited, to review arrangements for the feeding of pet food that contains porcine ingredients. It also regularly publishes messages for importers and brokers about the ASF situation through import industry advice notices and on its Biosecurity Import Conditions (BICON) system.

## 14.4 Preparedness

Animal Health Australia (AHA) is a not-for-profit public company that facilitates partnerships between governments, major livestock industries and other stakeholders to protect animal health and Australia's livestock industry. AHA manages the development and review of the Australian Veterinary Emergency Plan (AUSVETPLAN). AUSVETPLAN contains the nationally agreed approach for all diseases categorised under the Emergency Animal Disease Response Agreement (EADRA).

The EADRA is a contractual arrangement between governments and industry groups to collectively reduce the risk of disease incursions and manage a response if an outbreak occurs. EADRA covers 66 categorised animal diseases and has 9 government and 14 industry body signatories to the deed.

Under the EADRA, there are 4 categories of disease. These categories determine the cost-sharing arrangement of a declared emergency response. ASF is included as a category 3 emergency animal disease, meaning costs are shared 50% by government and 50% by industry.

On 6 December 2019 the department conducted a simulation exercise on the roles and responsibilities of the Consultative Committee on Emergency Animal Diseases and the National Management Group during an ASF outbreak. These 2 groups are primarily responsible for determining if an outbreak can be contained or eradicated. A larger exercise that will include producers and those involved in the supply chain is proposed for 2020.

As part of diagnostic preparedness, the department has increased ASF polymerase chain reaction detection capability at the Australian Animal Health Laboratory (AAHL) to deal with the large number of samples that would require testing during a disease outbreak.

On 11 October 2019 the department, in collaboration with the CSIRO, published a new comprehensive online field guide for Australian veterinarians to deal with emergency animal diseases (Department of Agriculture and CSIRO 2019). The field guide would help veterinarians with the early detection, diagnosis and control of exotic and emerging infectious diseases in livestock.

## Chapter 15

# Impacts of ASF on other biosecurity risk measures appropriately assessed and action taken

## 15.1 Surge in brown marmorated stink bug incidents

Approximately half of the department's detector dogs have been trained to detect BMSB and are being used to verify fumigation on break-bulk cargo during the BMSB season. The same dogs are also deployed for screening of meat and meat products at airports and mail centres. December to March is a peak period for travellers visiting Australia and therefore presents heightened risk of ASF entering Australia. This period overlaps with BMSB season, which starts on 1 September and finishes on 30 April. The capability of the department's detector dogs and trainers are tested at different first points of entries during 2 simultaneous surge events (travellers and BMSB).

The IGB had received comments from horticulture importers that clearance of fresh produce had been delayed by up to 9 days due to unavailability of biosecurity inspectors. It is unclear whether that was due to resources allocated to manage ASF risk.

## 15.2 Risk-return approach applied to resource re-allocation

In late 2018 the department identified the mail and air traveller pathway as being high risk for ASF. The current ASF risk environment is not occurring in isolation of other biosecurity risk trends. The department's modelling has indicated that travel and trade trends and non-biosecurity border processing changes could increase residual biosecurity risk by as much as 70%. The department developed the Future Traveller Program to address the growing risk and recruited some non-ongoing staff as an interim measure.

Australia requires long-term secured funding to support the stronger biosecurity risk management measures needed to prevent the entry of unwanted pests or diseases. Frontline inspector numbers have fallen over the years but volumes of incoming sea and air cargo, mail and passengers continue to rise steadily, as do accompanying biosecurity risks. The announcement of \$66.6 million to address the immediate threat of ASF has enabled the department to deploy appropriately trained staff from January 2020 to help mitigate ASF risk during the seasonal traveller surge periods. This funding boost to address passenger pathway risks is a short-term (18-month) measure that does not address underpinning adverse trends in biosecurity risks.

The department should also allocate resources to cover the cost of testing a proportion of seized material to inform a risk-return approach to activities.

