



## Biosecurity: Livestock



VICTORIA

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Victorian  
Auditor-General

# Biosecurity: Livestock

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The Hon Bruce Atkinson MLC  
President  
Legislative Council  
Parliament House  
Melbourne

The Hon Telmo Languiller MP  
Speaker  
Legislative Assembly  
Parliament House  
Melbourne

Dear Presiding Officers

Under the provisions of section 16AB of the *Audit Act 1994*, I transmit my report on the audit *Biosecurity: Livestock*.

This audit assessed the effectiveness of Victorian biosecurity practices that relate to livestock disease management and the associated risks to primary production, animal welfare and human health. It focused on exotic livestock diseases, as well as other emergency animal diseases, such as anthrax.

I found that a decline in financial and staff resourcing for core biosecurity functions has weakened the state's capacity to detect, prepare for and respond to emergency livestock disease outbreaks. This increases the potential for a major disease outbreak going undetected until it has become established.

Yours faithfully



John Doyle MBA FCPA  
*Auditor-General*

19 August 2015



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# Auditor-General's comments



John Doyle  
*Auditor-General*

Victoria's enviable biosecurity status yields significant benefits for the state. In addition to benefiting public health, it has helped to provide its agricultural industries with access to premium export markets, which has generated significant revenue for the state, with the value of food and fibre exports totalling \$11.4 billion in 2013–14.

Despite this advantageous position, exotic and other emergency livestock diseases remain ongoing threats, the complexity of which is increasing in line with growing international trade and travel, changing agricultural practices and the impact of climate change.

Past outbreaks in other jurisdictions have shown the devastating effect that a large-scale livestock disease outbreak could have here in Victoria. The 2001 foot-and-mouth disease (FMD) outbreak in the United Kingdom resulted in economic losses totalling US\$12 billion and the slaughter of more than six million sheep and cattle. While Australia is currently free of FMD, the Australian Bureau of Agricultural and Resource Economics and Sciences estimates that a large scale, multi-state FMD outbreak would result in economic losses totalling \$52 billion over a 10-year period.

In this audit I assessed the effectiveness of Victorian biosecurity practices that relate to exotic and other emergency livestock diseases and the associated risks to primary production, animal welfare and human health. The audit focused on the Department of Economic Development, Jobs, Transport & Resources (DEDJTR) as the agency with primary responsibility for livestock biosecurity. It also included the Department of Health and Human Services (DHHS) in so far as its collaboration with DEDJTR into the management of zoonotic livestock disease threats.

This audit found Victoria's livestock biosecurity system to have been weakened by a decline in financial and staff resourcing. While this is consistent with a wider government initiative to achieve greater resourcing and operational efficiency, in effect it reduced DEDJTR's on-ground capacity to detect an exotic livestock disease outbreak before it spreads and becomes established.

Ultimately these trends place the future of the state's substantial livestock industries and their economic potential at greater risk. Even in the absence of a significant disease outbreak, shortfalls in frontline biosecurity resources can limit the state's ability to demonstrate its livestock health status.

I note that the reduction in biosecurity resourcing is not a challenge unique to Victoria. For example, Queensland's ongoing review of biosecurity capability has been partly informed by similar resourcing challenges. These circumstances are likely to further increase Victoria's exposure to exotic and other emergency livestock disease threats.

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It is therefore critical that biosecurity agencies are able to perform core functions aimed at preventing and preparing for disease outbreaks. There should also be extensive participation in livestock biosecurity prevention and preparedness activities by both the private veterinary sector and livestock industries.

My recommendations reinforce the need for improved disease surveillance capacity and capability, as well as enhanced traceability of sheep and goats throughout the livestock chain. I also recommend that DEDJTR adopts more strategic and systematic approaches to a number of livestock biosecurity functions. Lastly, I recommend that a more collaborative approach be adopted to manage the significant biosecurity risks posed by illegal swill feeding of pigs. I am pleased that these recommendations have been accepted and plans have been put in place to implement them.

I would like to thank the staff of DEDJTR and DHHS for their assistance and cooperation throughout this audit.



John Doyle MBA FCPA

*Auditor-General*

August 2015

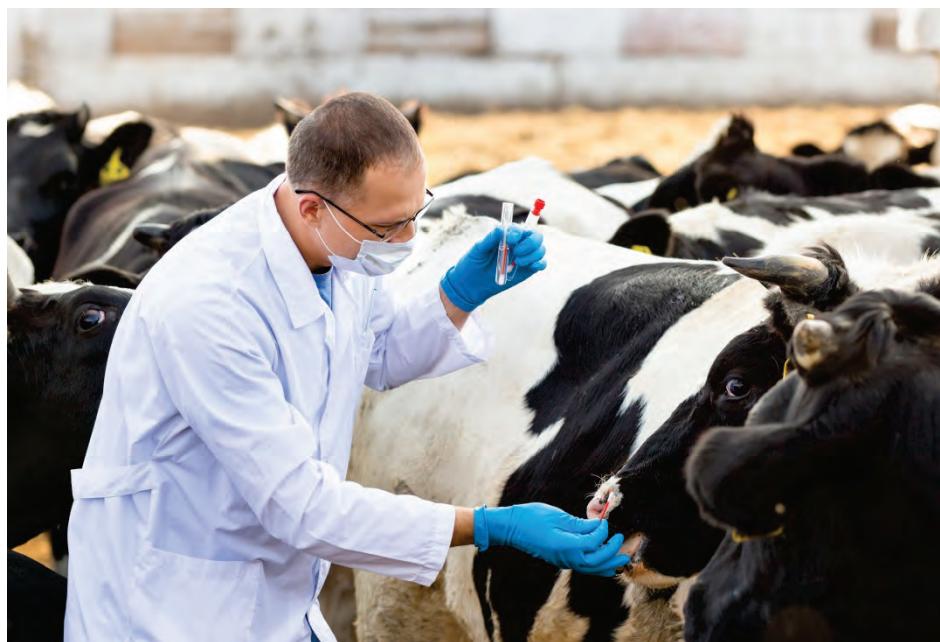
# Audit summary

The Intergovernmental Agreement on Biosecurity defines biosecurity as 'the management of risks to the economy, the environment, and the community, of pests and diseases entering, emerging, establishing or spreading'.

Victoria remains free of many pests and diseases. This has provided its agricultural industries with a significant competitive advantage and helped maintain access to premium export markets. According to the Australian Bureau of Statistics, Victoria's food and fibre exports totalled \$11.4 billion in 2013–14, while the gross value of agricultural commodities—including meat, milk derived products, eggs, hides, skins and animal fibre—was \$12.7 billion.

Biosecurity measures also provide significant public health benefits. This is because a number of animal diseases can be transmitted to humans. These are known as zoonotic diseases.

Despite Victoria's advantageous animal biosecurity status, exotic and other emergency animal diseases remain an ever-present threat to Victoria's livestock industries. The Australian Bureau of Agricultural and Resource Economics and Sciences estimates that the impact on Australia's economy of a large scale, multi-state outbreak of foot-and-mouth disease (FMD) would be \$52 billion over a 10-year period. Of all Australian states and territories, Victoria is considered most at risk of an FMD outbreak due to its temperate climate and intensive livestock production systems.



## Conclusions

The Department of Economic Development, Jobs, Transport & Resources' (DEDJTR) responses to recent livestock disease events—including a suspected case of FMD in 2015, a sporadic case of anthrax in 2015, and an outbreak of low pathogenic avian influenza in 2012—have been successful. Its responses were swift, comprehensive and effective in mitigating risks to primary production, human health and animal welfare.

However, these recent events have been small in scale and have not fully tested the capability and capacity of Victoria's livestock biosecurity system.

DEDJTR's capacity to effectively detect, prepare for and respond to an emergency livestock disease outbreak has been weakened by a decline in financial and staff resourcing for core biosecurity functions. This decline has resulted in a significant drop in surveillance coverage and the increased likelihood of a major disease outbreak going undetected until it has become established. This would increase the scale and complexity of an emergency response. The potentially severe economic and health impacts of such an outbreak in Victoria highlight the urgent need to address this risk.

To DEDJTR's credit, it has developed plans and commenced work within its own resourcing levels to enhance its livestock disease preparedness. However, these initiatives are incapable of restoring the diminished capacity of Victoria's livestock biosecurity system.

Ultimately, the success of any future response to concurrent small scale or medium to large scale outbreaks will depend heavily on input from other agencies, jurisdictions, organisations, private veterinary practitioners and Victoria's livestock industries, as well as reactive funding allocations from government.

## Findings

### Prevention and early detection

#### Risk management

DEDJTR's past approach to identifying and assessing livestock disease risks has often been informal and undocumented. This limits assurance that its resources and initiatives have been well targeted. It is now developing a tool to assess animal disease threats to Victoria which, once completed, will be used to prioritise future surveillance and preparedness activities. This tool may impact on future risk management at a business level and to a lesser extent may influence risk management at the state level.

## Surveillance

DEDJTR collects livestock disease data from a variety of sources, including its own staff, private veterinarians, farmers, laboratories, knackeries, saleyards and abattoirs. In particular, private veterinarians are central to the success of livestock disease surveillance programs, as they perform the majority of disease investigations in Victoria.

DEDJTR's livestock disease surveillance activities have decreased by 39 per cent since 2011–12 in line with a decline in staffing levels. Over the same period there has been a 7 per cent decline in surveillance investigations by private veterinary practitioners. This constrains the state's capacity to detect livestock diseases at an early stage.

DEDJTR's Significant Disease Investigation program encourages private veterinary practitioners to investigate and report unusual disease events by subsidising a portion of the investigation and laboratory costs. While the program plays an important role in maximising private veterinary participation, its effectiveness has been undermined by weaknesses in its coverage and uptake, as well as the time consuming nature of the investigation process. DEDJTR is taking action to address these issues through its \$4.7 million project, Improving Victoria's Preparedness for Foot and Mouth Disease, as well as the Systems for Enhanced Farm Services project.

In addition to routine disease investigations, DEDJTR also performs targeted surveillance through a range of state and national programs. However, the lack of a formal, documented approach to identifying, assessing and prioritising disease threats, limits DEDJTR's ability to demonstrate that these programs focus on the areas of greatest risk and need.

This information gap makes it difficult for DEDJTR to justify the absence of poultry from its targeted surveillance activities. While its surveillance in the wild bird population provides it with some information on risks to the poultry sector, DEDJTR currently does not have sufficient assurance that the industry-led disease surveillance of poultry is effective.

DEDJTR's livestock disease surveillance system is sophisticated and has contemporary functionality. However, the effectiveness of this system has been impaired by a decline in the number of disease surveillance investigations undertaken, and issues with data quality and timeliness.