## 15.3 Remedial and recovery plans in place for risk areas reduced in resources

Previous IGB reports have been critical of inspection reductions in the Cargo Compliance Verification (CCV) program. The objective of the CCV program is to verify that the department's controls are working effectively and to provide insight into emerging biosecurity risks. The number of inspections dropped significantly following the 2018–19 BMSB season and the white spot prawn disease outbreak in 2017. The department has assured the IGB that CCV inspection rates have increased. However, they appear to be far from achieving their annual targets. The deficit appears to have flow-on effects for the department's ASF biosecurity risk mitigation efforts.

## 15.4 Options for innovation examined to enable risks to be mitigated with reduced resources

It is debatable whether the department has adequately and effectively engaged with industry in appropriate and commercially practical co-regulatory arrangements to address the ASF challenge.

As a regulator, the government should encourage industry co-regulation through quality assurance programs to reduce unnecessary regulation. However, co-regulation needs to be monitored closely, with more risk-based and unannounced spot audits. Higher levels of random inspection of screening activities may be relaxed once the agency has demonstrated compliance. However, it would be unwise to revert to previous levels of trust in consignee declarations.

The department needs to strike a better balance between facilitating efficient trans-border movement of mail, parcel and goods, and ensuring that biosecurity risks are effectively managed—recognising that the key clients of the biosecurity system are the Australian community, industries and the environment. For example, the department has continued working collaboratively with Australia Post to mitigate ASF and other biosecurity risks in the mail and parcel pathway.

The department recovers costs from other entities, including from Australia Post for the biosecurity activities conducted at the international mail gateway facilities. For international mail, the *Biosecurity Act 2015* imposes responsibility on Australia Post to mitigate biosecurity risks from its mail and parcel business streams. The department could engage with Australia Post in co-regulation of biosecurity measures, including the purchase or leasing and operation of 3D scanners operated by Australia Post—subject to agreed standards, and audit and verification activities undertaken by the department. This would dramatically change the staffing and capital imposts on the department for this pathway, bring it into line with approaches that will need to be taken in other commercial pathways, and reduce the budget and approval requests made to central agencies and Cabinet.

### **Recommendation 13**

The department should explore opportunities for new and expanded co-regulatory arrangements with targeted industry sectors, including those that use 2D and 3D CT scanners.

**Department's response:** *Agreed.*

The department is in the early stage of implementing 3D x-ray as a border screening tool and has begun discussing potential co-regulatory arrangements with industry sectors including Australia Post, air cargo couriers, airlines and airports for the use of x-ray technology and access to images for risk assessment. The department agrees with the potential of this arrangement to leverage existing infrastructure to identify biosecurity risks.

## Chapter 16

# Contingency plans for long-running ASF measures assessed and advice provided to the minister

### 16.1 Ministerial engagement

The Minister for Agriculture has been closely engaged with the ASF initiatives, including industry workshops, public awareness campaign, and announcements of increased ASF resources and regulatory intervention for air passengers.

In September 2019 the Minister for Agriculture convened a roundtable at Parliament House in Canberra, which included 40 representatives from a range of industries and government departments. Issues discussed to strengthen biosecurity and trade included:

- adequate resourcing for government and industry
- continuation of enhanced activities at the border
- simulation exercises needed for governments and industry
- communication and coordination between government, industry and the community
- community, producer and traveller education and awareness
- development of industry business continuity strategies in case of an outbreak.

The department is facing significant strain from:

- the ASF threat to the Australian pork industry
- the substantial ramp-up in pre-border and at-border biosecurity measures necessary to effectively mitigate the ASF risk
- post-border cooperation challenges not covered in this report
- other major biosecurity risks
- trying to achieve the rate of organisational reform needed to address overall future biosecurity readiness.

It is not clear that the department has had the opportunity to forecast and plan the intervention strategies and timelines necessary to address ASF risk, but its prevalence and impact in the region continues to evolve.