## Preventing illegal swill feeding

One activity creating a particularly high risk for livestock health and primary production in Victoria is the illegal feeding of swill—food waste containing meat, imported dairy products and other mammalian products or by-products—to pigs. Feeding swill to pigs is illegal in Australia because it may contain exotic disease agents including but not limited to FMD. It presents the most likely opportunity for an FMD outbreak in Australia.

DEDJTR's past efforts to manage swill feeding risks included audits of approximately 600 food outlets in both 2009 and 2013. It has also provided information to raise awareness of swill feeding risks to food outlets and pig producers. DEDJTR is working to improve in this area by developing a dedicated communication strategy and action plan to better integrate its swill feeding activities and promote awareness of swill feeding issues among food outlets and small scale pig owners.

While this work is valuable, there remains a need for DEDJTR, the Department of Health and Human Services and local government to work together to establish a more effective method for monitoring the food disposal practices of food outlets. Specifically, environmental health officers—who are employed by local councils and regulate food outlets—are currently not required under legislation to monitor food disposal practices. DEDJTR has identified that expanding environmental health officers' powers to include the monitoring of outlets' food disposal practices would significantly improve regulatory oversight of illegal swill feeding.

## Preparedness to respond

### Response plans and procedures

DEDJTR currently has 180 standard operating procedures and 46 manuals of procedures covering a wide range of diseases and activities. Many of these procedures are to be used during emergency animal disease responses. These procedures are fragmented, difficult to follow and largely out of date. DEDJTR has recognised this issue and is working to update and streamline access to its manuals of procedures and standard operating procedures.

DEDJTR has undertaken detailed planning for FMD through its Improving Victoria's Preparedness for Foot and Mouth Disease project. This planning focus is beneficial and justified considering the significant risks FMD poses to Victoria's economy. Importantly, this project aims to yield benefits beyond FMD to Victoria's livestock biosecurity preparedness more broadly.

The delivery of this project fell behind schedule during 2013–14, with approximately \$1 million of the \$2.3 million annual project budget carried forward to 2014–15. Project delivery has improved since a dedicated project manager and project control board was established in mid-2014, however, the project was not fully delivered by 30 June 2015 as originally planned. In particular, one key project initiative—to develop a state response plan for an FMD outbreak—will not be finalised until mid-2016. DEDJTR advised that this is due to new requirements arising from Victoria's reformed emergency management arrangements.

## Response capability

DEDJTR has tested its preparedness and capability to respond to a major livestock disease through a wide range of emergency animal disease simulation exercises. Departmental reviews of these exercises found that they were effective in achieving their objectives. However, DEDJTR has not selected, planned for and delivered these exercises in a strategic manner. It is therefore unclear whether past exercises have combined to focus on the areas of greatest need.

DEDJTR has also provided and participated in a variety of other livestock biosecurity training programs. These programs have made a valuable contribution to disease preparedness among departmental staff and the private veterinary sector. Despite this, it is unclear whether the programs collectively have the coverage and content needed to provide staff and private veterinarians with sufficient technical skills to respond to an emergency animal disease outbreak.

DEDJTR's simulated and real life disease responses are routinely evaluated and key lessons learned have been captured in evaluation reports. Even so, DEDJTR has recognised the need for a more robust approach to evaluating these activities. It is now working to develop a biosecurity evidence framework to provide a consistent approach to measuring, evaluating and reporting performance against desired outcomes.

## Response capacity

Recurrent state funding for core livestock biosecurity activities reduced by 49 per cent between 2009–10 and 2014–15. The funding stream covers a range of critical functions that include, but are not limited to, veterinary services, surveillance and tracing livestock movements. This trend increases Victoria's reliance on reactive funding allocations to protect its livestock industries from emergency animal diseases. It represents a diminished return on investment for the state compared to preventative and preparatory activities.

Additionally, the total number of veterinary and animal health officer positions in DEDJTR has decreased by 42 per cent since 2010. DEDJTR's December 2014 Biosecurity Budget Strategy highlights the implications of its staff resourcing constraints. In its strategy DEDJTR reports that its existing veterinary and animal health staffing levels are insufficient to meet the World Organisation for Animal Health (OIE) expectation that a jurisdiction is able to manage one medium or two concurrent small animal disease outbreaks from within its own staff resources. While Victoria is not directly a member of the OIE, this is a useful benchmark for comparison.

## Response systems

DEDJTR has an adequate response information system in place with wide-ranging functionality. However, the effectiveness of this system is undermined by a decline in surveillance activity over time.

DEDJTR is taking a leading role to address known weaknesses in the national system for tracing sheep and goat movements during a major disease outbreak. This work could potentially lead to significant improvements in livestock disease prevention, preparedness and responses in Victoria and other jurisdictions.

## Stakeholder engagement

DEDJTR's engagement with government bodies involved in livestock biosecurity has been satisfactory and has occurred through:

- national biosecurity arrangements
- Victoria's Emergency Management Framework
- its memorandum of understanding with the Department of Health and Human Services for jointly managing the threat of zoonotic diseases

DEDJTR engages extensively with non-government stakeholders on livestock biosecurity matters. However, this engagement has not occurred in line with an overarching strategic approach. The needs of, and risks to, non-government stakeholder groups—including livestock industries and private veterinary practitioners—have not been systematically assessed. DEDJTR advised that it has commenced work on an overarching stakeholder engagement strategy to address this gap.

DEDJTR's newly developed risk-based approach for targeting livestock biosecurity compliance and enforcement activities is adequate, but yet to be implemented. The successful application of this new approach will be challenged by the growing demand for animal welfare investigations. Combined with a decline in staff resourcing, this growing demand places pressure on DEDJTR's capacity to perform other forms of animal health fieldwork.

## Livestock disease responses

The audit examined DEDJTR's responses to the following livestock disease incidents:

- low pathogenic avian influenza outbreak, 2012
- anthrax case, 2015
- suspected FMD incident, 2015.

While some areas for further improvement are identified, DEDJTR's responses to these small-scale and suspected outbreaks have been managed well overall. However, these incidents have been small in scale and have not tested the state's ability to respond to larger or more complex disease outbreaks. As a result the full capacity or capability of Victoria's livestock biosecurity system is unclear.

## Recommendations

Number	Recommendation	Page
1.	That the Department of Economic Development, Jobs, Transport & Resources improves disease surveillance by: <ul style="list-style-type: none"> <li>• focusing its targeted surveillance activities based on a systematic assessment of disease risks</li> <li>• increasing statewide participation in surveillance programs by private veterinary practitioners so that surveillance records more accurately reflect the geographic distribution of livestock species and numbers, as well as disease threats</li> <li>• establishing arrangements to gain assurance that the industry-led disease surveillance of poultry is effective</li> <li>• enhancing systems and processes to minimise errors in disease surveillance records and improve their timely completion.</li> </ul>	20
2.	That the Department of Economic Development, Jobs, Transport & Resources and the Department of Health and Human Services work together to determine and apply the most effective method for preventing the illegal swill feeding of pigs.	20
3.	That the Department of Economic Development, Jobs, Transport & Resources finalises plans to implement a new electronic traceability system for sheep and goats.	36
4.	That the Department of Economic Development, Jobs, Transport & Resources adopts a systematic approach to: <ul style="list-style-type: none"> <li>• reviewing and updating its documented livestock biosecurity procedures</li> <li>• selecting disease simulation exercises based on disease risks and the coverage, content and delivery of past exercises</li> <li>• evaluating the outcomes of simulated and actual disease responses as part of a continuous improvement program</li> <li>• assessing the coverage and content of its livestock biosecurity training programs for staff and private veterinary practitioners.</li> </ul>	36
5.	That the Department of Economic Development, Jobs, Transport & Resources develops an overarching strategic approach to engaging non-government stakeholders.	44

## Submissions and comments received

We have professionally engaged with the Department of Economic Development, Jobs, Transport & Resources and the Department of Health and Human Services throughout the course of the audit. In accordance with section 16(3) of the *Audit Act 1994* we provided a copy of this report to those agencies and requested their submissions or comments.

We have considered those views in reaching our audit conclusions and have represented them to the extent relevant and warranted. Their full section 16(3) submissions and comments are included in Appendix A.



# 1

# Background

## 1.1 Introduction

The Intergovernmental Agreement on Biosecurity defines biosecurity as 'the management of risks to the economy, the environment, and the community, of pests and diseases entering, emerging, establishing or spreading'.

Victoria remains free of many pests and diseases. This has provided its agricultural industries with a significant competitive advantage and helped maintain access to premium export markets. It also supports sustainable growth and increased employment in the livestock industry sector. According to the Australian Bureau of Statistics, Victoria's food and fibre exports totalled \$11.4 billion in 2013–14, while the gross value of agricultural commodities—including meat, milk derived products, eggs, hides, skins and animal fibre—was \$12.7 billion.

Biosecurity measures also provide significant public health benefits. This is because a number of animal diseases can be transmitted to humans. These are known as zoonotic diseases. People in close contact with high numbers of livestock animals, such as farmers, shearers and veterinarians, are at a higher risk of contracting a zoonotic disease that could then be transferred to the general population.

Despite Victoria's advantageous animal biosecurity status, exotic and other emergency animal diseases remain an ever-present threat to Victoria's livestock industries. The 2001 outbreak of foot-and-mouth disease (FMD) in the United Kingdom is estimated to have caused more than US\$12 billion in losses and the slaughter of more than six million sheep and cattle to eradicate the disease.

The Australian Bureau of Agricultural and Resource Economics and Sciences estimates that the impact on Australia's economy of a large scale, multi-state outbreak of FMD would be \$52 billion over a 10-year period. Of all Australian states and territories, Victoria is considered most at risk of an FMD outbreak due to its temperate climate and intensive livestock production systems.

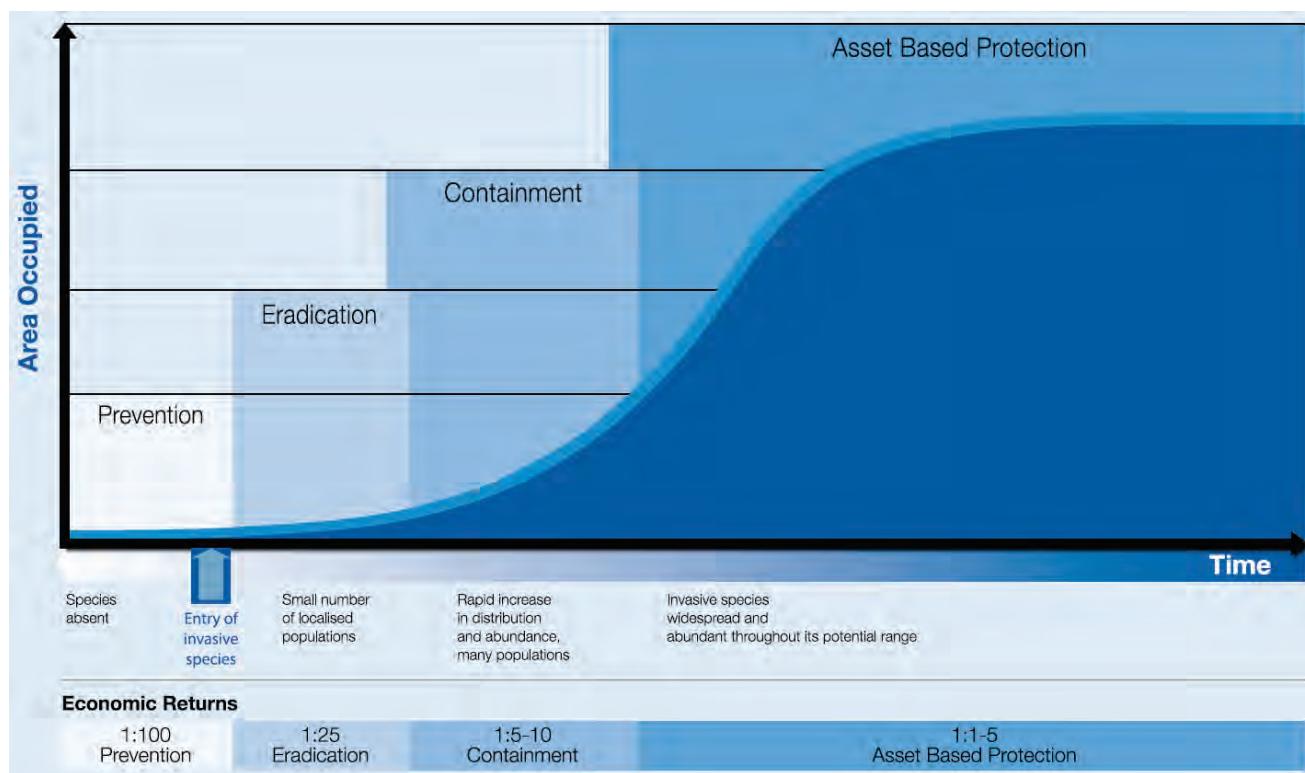
The Commonwealth Scientific and Industrial Research Organisation's (CSIRO) 2014 report *Australia's Biosecurity Future* flags a number of global trends and highlights the significant change and growing complexity of Australia's biosecurity challenges. These trends cover:

- agricultural expansion and intensification
- urbanisation and changing consumer expectations
- global trade and travel
- biodiversity pressures
- declining resources.

The CSIRO reports that these trends could lead to a future where existing biosecurity processes and practices are not sufficient. The report identifies 12 potential biosecurity 'megashocks' to illustrate the challenges that Australia may face in the future, such as a nationwide outbreak of FMD or an epidemic of a zoonotic disease.

The 2009 *Biosecurity Strategy for Victoria* used a generalised invasion curve to show the return on investment for different stages of disease control activity. This curve shows that the greatest return on investment is achieved by investing in prevention and early intervention.

**Figure 1A**  
**Generalised invasion curve showing actions appropriate to each stage**



Source: *Biosecurity Strategy for Victoria*, 2009.

There are many diseases that have the potential to impact Victoria's livestock industries, a number of which are transmittable to humans. Some of the better known livestock diseases are outlined in Figure 1B.

**Figure 1B**  
**High profile livestock diseases**

**Anthrax**

An acute infectious bacterial disease that can affect humans and a wide range of domestic and wild animals. It is caused by the bacterium *Bacillus anthracis*. Anthrax typically causes three types of infection affecting the lungs, the digestive tract, or the skin.

**Avian influenza**

A highly contagious viral infection, primarily in birds. Clinical signs range from not being apparent in waterfowl to a rapidly fatal condition characterised by gastrointestinal, respiratory and/or nervous signs in chickens and turkeys. Avian influenza has the capacity to infect humans. There are two types of the virus: highly pathogenic and low pathogenic.

**Equine influenza**

An acute, highly contagious viral disease that can cause rapidly spreading outbreaks of respiratory disease in horses. Other equine species are also susceptible. Australia and New Zealand are the only countries with significant equine industries that are free from equine influenza without vaccination.

**Foot-and-mouth disease**

An acute, highly contagious viral disease of domestic and wild cloven-hoofed animals. The disease is clinically characterised by the formation of vesicles and erosions in the mouth and nostrils, on the teats, and on the skin between and above the hoofs. FMD can cause serious production losses and is a major constraint to international trade in livestock and livestock products.

There have been no reported outbreaks of FMD in Australia since the 1870s.

Source: Victorian Auditor-General's Office based on *Australian Veterinary Emergency Plan* disease strategies.

## 1.2 Livestock biosecurity framework

Livestock biosecurity in Australia is jointly managed by Commonwealth, state and territory governments in partnership with industry and private veterinary practitioners.

### 1.2.1 Commonwealth framework

The Commonwealth Department of Agriculture manages quarantine controls at Australia's borders. It also provides import and export inspection and certification to help retain Australia's advantageous animal health status and wide access to overseas export markets.

Figure 1C outlines the key national instruments that have implications for state and territory government roles in relation to livestock biosecurity.

**Figure 1C  
National instruments for livestock biosecurity**

**Intergovernmental Agreement on Biosecurity**

The Commonwealth, state and territory governments—excluding Tasmania—entered into this agreement in January 2012. It aims to strengthen the working partnership between the Commonwealth, state and territory governments, and to improve the national biosecurity system by defining the roles and responsibilities of governments and outlining the priority areas for collaboration.

**Emergency Animal Disease Response Agreement (EADRA)**

The EADRA was signed in 2002 and brings together Commonwealth, state and territory governments and livestock industry groups to prepare for, and respond to, emergency animal disease outbreaks. Animal Health Australia is the custodian of the EADRA.

**Australian Veterinary Emergency Plan (AUSVETPLAN)**

AUSVETPLAN comprises a series of manuals setting out the roles, responsibilities and policy guidelines for agencies and organisations involved in responding to an emergency animal disease outbreak. AUSVETPLAN includes nationally agreed disease strategies and response policy briefs for all diseases listed in the EADRA.

Source: Victorian Auditor-General's Office.

## 1.2.2 Victorian framework

While the Commonwealth biosecurity framework focuses on quarantine control at borders and on import and export inspection and certification, state and territory governments are responsible for preventing the establishment of livestock diseases and responding to outbreaks within their own borders.

The Victorian livestock biosecurity system comprises producers, processors, saleyards, stock agents, transporters, veterinary practitioners, veterinary laboratories and government agencies.

### Key agency roles

The Department of Economic Development, Jobs, Transport & Resources (DEDJTR) is responsible for developing policy, standards, delivery systems and services aimed at protecting animals from pests and diseases, protecting the welfare of animals and preserving market access for Victoria's livestock industries.

DEDJTR works closely with other Australian, state and territory government agencies to support their detection and management of outbreaks of pests and diseases, and to support verification and certification activities for agriculture and food products.

The Department of Health and Human Services (DHHS) is responsible for managing zoonotic threats from a human health perspective. This includes responding to and controlling zoonotic disease outbreaks. DEDJTR also has a role in protecting public health through controlling zoonotic diseases.

DEDJTR and DHHS collaborate in planning, surveilling, managing, responding to and controlling zoonotic diseases. This is managed through a 2010 memorandum of understanding between the former departments of Health and Primary Industries.

### **Private veterinary practitioners**

Private veterinary practitioners perform the majority of the disease investigations in Victoria. Their regular contact with industry and feedback to DEDJTR makes them a critical part of livestock disease surveillance and preparedness in Victoria.

Veterinary practitioners are registered by the Veterinary Practitioners Registration Board of Victoria. Registered practitioners must be able to diagnose animal diseases including those that are economically important and/or zoonotic. Practitioners are required to promptly report potential cases of exotic and other emergency livestock diseases to DEDJTR.

### **Livestock industries**

DEDJTR works with a range of stakeholder groups to protect and enhance Victoria's livestock industries. This occurs through a number of industry consultative committees that deal with disease control, welfare standards, livestock traceability and emergency animal disease preparedness.

DEDJTR also interacts with individual livestock producers, stock agents, saleyard managers and livestock transporters to educate, monitor and enforce activities in line with agreed livestock health and welfare standards.

### **Legislation**

The *Livestock Disease Control Act 1994* is the key act governing livestock biosecurity in Victoria. The Act provides the legislative framework for the prevention, monitoring and control of livestock diseases and is designed to protect domestic and export markets and public health. A key function of this Act is to provide powers and mechanisms to combat exotic disease outbreaks. It also covers compensation, licences and registrations, and enforcement.

Other relevant acts include the:

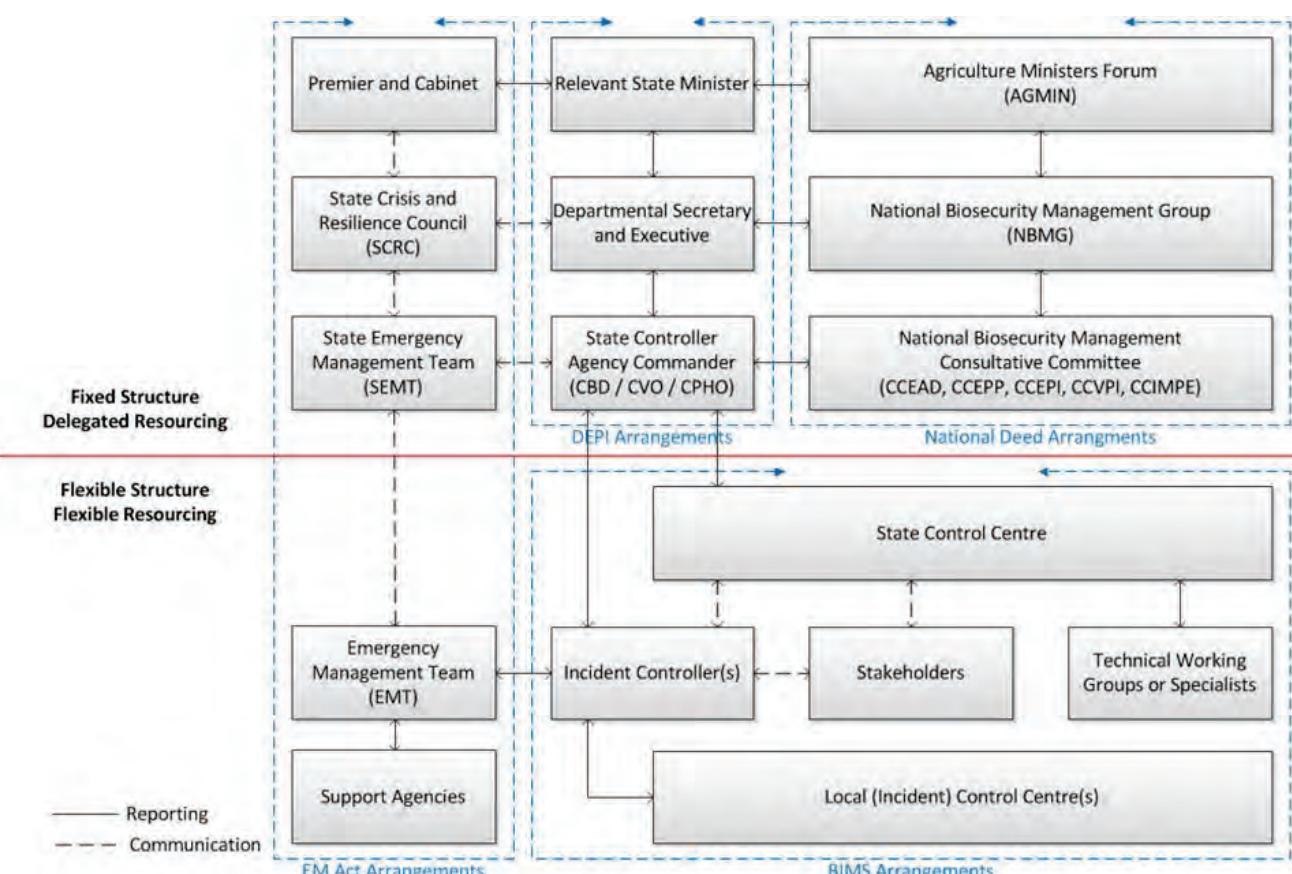
- *Livestock Management Act 2010*
- *Stock (Seller Liability and Declaration) Act 1993*
- *Impounding of Livestock Act 1994*
- *Prevention of Cruelty to Animals Act 1986*
- *Emergency Management Act 1986* and *Emergency Management Act 2013*
- *Public Health and Wellbeing Act 2008* and *Public Health and Wellbeing Regulations 2009*.