The department was managing 2 major ramp-ups in biosecurity activity, namely ASF and BMSB, before it was required to respond to the coronavirus human health threat. It is likely that Australia will be confronted with at least 1 additional resource-intensive at-border biosecurity challenge during the short-term (less than 3 years). It could potentially be challenged by 1 or more biosecurity threats to Australian agriculture, natural resources or human wellbeing that eclipse the socio-economic importance of the current ASF threat.

## **16.2 Track record of government responsiveness**

Previous IGB reports, delivered over a number of years, have clearly highlighted that resource levels and agility for the department's biosecurity prevention measures are major challenges for Australia.

Australian Government bureaucracies and successive Australian governments do not appear to have wwn the relative merit of establishing more adequate and sustainable funding arrangements for our nation's biosecurity prevention strategies and services.

The recent initiative to establish a Biosecurity Imports Levy is a major step in the right direction. However, the department must urgently develop a comprehensive plan for funding nationally critical pre-border and at-border biosecurity services that are practical for businesses to integrate into efficient daily operations.

## Appendix A

# Agency response

16 March 2020

Mr Rob Delane  
Inspector-General of Biosecurity  
Australian Government Department of Agriculture, Water and the Environment  
GPO Box 858  
CANBERRA CITY ACT 2601

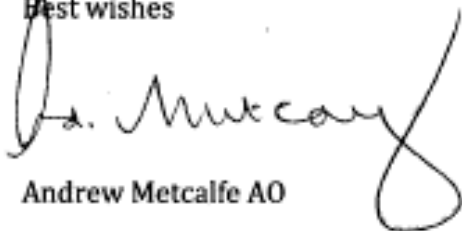
Dear Mr Delane

Thank you for your letter of 3 March 2020 about your review report, the *Adequacy of preventative border measures to mitigate the risk of African swine fever*. We appreciate the opportunity to respond to your findings and recommendations.

The Department of Agriculture, Water and the Environment agrees with the recommendations of the report, and has already commenced work on a number of the issues raised. Specific comments in response to your recommendations are attached (Attachment A). There are no matters referenced in your report that would be prejudicial to the public interest and should not be made publically available.

If you require any further clarification, please contact Dr Robyn Martin at 02 6272 2033 or [robyn.martin@awe.gov.au](mailto:robyn.martin@awe.gov.au).

Best wishes



Andrew Metcalfe AO

## **Attachment A: Department of Agriculture, Water and the Environment – responses to recommendations**

### **Recommendation 1**

The department should increase intervention on flights, especially from neighbouring countries affected by African swine fever, to capture adequate numbers of high risk matches and determine resources required to mitigate the risk of African swine fever.

*Response: Agreed.*

The department has increased intervention for high risk flights, commencing late 2019. By the end of 2020, an additional 500 000 passengers will have been screened under the \$66.6 million African swine fever (ASF) package announced in December 2019.

### **Recommendation 2**

Using detector dogs at major seaports, the department should screen passengers ending their cruise ship voyage in Australia through targeted operations to ascertain the rate of leakage of meat and meat products in the current manual screening by biosecurity staff.

*Response: Agreed.*

The department has commenced planning for targeted operations in the cruise vessel pathway. Current planning includes detector dogs as well as other biosecurity screening methods.

### **Recommendation 3**

The department should increase screening of express mail service and parcels from African swine fever-affected countries (in addition to China) at targeted mail centres. The outcomes should be recorded electronically in a central register to allow for a quick post-hoc analysis to inform relevant policies and operations.

*Response: Agreed.*

The department has increased screening of mail classes (express mail service, parcels and other articles) from ASF-affected countries with implementation of revised mail profiles commencing in 2020. All detections resulting from the increased screening will be recorded in the Mail and Passenger System (MAPS), and will inform frequent data reporting and analysis performed by the department.

#### **Recommendation 4**

The department should analyse the airfreight pathway to ascertain why incorrectly declared items have a higher compliance rate in this pathway compared to the mail pathway.