### 1.2.3 Emergency management governance arrangements

Responses to livestock disease outbreaks fall within the Victorian Emergency Management Framework, which is coordinated by Emergency Management Victoria (EMV). EMV maintains the *Emergency Management Manual Victoria*, which outlines the different roles agencies have during emergency incidents. The manual appoints DEDJTR's Chief Biosecurity Director as the state controller for livestock disease outbreaks and the Chief Veterinary Officer as the deputy state controller. This arrangement is currently under review by DEDJTR.

The governance arrangements supporting an emergency animal disease outbreak in Victoria are complex and involve input from Commonwealth and state governments, as well as livestock industry stakeholders. This is illustrated in Figure 1D.

**Figure 1D**  
**Commonwealth and Victorian emergency management arrangements**



*Note:* Fixed Structure Delegated Resourcing—the components of an emergency response with a predefined structure and resourcing model.

Flexible Structure Flexible Resourcing—the structure and resourcing of these components varies depending on the response.

BIMS—Biosecurity Incident Management System.

DEPI—the former Department of Environment and Primary Industries, whose biosecurity functions are now performed by DEDJTR.

Source: Department of Economic Development, Jobs, Transport and Resources.

## 1.3 Livestock welfare

The World Organisation for Animal Health defines animal welfare as how an animal is coping with the conditions in which it lives, both physically and emotionally.

Livestock welfare is an area of increasing public concern. There is a growing community expectation that livestock industries will treat their animals humanely, while market access is becoming more contingent on demonstrating that sound animal welfare practices are in place.

Livestock welfare is also a key consideration when responding to a disease outbreak. For example, it is widely expected that any culling of animals undertaken to prevent a livestock disease from spreading will be performed in a humane manner.

Rising animal welfare concerns have led to changing practices in the management of livestock. This includes large numbers of poultry and egg layers being reared under free range systems, which can pose increased biosecurity risks by exposing animals to wild birds carrying diseases. Retail sales of free range eggs have doubled since 2000 and a quarter of eggs produced in Australia are now free range.



In Victoria, livestock producers are responsible for the health and welfare of livestock and must comply with the *Prevention of Cruelty to Animals Act 1986*, which is administered by DEDJTR. The Act aims to prevent animal cruelty, encourage the considerate treatment of animals and raise community awareness about preventing animal cruelty.

## 1.4 Audit objective and scope

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The audit objective was to assess the effectiveness of Victorian biosecurity practices that relate to livestock disease management and the associated risks to primary production, animal welfare and human health.

To address this objective, the audit assessed DEDJTR's and DHHS's:

- activities to prevent the establishment of livestock diseases, including those that are zoonotic
- arrangements for responding to a serious livestock disease outbreak.

The audit focused on exotic livestock diseases, as well as other emergency animal diseases, such as anthrax.

## 1.5 Audit method and cost

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The audit examined livestock biosecurity measures through document reviews and interviews with DEDJTR and DHHS.

The audit was conducted under section 15 of the *Audit Act 1994*, and was performed in accordance with the Australian Auditing and Assurance Standards. Pursuant to section 20(3) of the *Audit Act 1994*, unless otherwise indicated any persons named in this report are not the subject of adverse comment or opinion.

Total cost of the audit was \$455 000.

## 1.6 Structure of the report

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The report is structured as follows:

- Part 2 examines the prevention and early detection of livestock biosecurity threats
  - Part 3 examines preparedness to respond to a livestock disease outbreak
  - Part 4 examines stakeholder engagement.
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# 2

# Prevention and early detection

## At a glance

### Background

Preventing and swiftly detecting livestock disease outbreaks is critical to maintaining Victoria's advantageous animal health status and the economic benefits it provides.

### Conclusion

A decrease in suitable staff and financial resourcing has increased the Department of Economic Development, Jobs, Transport & Resources' (DEDJTR) reliance on Victoria's network of private veterinary practitioners to identify livestock disease threats. However, the rate of private veterinary participation in surveillance has also decreased. This has impaired Victoria's capacity to detect an emergency livestock disease before it becomes widespread.

### Findings

- DEDJTR lacks a systematic approach to its disease-level risk management but is working to address this gap.
- Since 2011–12 DEDJTR's livestock disease surveillance activities have decreased by 39 per cent. Over the same period there has also been a 7 per cent decline in surveillance investigations by private veterinary practitioners.
- Surveillance systems are adequate but undermined by the above weaknesses and issues with data quality and timeliness.
- DEDJTR has a particular focus on preventing illegal swill feeding of pigs but requires support from the Department of Health and Human Services to be fully effective in this area.

### Recommendations

- That DEDJTR improves disease surveillance systems, processes and participation.
- That DEDJTR and the Department of Health and Human Services work together to determine and apply the most effective method for preventing the illegal swill feeding of pigs.

## 2.1 Introduction

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Preventing and swiftly detecting livestock disease outbreaks is critical to maintaining Victoria's advantageous animal health status and the economic benefits it provides.

Success in this area relies on:

- a robust, systematic approach to identifying, assessing and prioritising disease threats, and using this to inform decision-making
- a comprehensive passive disease surveillance network that utilises the expertise of private veterinary practitioners to provide timely detection and reporting of disease threats and outbreaks
- targeted surveillance programs that support passive surveillance activities by focusing on high-risk areas
- contemporary systems to record and analyse disease surveillance information.



## 2.2 Conclusion

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A decrease in suitable staff and financial resourcing has increased the Department of Economic Development, Jobs, Transport & Resources' (DEDJTR) reliance on Victoria's network of private veterinary practitioners to identify livestock disease threats. However, the rate of private veterinary participation has also decreased. This has impaired Victoria's capacity to detect an emergency livestock disease before it becomes widespread.

DEDJTR's recent work to enhance its surveillance systems, improve non-government participation in surveillance programs and address the significant risks posed by the illegal swill feeding of pigs is encouraging. DEDJTR is also working to develop a disease risk assessment tool that aims to improve the effectiveness and transparency of its decision-making. However, these initiatives are incapable of fully restoring the diminished capacity of Victoria's livestock disease surveillance system.

This situation needs urgent attention to ensure protection of Victoria's advantageous animal health status, the considerable economic benefits it provides, and the health of Victorians.

## 2.3 Risk management

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Livestock diseases pose significant risks to Victoria's economy. For example, the Australian Bureau of Agricultural and Resource Economics and Sciences estimated that the economic impact of a large-scale foot-and-mouth disease (FMD) outbreak in Australia would be \$52 billion over a 10-year period. With limited resourcing available and numerous emergency animal disease threats, a robust and systematic risk management approach is essential.

We have examined risk management for livestock biosecurity at the following levels:

- disease level
- business level
- state level.

DEDJTR is now working to apply a systematic approach to its disease-level risk management. This may impact on future risk management at a business level and to a lesser extent may influence risk management at the state level.

### 2.3.1 Disease-level risk management

DEDJTR's past approach to identifying and assessing livestock disease risks has often been informal and undocumented. This limits assurance that its resources and initiatives have been well targeted.

This issue was also identified in the former Department of Environment and Primary Industries' (DEPI) 2014 review of its animal health service, which acknowledged that 'formal, documented risk assessment does not underpin planning or decision-making' with respect to animal health risks. The review found that there was also insufficient risk assessment capability within the department's animal health service.

DEDJTR is now developing a tool to assess animal disease threats to Victoria. Once completed, this tool will be used to prioritise future surveillance and preparedness activities. Figure 2A outlines DEDJTR's approach to developing this tool, which was due for completion by 30 June 2015.

**Figure 2A**  
**Development of DEDJTR's animal disease risk assessment tool**

Stage	Task	Status
Stage 1	Review current literature on animal disease risk assessment methods using sources within and outside of DEDJTR.	Complete
Stage 2	List disease threats and develop a test panel of 10 diseases to validate the risk assessment process.	Complete
Stage 3	Develop the risk assessment process, tools and metrics and test these using the test panel diseases.	Not yet completed
Stage 4	Assess high priority animal disease threats.	Not yet completed
Stage 5	Develop an implementation plan to assess the remaining listed animal disease threats.	Not yet completed

Note: This Figure reports progress as at 15 July 2015.

Source: Victorian Auditor-General's Office.

While this project has the potential to address weaknesses in DEDJTR's identification and prioritisation of livestock disease threats, DEDJTR needs to support this work by:

- regularly reviewing and updating both the risk assessment process and its results
- consulting with relevant stakeholders on the risk assessment process and results, including by working with the Department of Health and Human Services (DHHS) to ensure that risks to human health posed by livestock diseases are sufficiently integrated into the tool.

Part of DEDJTR's disease-level risk management is its newly developed risk-based approach to monitoring and enforcing compliance with legislation, including the *Livestock Disease Control Act 1994*. This approach, developed in 2014, is yet to be adopted. DEDJTR intends to use it to better align risks with its compliance responses. Part 4 of this report provides further detail on DEDJTR's compliance and enforcement activities.

### 2.3.2 Business-level risk management

Prior to machinery-of-government changes in late 2014, the former DEPI had included the outbreak of a major livestock disease in its strategic risk register. The former DEPI's Biosecurity Division supplemented this with an operational risk register that identified and assessed 11 operational risks relating to livestock biosecurity. These risks covered, among other things, ineffective surveillance systems, a lack of staff accountability, inadequate approaches to animal welfare and poor compliance and enforcement. Since the Biosecurity Division was moved into DEDJTR in late 2014, it has continued to apply the same approach to its business-level risk management for livestock biosecurity.

The division's operational risk management had:

- assessed the likelihood and consequence of operational risks
- identified controls for each risk that were regularly monitored by the division
- regularly reviewed the division's risk profile through divisional meetings and risk workshops.

While DEDJTR's business-level risk management is not disease-specific, its planned systematic assessments of individual disease threats may impact on how livestock biosecurity risks are reflected in strategic and operational risk registers.

DEDJTR could further improve its business-level risk management by formally defining a tolerance level for each of its operational risks, particularly given that it would be unrealistic to have the funds and staff to comprehensively deal with all potential livestock biosecurity risks.

### 2.3.3 State-level risk management

State-level risk management for livestock biosecurity occurs primarily through the Victorian emergency management system coordinated by Emergency Management Victoria (EMV). The EMV published the *Emergency Risks in Victoria* report in 2014 that documents the results of a 2012–13 state-level risk assessment. This report identified an emergency animal disease outbreak as a serious risk to the economy, public health and the environment. DEDJTR actively contributes to identifying and assessing risks at the state level through its membership of the State Crisis and Resilience Council and the State Emergency Management Team.

DEDJTR's planned improvements to its disease-level risk management are unlikely to have a significant impact on how livestock biosecurity risks are broadly identified and assessed in the *Emergency Risks in Victoria* report.

## 2.4 Disease surveillance

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Livestock disease surveillance plays a critical role in:

- demonstrating the absence or occurrence and distribution of infection
- detecting exotic or emerging diseases as early as possible
- monitoring disease trends
- facilitating disease management
- supporting claims for freedom from a disease
- providing data for use in biosecurity risk analysis and decision-making.

DEDJTR collects livestock disease data from a variety of sources, including its own staff, private veterinarians, farmers, laboratories, knackeries, saleyards and abattoirs. In particular, private veterinarians are central to the success of livestock disease surveillance programs as they perform the majority of disease investigations in Victoria.

Livestock disease surveillance programs take one of two forms:

- **Passive surveillance** involves the routine reporting of livestock disease events to DEDJTR. It is underpinned by disease notifications mandated by the *Livestock Disease Control Act 1994*.
- **Targeted surveillance** focuses on specific species, diseases and/or locations within the livestock supply chain.

## 2.4.1 Surveillance trends

Figure 2B shows the total number of livestock disease investigations performed under each surveillance program between 2011–12 and 2014–15. It also shows the number of these investigations undertaken by DEDJTR and private veterinary practitioners.

**Figure 2B**  
**Livestock disease surveillance investigations 2011–12 to 2014–15**

Surveillance program	Type	2011–12	2012–13	2013–14	2014–15
Disease investigations <sup>(a)</sup>	Passive	2 166	1 971	1 901	1 815
Anthrax surveillance	Targeted	9	67	63	18
Early Detection of Emerging or Exotic Disease in Sheep and Goats	Targeted	197	184	176	144
Knackery Surveillance Project (Cattle)	Targeted	325	315	308	243
Lamb and Kid Mortality Surveillance Project	Targeted	188	91	96	87
Victorian Pig Health Monitoring Scheme	Targeted	40	81	22	1
<b>Total investigations</b>		<b>2 925</b>	<b>2 709</b>	<b>2 566</b>	<b>2 308</b>
Private veterinarian subtotal		1 634	1 728	1 609	1 522
Departmental subtotal		1 291	981	957	786

(a) Includes the Significant Disease Investigation program and all disease and clinical case investigations undertaken on farms.

Source: Victorian Auditor-General's Office based on data from DEDJTR.

Importantly, between 2011–12 and 2014–15:

- the total number of surveillance investigations performed by DEDJTR decreased by 39 per cent
- the total number of surveillance investigations performed by private veterinary practitioners decreased by 7 per cent
- the proportion of investigations performed by private veterinary practitioners increased from 56 per cent to 66 per cent
- the total number of investigations performed by both private veterinary practitioners and the department decreased by 21 per cent.

These trends reflect a decline in departmental staff resourcing to perform animal health fieldwork. Specifically, the total number of veterinary and animal health staff within DEDJTR decreased by 42 per cent between 2010 and 2015. The impacts of DEDJTR's resourcing constraints are discussed further in Part 3.

Ultimately, DEDJTR's surveillance coverage and capacity to detect an emergency animal disease before it becomes widespread has been weakened, with no corresponding increase in private veterinary surveillance activity to offset this gap.

## 2.4.2 Maximising participation in surveillance

DEDJTR's Significant Disease Investigation (SDI) program is an important driver for maximising participation in livestock disease surveillance by private veterinary practitioners and livestock producers. The SDI program encourages private veterinary practitioners to investigate and report unusual disease events by subsidising part of the investigation and laboratory costs. In relation to cattle, sheep, goats and pigs the SDI program also provides subsidies to livestock producers for engaging a private veterinary practitioner to investigate these events. Where there is genuine suspicion of an exotic or emergency animal disease, DEDJTR leads and pays for the investigation.

Figure 2C details the number of SDIs performed between 2009–10 and 2013–14.

**Figure 2C**  
**Number of significant disease investigations, 2009–10 to 2013–14**

Species	2009–10	2010–11	2011–12	2012–13	2013–14
Cattle	67	197	240	211	209
Sheep	9	118	100	124	82
Horse	5	278	25	4	4
Bird	1	7	13	12	17
Goat	2	15	11	5	8
Camel	—	1	1	6	1
Pig	—	1	4	1	3
Wildlife	1	—	1	—	3
Rabbit	—	2	2	—	—
Mixed	—	—	1	1	1
<b>Total</b>	<b>85</b>	<b>619</b>	<b>398</b>	<b>364</b>	<b>328</b>

Source: Victorian Auditor-General's Office based on data from DEDJTR.

The former DEPI completed a review of the SDI program in September 2014. The review found that 359 private veterinary practitioners across 146 practices had participated in the program during the review period, leading to a total of 1 794 investigations being recorded. However, the review identified a number of weaknesses in the program's coverage and uptake, as well as the time consuming nature of the investigation process. These included:

- only 12 veterinary practices accounted for over 50 per cent of investigations
- poor program uptake in Gippsland and north west Victoria
- a lack of frequent users of the program
- pigs and poultry were poorly represented in the program
- the process for approving, undertaking and reporting an SDI is time consuming and involves an excessive amount of paperwork
- the majority of completed disease investigations were not recorded on time.

The review made recommendations to streamline the SDI program's process and improve program awareness and uptake among private veterinarians and livestock producers. DEDJTR is now working to address these recommendations through its \$4.7 million project, Improving Victoria's Preparedness for Foot and Mouth Disease, as well as the Systems for Enhanced Farm Services project. This includes initiatives to:

- develop a website for private veterinarians to report significant disease events and access surveillance data
- provide animal health staff with mobile access to surveillance systems and records
- survey private veterinarians and industry stakeholders on their surveillance needs
- conduct weekend workshops for private veterinarians to assist their detection and response to emergency animal diseases
- continue providing subsidies to private veterinarians and livestock producers for disease investigations under the SDI program.

The decline in departmental surveillance coverage and capacity significantly increases the importance of these initiatives.

**Figure 2D**  
**Case study—anthrax in 2015**

In February 2015 DEDJTR was notified of a case of anthrax in a dairy cow in the Tatura area of the Goulburn Valley following an initial disease investigation by a private veterinary practitioner. Once the diagnosis was confirmed, DEDJTR immediately initiated a disease response. DEDJTR placed quarantine restrictions on the farm with livestock movements being prohibited, and the farm was decontaminated. The carcass of the dead animal was destroyed and compulsory vaccination was implemented on the farm with the disease and adjacent properties. There were no further cases of the disease.

DEDJTR's review of the response found that it was effective in controlling the disease and preventing further cases. It acknowledged that it has been very difficult to determine contributing factors for anthrax outbreaks and recommended annual vaccination to be implemented in the herd in which this anthrax case arose to prevent potential future outbreaks.

In managing this isolated case, DEDJTR undertook prompt actions, and effectively controlled the disease, preventing its spread.

*Source: Victorian Auditor-General's Office.*

### 2.4.3 Targeting surveillance activities

In addition to the targeted surveillance programs listed in Figure 2B, DEDJTR also performs targeted surveillance through national programs, including:

- the Transmissible Spongiform Encephalopathy Freedom Assurance Program
- the National Arbovirus Monitoring Program
- the National Sheep Health Monitoring Project
- animal product residue monitoring.

DEDJTR advises that these state and national programs are targeted based on national biosecurity requirements and export market access requirements. However, the lack of a formal, documented approach to identifying, assessing and prioritising disease threats, limits DEDJTR's ability to demonstrate that these programs focus on the areas of greatest risk and need. DEDJTR's current work to develop a tool to assess and prioritise animal disease threats provides an ideal framework to address this issue.

This information gap makes it difficult to justify the absence of poultry from targeted surveillance programs. DEDJTR advised that targeted surveillance in the poultry industry would not be as effective as that for pastoral livestock due to the nature of poultry diseases, which are heavily influenced by the wild bird population. It also advised that the self-regulated nature of the poultry industry means that it is able to perform its own surveillance. However, the results of this industry-led surveillance are not shared with DEDJTR for commercial reasons.

DEDJTR advised that it has employed a poultry specialist to manage the risks posed by not undertaking targeted surveillance within the poultry industry. In addition, DEDJTR's surveillance in the wild bird population provides it with some information on risks to the poultry sector. Despite this, DEDJTR still lacks assurance that the poultry industry is adequately monitoring disease threats.

#### 2.4.4 Surveillance systems

The 'MAX!' epidemiology system is DEDJTR's central repository for animal health surveillance data. It was launched in 2009 and contains over 10 000 recorded disease events in Victorian livestock.

The system itself is sophisticated and has contemporary functionality. It allows recording of a wide range of important investigative information, including staff attending, location, details on the animals being investigated, clinical signs, lesions found, samples taken, preliminary and final diagnoses, source of the outbreak, and treatments administered. The system also has flexible query building functionality that allows searching of disease events using various criteria. Data from the system can be exported into spatial maps, graphs and other tabulated formats.

While DEDJTR's surveillance system is adequate overall, its effectiveness has been undermined by:

- a decline in the coverage and capacity of DEDJTR's livestock surveillance network
- weaknesses in the length of time taken to complete the SDI process.
- data quality issues—DEDJTR estimated in July 2014 that over 70 per cent of surveillance records contain mistakes due to either human error or incomplete data, which are routinely rectified by DEDJTR staff.