*Response:* Agreed.

The department has commenced analysis of this pathway.

#### **Recommendation 5**

The department should work closely with commercial importers and brokers of pork products to ensure product descriptions on imported tariff products that are not swine-specific are accurate and include 'pork', where applicable.

*Response:* Agreed.

The department will continue to undertake a range of communication activities to ensure commercial importers and brokers are aware of their biosecurity responsibilities in relation to import declarations and tariff codes. The department also monitors compliance of pork import declarations and where systemic non-compliance is observed ensures process improvements are made and any relevant regulatory actions are initiated.

#### **Recommendation 6**

The department should urgently expand the detector dog program, consistent with the increase in traveller numbers and mail volumes, to minimise entry of all undeclared meat and meat products into Australia.

*Response:* Agreed.

The department is expanding the detector dog program under the \$66.6 million ASF package which includes funding for the procurement and training of six additional biosecurity detector dogs. The additional detector dogs will be deployed by July 2020.

#### **Recommendation 7**

The Australian Government should commit to ensuring adequate long-term (3- to 5-year) funding for African swine fever risk management, including border screening and enforcement. Funding for biosecurity measures (including strong intelligence and risk-based measures) should be linked to growth in traveller numbers, trade volumes and associated biosecurity risks.

*Response:* Noted.

This is a matter for government.

**Recommendation 8**

The department should invest more in information technology systems in line with the Department of Home Affairs changes for seamless movement of arriving travellers. This will enable the department to use all available data for real-time, automated risk assessment.

*Response:* Agreed.

This work has commenced with the department already investing in whole of government seamless traveller initiatives including development of mobile capability for improved data collection and traveller clearance processes in conjunction with Australian Border Force. The department will continue to explore additional opportunities to achieve this outcome.

**Recommendation 9**

The department should increase and sustain its awareness campaign in high-risk countries to target the mail and airfreight pathways, especially using social media platforms.

*Response:* Agreed.

The department is working closely with Australia Post, major online sellers, air couriers and other stakeholders to implement a range of ASF awareness campaigns in mail and airfreight pathways. The department will further strengthen its awareness campaign and education activities in these pathways through printed and electronic material including social media content.

**Recommendation 10**

To target arriving travellers, the department should invest in real-time digital signage at major international airports that can be rapidly changed (including language) by a departmental officer using a mobile device.

*Response:* Agreed.

The department works with the Australian Border Force to display relevant biosecurity messages in arrival halls at international airports. Electronic signage has been used to increase awareness of travellers about biosecurity risks, including ASF, and can be changed at short notice in response to emerging biosecurity risks. The department will continue to explore other opportunities to modernise signage at international airports.

### **Recommendation 11**

The department should consider developing a 'just declare it' alert that is automatically sent to arriving passengers' mobile phones when they turn their phones off flight mode.

*Response:* Agreed in principle.

The department will continue to explore opportunities to develop automatic messaging for passengers arriving in international airports.

### **Recommendation 12**

The department should include additional criteria in risk assessment for flights from African swine fever- affected countries, including a focus on seasonal farm workers.

*Response:* Agreed.

The department has already commenced work to improve the data used to inform traveller risk assessment and will continue to explore opportunities to further refine the best set of criteria. Implementation of the Mobile Passport Reader application that is currently being trialled will provide additional data on traveller intervention.

### **Recommendation 13**

The department should explore opportunities for new and expanded co-regulatory arrangements with targeted industry sectors, including those that use 2D and 3D CT scanners.

*Response:* Agreed.

The department is in the early stage of implementing 3D x-ray as a border screening tool and has begun discussing potential co-regulatory arrangements with industry sectors including Australia Post, air cargo couriers, airlines and airports for the use of x-ray technology and access to images for risk assessment. The department agrees with the potential of this arrangement to leverage existing infrastructure to identify biosecurity risks.