DEDJTR's improvement initiatives listed in Section 2.4.2 show that it is working to address the latter two issues.

## 2.4.5 Reporting surveillance

DEDJTR reports the livestock disease surveillance data it collects through the:

- annual publication *Animal Health in Victoria*
- monthly newsletter for DEDJTR animal health staff, *Eyes Wide Open*.
- monthly online newsletter for private veterinarians, *VetWatch*.

These reports combine to provide DEDJTR animal health staff, private veterinarians and the livestock industry with relevant information relating to livestock health issues in Victoria and in other jurisdictions.

Access to surveillance records for livestock producers and private veterinarians is expected to improve through the Improving Victoria's Preparedness for Foot and Mouth Disease project.

## 2.5 Preventing illegal swill feeding

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One activity creating a particularly high risk for livestock health and primary production in Victoria is the illegal feeding of swill—food waste containing meat, imported dairy products and other mammalian products or by-products—to pigs.

Feeding swill to pigs is illegal in Australia because it may contain exotic disease agents including but not limited to FMD. This practice is believed to have caused FMD outbreaks overseas—including the 2001 outbreak in the United Kingdom—and provides the most likely opportunity for an FMD outbreak in Australia.

The growth in small scale pig ownership has increased the risks associated with illegal swill feeding. Unlike registered food outlets and piggeries, this group is a difficult demographic for DEDJTR to identify, monitor and engage with.



DEDJTR has made several efforts in the past to manage swill feeding risks:

- Audits of food outlets were done during 2009 and 2013 to identify those supplying swill to pig producers. The 2013 audit of 613 food outlets identified 71 pig owners that had received food waste from the outlets. Of these, five owners were found to be feeding illegal swill and DEDJTR sought prosecution against these people. An additional seven owners were found to have previously fed illegal swill to their pigs but had since stopped. Warning letters were issued to pig owners and food outlets where the supply and feeding of illegal swill may have occurred but could not be proven.
- Targeted audits of approximately 10 high-risk piggeries are done each year.
- Information to raise awareness of swill feeding risks has been provided to food outlets and pig producers. This has included, but is not limited to, fact sheets, seminars at regional field days and engaging with pig farmers through stakeholder groups.

In early 2015 DEDJTR formed a working group to better integrate and prioritise its work in this area. This includes developing a:

- 'prohibited food waste and pigs' communication and engagement strategy that aims to:
  - link up actions across government, industry and DEDJTR
  - work with food outlets to stop the provision of food waste to pig owners
  - promote measures to identify and track small scale pig owners
  - reinforce key messages to the commercial pig industry and registered pig owners
- separate communications plan to promote swill feeding awareness among two high risk groups—food outlets and small scale owners.

This recent work is a positive development, however, DEDJTR, DHHS and local government need to improve cooperation in relation to swill-feeding risk management. Environmental health officers—who are employed by local councils and regulate food outlets—are currently not required under legislation to monitor food disposal practices. DEDJTR has identified that expanding environmental health officers' powers to include the monitoring of outlets' food disposal practices would significantly improve regulatory oversight of illegal swill feeding. Such a change would require changes to the *Food Act 1984*, which is administered by DHHS.

## **Recommendations**

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1. That the Department of Economic Development, Jobs, Transport & Resources improves disease surveillance by:
    - focusing its targeted surveillance activities based on a systematic assessment of disease risks
    - increasing statewide participation in surveillance programs by private veterinary practitioners so that surveillance records more accurately reflect the geographic distribution of livestock species and numbers, as well as disease threats
    - establishing arrangements to gain assurance that the industry-led disease surveillance of poultry is effective
    - enhancing systems and processes to minimise errors in disease surveillance records and improve their timely completion.
  2. That the Department of Economic Development, Jobs, Transport & Resources and the Department of Health and Human Services work together to determine and apply the most effective method for preventing the illegal swill feeding of pigs.
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# 3

# Preparedness to respond

## At a glance

### Background

The outcome of any emergency livestock disease response is heavily influenced by the responsible agency's level of preparedness.

### Conclusion

The Department of Economic Development, Jobs, Transport & Resources' (DEDJTR) capacity to prevent, prepare for and respond to an emergency livestock disease outbreak has been weakened by a decline in financial and staff resourcing. This increases the risk of the detection of an emergency livestock disease being delayed and impedes DEDJTR's ability to promptly respond to and control the spread of a disease.

### Findings

- DEDJTR's livestock biosecurity procedures are neither current nor sufficiently accessible, but it is working to address this gap.
- DEDJTR's focus on dedicated planning for foot-and-mouth disease preparedness is positive and is expected to provide broader benefits to livestock biosecurity.
- DEDJTR has undertaken a range of training programs, simulations and evaluations that have helped to support disease preparedness.
- There has been a decline in financial and staff resourcing for core livestock biosecurity activities such as veterinary services, surveillance and tracing.
- DEDJTR has an adequate response information system in place with wide-ranging functionality.

### Recommendations

That DEDJTR:

- finalises plans to implement a new electronic traceability system for sheep and goats
- adopts a systematic approach to reviewing its procedures, selecting simulation exercises, evaluating responses and assessing the coverage of its training programs.

## 3.1 Introduction

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The outcome of any emergency livestock disease response is heavily influenced by the control agency's level of preparedness. Being well prepared requires:

- effective livestock biosecurity plans and procedures that focus on high-risk areas
- sufficient capability and capacity to effectively prepare for and respond to livestock disease outbreaks
- contemporary disease response information systems with wide-ranging functionality, including the capability to track livestock and deploy resources.

This part examines the Department of Economic Development, Jobs, Transport & Resources' (DEDJTR) preparedness to respond to an emergency livestock disease outbreak.

## 3.2 Conclusion

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DEDJTR's preparedness to respond to an emergency livestock disease outbreak has been supported by a wide range of training programs and simulation exercises. It is also supported by an adequate response information system that has wide-ranging functionality. DEDJTR is working to further improve in this area through its \$4.7 million project, Improving Victoria's Preparedness for Foot and Mouth Disease, as well as planned revisions to its documented procedures. The success of these initiatives will depend on their effective implementation.

However, DEDJTR's disease preparedness has been weakened by a decline in financial and staff resourcing for core functions such as veterinary services, surveillance and livestock traceability. This trend increases the risk of an outbreak of an emergency livestock disease going undetected until it is widespread. It also increases DEDJTR's reliance on reactive funding allocations from government in the event of an outbreak. This is a less effective and efficient means of protecting Victoria's primary industries compared to resourcing preventative and preparatory measures.

Ultimately, the success of any future response to a medium to large scale outbreak will depend more heavily on input from other agencies, jurisdictions, private veterinary practitioners and Victoria's livestock industries.

## 3.3 Response planning

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Until recently, DEDJTR's numerous response-related procedures have been fragmented, difficult to follow and largely out of date. DEDJTR has recognised this issue and is working to update and streamline its procedures.

DEDJTR's focus on dedicated planning for foot-and-mouth disease (FMD) preparedness is positive as it aims to improve livestock biosecurity preparedness more broadly. The project fell behind schedule during 2013–14, however, improvements in DEDJTR's project management arrangements have increased its rate of delivery during 2014–15. It is important that DEDJTR completes this project as a priority.

### 3.3.1 Livestock biosecurity procedures

DEDJTR currently has 180 standard operating procedures (SoPs) and 46 manuals of procedures (MoPs) covering a wide range of diseases and activities. Many of these procedures are to be used during emergency animal disease responses.

DEDJTR's review of its seizure of livestock in response to animal welfare issues in Gippsland during 2014 highlighted some key weaknesses in the way MoPs and SoPs have been managed. These included:

- procedures were fragmented and difficult to follow
- some procedures had been amended and released as working drafts during 2013 but had not been finalised
- procedures were difficult to find and often confused with previous versions that had not been removed from DEDJTR's information systems
- animal health staff were not made sufficiently aware of changes to procedures.

Additionally, in 2015 DEDJTR reviewed its MoPs and SoPs and found that:

- 46 per cent of MoPs had not been reviewed in the past two years
- 90 per cent of SoPs had not been reviewed in the past two years
- 51 per cent of SoPs had not been reviewed in the past four years.

The 2015 review acknowledged the need to improve DEDJTR's management of procedures and make it easier for staff to find relevant procedures. To achieve this DEDJTR has committed to streamline its MoPs and SoPs by the end of 2015.

Figure 3A shows how DEDJTR's animal health procedures will be structured once this work is complete.

**Figure 3A**  
**Planned changes to DEDJTR's livestock biosecurity procedures**

Existing procedures	Revised procedures
46 MoPs	<ul style="list-style-type: none"> <li>• 7 MoPs—to be reframed as policy statements about DEDJTR's role and performance standards.</li> </ul>
180 SoPs	<ul style="list-style-type: none"> <li>• 26 SoPs.</li> <li>• A series of disease notes and technical notes that provide advice to animal health staff when conducting their work.</li> </ul>

Source: Victorian Auditor-General's Office.

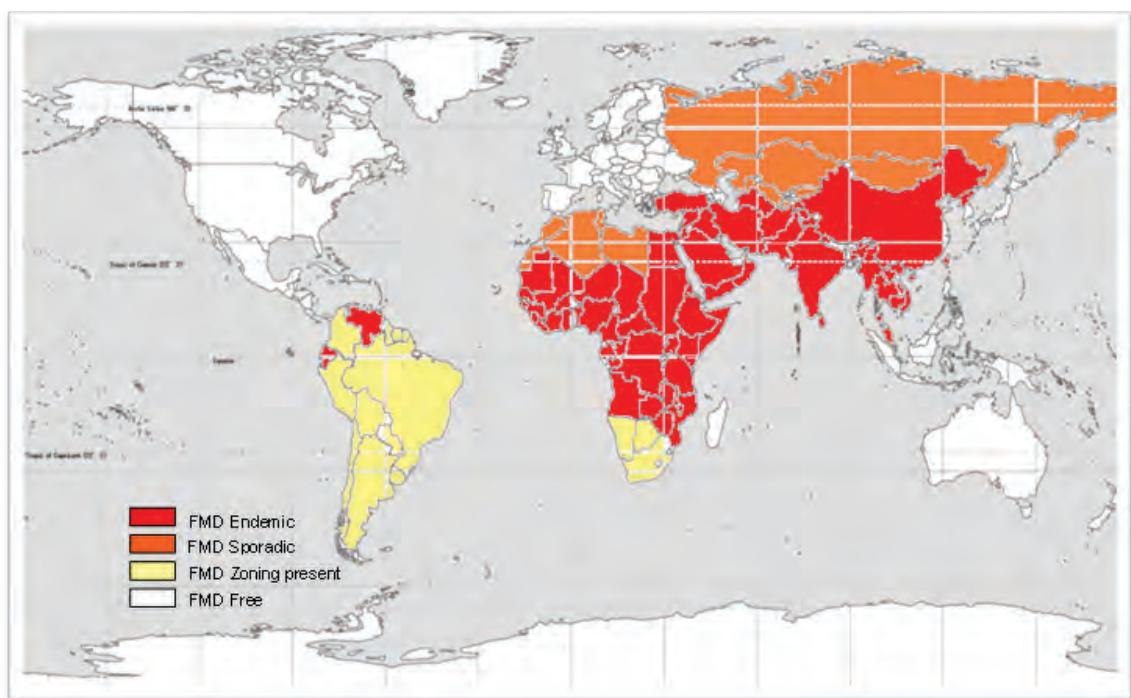
This work aims to improve the currency, accessibility and understanding of disease response procedures. DEDJTR will also need to develop a method for regularly assessing:

- the currency and relevance of its procedures
- compliance with procedures, as this does not currently occur.

### 3.3.2 Foot-and-mouth disease planning

Figure 3B shows that, while Australia is free of FMD, the disease is established in numerous other countries. Considering it is estimated that a large-scale, multi-state FMD outbreak is estimated to be \$52 billion over 10 years, dedicated and comprehensive planning to enhance Victoria's preparedness for this disease is vital.

**Figure 3B**  
**Global status of foot-and-mouth disease, 2014**



Source: Department of Economic Development, Jobs, Transport & Resources.

In 2013–14 DEDJTR was allocated \$4.7 million over two years to deliver the Improving Victoria's Preparedness for Foot and Mouth Disease project. The project aims to address Victoria's high-risk issues as identified in the 2011 national review of FMD preparedness—Matthews report. These risks included:

- the effectiveness of swill feeding prohibitions
- Australia's national capacity to sustain a large scale FMD response
- traceability arrangements in the sheep industry
- the possibility that FMD may not be detected readily and speedily.

The project includes a wide range of actions to address these risks by enhancing disease surveillance, information systems, staff and private veterinary practitioner training, stakeholder engagement and the traceability of sheep and goats. Importantly, these actions provide benefits beyond FMD to Victoria's livestock biosecurity preparedness more broadly.

DEDJTR's delivery of this project fell behind schedule during its first year. About \$1 million of the \$2.3 million project budget for 2013–14 was not spent during that financial year and was carried forward to 2014–15. In June 2014 DEDJTR established a dedicated project manager position and a project control board to monitor the progress more closely. The board collects bimonthly reports detailing progress against project time lines and budgets.

Since establishing the project manager position and a project control board, DEDJTR has increased its rate of progress in delivering this project. However, further work is required to finalise project delivery. Some key deliverables will not be completed by their original deadlines:

- The development of a state response plan for FMD was originally due for completion by 30 June 2014. This plan will outline the manner in which an FMD outbreak will be managed in Victoria. A draft of this plan was not completed until 30 June 2015 and will not be finalised until mid-2016. DEDJTR advised that this is due to new requirements arising from Victoria's reformed emergency management arrangements.
- Targeted surveillance activities at saleyards, knackeries and abattoirs were originally due for completion by 30 June 2015 but are now due by 30 September 2015.

Additionally, there are isolated instances where project deliverables have been cancelled or abandoned:

- DEDJTR had allocated \$35 000 to develop automated tools to detect aberrations in surveillance data that may be indicative of an emerging disease threat such as FMD. In March 2015 DEDJTR cancelled this work after the responsible staff member left. The documentation supporting this decision does not consider alternative methods for completing this work.
- The original project plan committed to developing separate communications strategies for FMD preparedness and responses by 30 June 2015. However, the FMD preparedness communications strategy was not developed and is no longer reflected in DEDJTR's progress reporting.

DEDJTR's adoption of more rigorous project management arrangements is positive. It is critical that DEDJTR now completes the delivery of this project as a priority to maximise Victoria's preparedness for FMD.

**Figure 3C**  
**Case study—suspected case of foot-and-mouth disease**

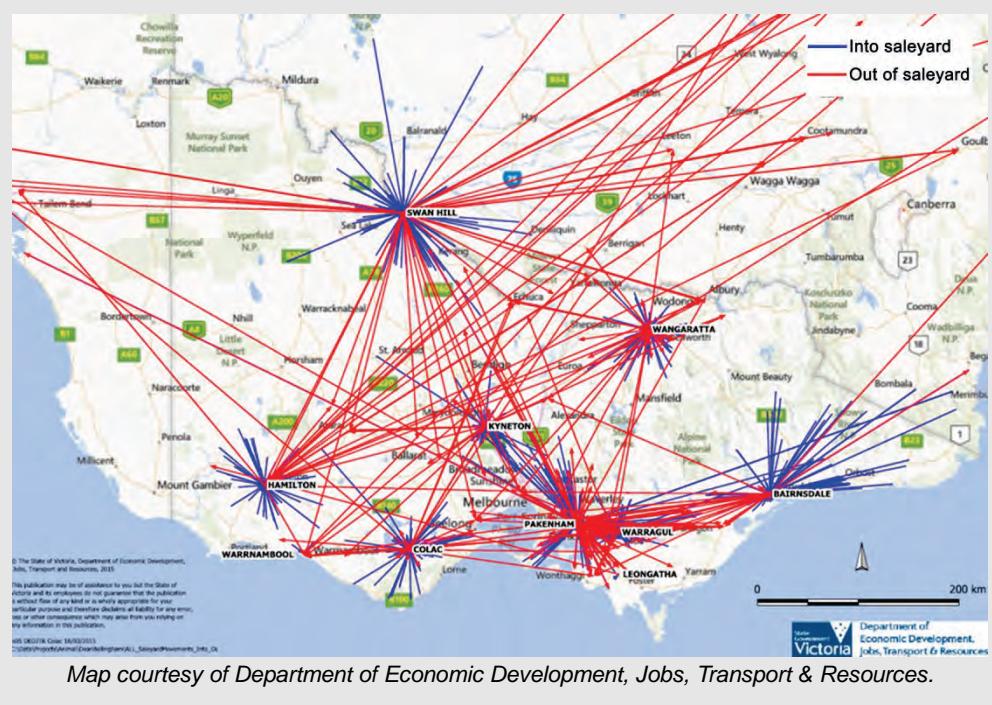
On 28 January 2015 DEDJTR was notified of a suspected case of FMD by a local veterinary practitioner in Echuca. On the same day, DEDJTR sent a veterinary officer to undertake a field investigation and collected biological samples for testing. As a precaution, a quarantine notice was placed on the property shortly after the departmental staff's initial visit.

The samples were provided to the Australian Animal Health Laboratory at 10 pm on that day and tested overnight. Negative test results were confirmed at 4 am the following morning, and the quarantine was revoked later that day. Investigation of this suspected case and resolution of the FMD status of the property was completed by DEDJTR within 24 hours.

DEDJTR's response to this suspected FMD case was prompt, laboratory testing was responsive and communication within DEDJTR was timely and effective.

The following map shows the movements of cattle and sheep into and out of saleyards on 29 January 2015, the day after the suspected FMD case was reported. Echuca's central location among these movements highlights the potential for a confirmed case of FMD to spread rapidly within and outside of Victoria.

#### Sheep and cattle movements into and out of saleyards on 29 January 2015



Source: Victorian Auditor-General's Office.

## 3.4 Response capability

Staff and stakeholder capability to effectively respond to a livestock disease outbreak is influenced by:

- exercises that simulate a response to a major disease outbreak
- training of agency staff and private veterinary practitioners
- evaluations of both simulated and real life disease responses.

DEDJTR has undertaken a range of activities across these three areas that have helped to support the state's livestock disease preparedness. However, there is room to improve how these activities are coordinated and evaluated.

### 3.4.1 Simulation exercises

Figure 3D shows that DEDJTR has conducted and participated in wide-ranging emergency animal disease simulation exercises, at both the national and state level. The focus of these exercises has been to test preparedness and capability to respond to a major livestock disease outbreak, as well as the strategies, plans and systems of government agencies and industry stakeholders.

**Figure 3D**  
**National and state simulation exercises undertaken in Victoria since 2009**

Exercise	Purpose
Exercise Diva, 2009	Improve FMD response preparedness and capability. Various government agencies and industry peak bodies participated. Covered a wide range of preparedness issues across the areas of industry engagement, operational plans and communications.
Exercise Flapdoodle, 2009	Develop Victorian epidemiologists' ability to deal with rapidly developing disease outbreaks. Participants monitored a hypothetical disease outbreak and made projections about the disease's progress.
Exercise Wombat, 2012	Simulated an avian influenza outbreak in the Gippsland region.
Leongatha Exercise, 2013	Test the SoP for visiting farms or livestock facilities.
Maffra Exercise, 2013	Test the SoP relating to detection of suspected vesicular disease at a saleyard.
Bairnsdale District Exercise, 2013	Test the SoP for securing a property that has a suspected or confirmed emergency animal disease.
Box Hill District Emergency Animal Disease Exercise, 2013	Test the SoP for decontamination of anthrax death sites.
Exercise Segue, 2013	Use a hypothetical FMD outbreak to discuss and clarify senior departmental staff roles and responsibilities in the event of an emergency animal disease outbreak.
National Exercise Odysseus, 2014	Enhance preparedness for and implementation of a national livestock standstill in response to an outbreak of FMD in Queensland.
Exercise Chief Veterinary Officer Unit, 2014	Improve the preparedness of DEDJTR's Chief Veterinary Officer Unit to respond to an FMD outbreak.
Exercise Son of Segue, 2014	Increase departmental regional managers' awareness of national and state arrangements guiding biosecurity emergency responses.

Source: Victorian Auditor-General's Office.

Departmental reviews of these exercises found that they were effective in achieving their objectives, including improving and enhancing the experience of departmental staff, testing and amending particular procedures and strengthening the state's ability to manage an emergency animal disease outbreak.

However, DEDJTR has not selected, planned for and delivered these exercises in a strategic manner. Consequently it is unclear whether past exercises have combined to focus on the areas of greatest need, or maximised Victoria's livestock disease preparedness.

An effective, strategic approach to simulation exercise selection, planning and delivery:

- provides clear priorities against which the selection of exercises can be made
- enables the ideal scale and resourcing of selected exercises to be determined
- establishes formal evaluation and reporting arrangements to assess the collective impact and effectiveness of simulation exercises.

DEDJTR's current work to develop a tool that assesses and prioritises animal disease threats provides an ideal opportunity to improve its selection of future simulation exercises.

### 3.4.2 Training programs

Figure 3E shows that DEDJTR provides and participates in a variety of livestock biosecurity training activities.