## Appendix B

# Swine-specific and not swine-specific tariff codes for pork and pork products entered Australia between January 2018 and October 2019

**TABLE B1** Swine-specific tariff codes

<b>Tariff code and description</b>	<b>Product details</b>
0203 Pig meat	02030000.00 Pig meat (Family)
	02032900.30 Pork, bone in, frozen
	02032900.40 Pork, leg cuts, frozen
	02032900.41 Pork, boneless middle cuts, frozen
	02032900.42 Pork, boneless shoulder cuts, frozen
	02032900.45 Pork meat, boneless other, frozen
	02031900.9 Pork, other, fresh
0209 Pig and poultry fat	02091000.10 Pig fat
0210 Cured meat and offal	02101200.17 Pork bellies
	02101900.18 Pork, preserved
	02101100.16 Pork hams and shoulders
1602 Other prepared meat	16024100.08 Pig hams, prepared
	16024100.10 Pig hams, vacuum sealed
	16024100.90 Pig hams, other prepared
	16024900.30 Pig meat, other, prepared
	16024900.40 Pig meat, bellies, vacuum sealed
	16024900.49 Pig meat, bellies, other prepared
	16024900.60 Pig meat, ribs, vacuum sealed
	16024900.69 Pig meat, ribs, other prepared
	16024900.70 Pig meat, loins, vacuum sealed
	16024900.90 Pig meat, prepared, other
	16024200.09 Pig shoulders, prepared
16024200.10 Pig shoulders, vacuum sealed	

**TABLE B2** Not swine-specific tariff codes

<b>Tariff code and description</b>	<b>Product details</b>
1601 Sausages	16010000 Sausages
1602 Other prepared meat	16022000.03 Liver, prepared
	16029000.49 Meats, other, prepared
3001 Glands and other organs	30019000.09 Glands
3002 Blood, antisera, vaccines	03002000 Blood, antisera, vaccines (family)
3503 Gelatin	35030010.11 Gelatin
3507 Enzymes	35079000.16 Enzymes, other
4203 Leather apparel	42032990.96 Gloves, leather, other



# Glossary

Term	Definition
Approved arrangement	A voluntary legislative agreement between the department and another party to carry out specified activities to manage biosecurity risks associated with imported goods.
Biosecurity	Managing risks to Australia's economy, environment and community of pests and diseases entering, emerging, establishing or spreading in Australia.
Biosecurity risk	As defined by the <i>Biosecurity Act 2015</i> : The likelihood of a disease or pest: <ul style="list-style-type: none"> <li>• entering Australian territory or part of Australian territory, or</li> <li>• establishing itself or spreading in Australian territory or part of Australian territory and</li> </ul> The potential for any of the following: <ul style="list-style-type: none"> <li>• The disease or pest to cause harm to human, animal or plant health.</li> <li>• The disease or pest to cause harm to the environment.</li> <li>• Economic consequences associated with the entry, establishment or spread of the disease or pest.</li> </ul>
Biosecurity risk material (BRM)	Material that has the potential to introduce an exotic pest or disease into Australia. Includes live animals and animal material, live plants and plant material, meat and meat products, fruit and vegetables, veterinary therapeutic and vaccines.
End-point survey	A verification activity conducted at the point at which the biosecurity clearance process has been completed.
Epidemiology	Branch of medicine dealing with the incidence, distribution, and possible control of diseases.
Express Mail Service (EMS)	Priority international mail service, articles can weigh up to 30 kg, with a maximum length of 150 cm for any 1 dimension.
Incoming Passenger Card (IPC)	A document completed by all international passengers permanently disembarking an aircraft or vessel arriving into Australian territory.
Leakage	BRM that is detected during end-point surveys, and was not detected by biosecurity intervention processes.
Mail and Passenger System (MAPS)	The primary electronic data collection and reporting application repository for the traveller, mail and cruise vessel pathways.
Screening	The department uses X-rays, detector dogs and manual inspection to screen international travellers and mail for biosecurity risk material.

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