**Figure 3E**  
**Livestock biosecurity training initiatives in Victoria**

Training	Purpose
Working in Biosecurity Emergency Response (WinBER) training	Aimed at preparing biosecurity staff to work effectively during a biosecurity emergency response in the field or in a control centre.
Biosecurity Emergency Response eLearning Program	An online induction program that helps familiarise departmental staff with the procedures and guidelines for responding to emergency biosecurity disease and pest outbreaks.
2014 National Biosecurity Training Managers Workshop	Aimed to provide nationally collaborative and consistent approaches to biosecurity emergency response training.
League of Victorian Epidemiologists	A semi-formal group of departmental veterinarians that receives training in veterinary epidemiology.
Emergency animal disease workshops	Provided to private veterinary practitioners to refresh and update their knowledge of selected diseases and clarify state and national arrangements for emergency disease outbreak responses.
Disease surveillance training	Provided to both departmental staff and private veterinary practitioners to support disease surveillance activities.
Accreditation Program for Australian Veterinarians	A national program intended for private veterinary practitioners who undertake livestock biosecurity activities on behalf of DEDJTR.

Source: Victorian Auditor-General's Office.

While these programs are wide ranging, it is unclear whether they collectively have the coverage and content needed to provide staff and external veterinarians with sufficient technical skills to respond to an emergency animal disease outbreak. DEDJTR advised that resourcing constraints have made it difficult to achieve sufficient program coverage and focus.

One particular training gap was identified in a departmental review of an animal welfare investigation in the Gippsland region in 2014. It highlighted the lack of an ongoing and structured learning and development program for departmental staff involved in animal welfare investigations.

DEDJTR is developing a new learning and development framework for the Biosecurity Division through its Building Biosecurity Emergency Response Capability project. It aims to enhance biosecurity staff participation in training by providing learning pathways to support staff development in key skill sets required for their roles. We expect that DEDJTR will use this new framework to assess the coverage and content of its various training programs.

### 3.4.3 Evaluations of simulated and actual responses

DEDJTR's simulation exercises are routinely evaluated on an individual basis and key lessons learned have been captured in evaluation reports. Due to the difference in the scope, focus, and nature of these exercises, DEDJTR's evaluations vary considerably. Many are limited to a summary of participants' feedback to determine whether exercise objectives are being met. None of the evaluations include information on the cost of conducting these exercises, or the value for money achieved. There is also a lack of broader assessment of the overall impact of these exercises.

DEDJTR's evaluations of actual responses were detailed and identified a number of areas or processes that need improvement. However, DEDJTR's adherence to its documented response procedures has not been assessed as part of the evaluations.

Detailed recommendations from DEDJTR's evaluations of its simulated and actual responses have been recorded in a central repository for monitoring implementation. While this shows that some recommendations have been addressed, the status of others has not been recorded. Additionally, recommendations from some major exercises and actual responses, including the National Exercise Odysseus, were not captured in this repository.

DEDJTR has recognised the need for a more robust evaluation of its biosecurity activities, including livestock disease responses. It has now commenced work to develop a biosecurity evidence framework to provide a consistent approach to measuring, evaluating and reporting performance against desired outcomes. This new framework provides a good starting point for DEDJTR to address the abovementioned gaps by establishing a more rigorous and systematic evaluation approach.

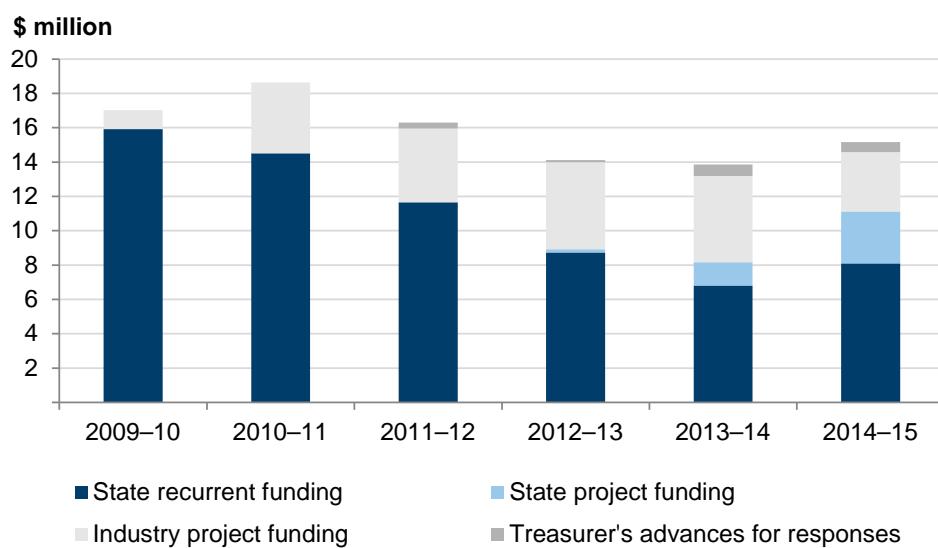
## 3.5 Response capacity

A decline in financial and staff resourcing for core livestock biosecurity activities has weakened DEDJTR's capacity to prevent, prepare for and respond to a major livestock disease outbreak, as well as concurrent smaller-scale outbreaks.

### 3.5.1 Funding arrangements

Figure 3F shows that state recurrent funding for core livestock biosecurity activities reduced by 49 per cent between 2009–10 and 2014–15. This funding stream covers a range of critical functions that include—but are not limited to—veterinary services, surveillance and tracing livestock movements.

**Figure 3F**  
**State funding for livestock biosecurity 2009–10 to 2014–15**



*Note:* Excludes funding for animal welfare and endemic disease control.  
*Note:* DEDJTR was allocated \$9.4 million in recurrent funding for all forms of biosecurity as part of the 2015–16 Budget. The proportion to be allocated to livestock biosecurity has not yet been determined.

*Source:* Victorian Auditor-General's Office based on data from the Department of Economic Development, Jobs, Transport & Resources.

The decline in recurrent funding has been partly offset by an increase in short-term state project funding. This has been provided mostly through the Improving Victoria's Preparedness for Foot and Mouth Disease project and the Growing Food and Fibre Initiative.

Additionally, industry funding for livestock health initiatives has been provided through three trust funds established under the *Livestock Disease Control Act 1994* for the cattle, pig, and sheep and goat industries. These three trust funds are resourced by levies imposed on livestock transactions and are used to compensate producers for disease-related livestock losses and to fund projects that benefit their respective industries. The majority of projects funded through these trust funds have been managed by DEDJTR and focused on research and development, industry engagement and training.

DEDJTR has also received \$1.72 million in Treasurer's advances since 2009–10 to support its responses to specific livestock disease outbreaks. This amount is relatively small compared to other funding streams due to the absence of any large scale livestock disease outbreaks in recent years.

Importantly, the decline in state recurrent funding for core livestock biosecurity activities has impacted on DEDJTR's core capability to respond to emergencies. It also increases reliance on reactive funding allocations to protect Victoria's livestock industries from emergency animal diseases. In line with the biosecurity invasion curve detailed in Figure 1A, this represents a diminished return on investment for the state compared to resourcing preventative and preparatory activities.

### 3.5.2 Staff resourcing

Staff resourcing is critical to Victoria's livestock disease preparedness. However, the resource-constrained environment that DEDJTR operates within has impaired its response capacity. Figure 3G shows that the total number of veterinary and animal health officer staff in DEDJTR has decreased by 42 per cent since 2010.

**Figure 3G**  
**Departmental staffing of veterinary officers and animal health officers**

<b>Position</b>	<b>Full time equivalent staff</b>		<b>Reduction (per cent)</b>
	<b>2010</b>	<b>2015</b>	
Veterinary officers	21	15.2	28
Animal health officers	33.68	16.48	51
<b>Total</b>	<b>54.68</b>	<b>31.68</b>	<b>42</b>

Source: Victorian Auditor-General's Office.

DEDJTR's December 2014 Biosecurity Budget Strategy highlights the implications of its staff resourcing constraints. The strategy reports that its existing veterinary and animal health staffing levels were insufficient to meet the World Organisation for Animal Health (OIE) expectation that a jurisdiction is able to manage one medium or two concurrent small animal diseases outbreaks from within its own staff resources. While Victoria is not directly a member of the OIE, this is a useful benchmark for comparison.

In response to its increasing resource constraints, DEDJTR has adopted an 'interoperable' approach to maintaining staff capacity for biosecurity. Under this approach, staff are developed to have the skills required to perform a range of fundamental tasks across all types of biosecurity, including animal health and welfare. While this has advantages in terms of resourcing efficiency, it does create risks where advanced or specialist expertise are not available. For example, DEDJTR advised that it currently does not have sufficiently trained veterinary staff in-house to bleed pigs, an important skill for diagnosing diseases.

DEDJTR has also responded by undertaking detailed workforce planning on a monthly basis to identify, assess and prioritise the filling of staff vacancies within its Biosecurity Division. In relation to animal health and welfare staff, DEDJTR has adequately identified high-risk vacancies and taken action to fill those within its budget constraints.

Additionally, in 2013 DEDJTR developed a 'Model of Cover' for FMD that estimated the human resources needed to respond to an FMD outbreak in Victoria. As shown in Figure 3H, it concluded that during the first week of a medium to large scale FMD outbreak in Victoria, 1 042 positions would need to be directly involved in managing the outbreak.

**Figure 3H**  
**Staffing required during the first week of a response to an FMD outbreak**

Position	Number of staff required
Departmental biosecurity staff	296
Other departmental staff	400
External staff	346
<b>Total staff</b>	<b>1 042</b>

*Note:* Figures include staff deployed to a control centre or in the field and excludes staff resources for communications, call centres, vaccination teams, community meetings and surge capacity for movement control enforcement.

*Source:* Victorian Auditor-General's Office.

DEDJTR used this model to develop a plan for resourcing a response to a large scale FMD outbreak in Victoria. The plan concluded that DEDJTR would be unable to provide the required level of staff resourcing.

Ultimately, DEDJTR's capacity to meet these requirements is heavily reliant on input from external sources that could be secured through:

- the *Emergency Animal Disease Response Agreement* which establishes joint funding and management arrangements for emergency animal disease responses across all state and territory governments, and 14 livestock industry bodies
- Victoria's Emergency Management Framework that provides for a whole-of-government response to emergencies.



## 3.6 Response systems

DEDJTR has an adequate response information system in place with wide-ranging functionality. However, the effectiveness of this system is undermined by a decline in surveillance activity over time.

DEDJTR is taking a leading role to address known weaknesses in the national system for tracing sheep and goats during a major disease outbreak. This work could potentially lead to significant improvements in livestock disease preparedness in Victoria and other jurisdictions.

### 3.6.1 DEDJTR's response information system

DEDJTR's response information system is sophisticated and supports a range of important functions during an outbreak, including:

- emergency management
- spatial mapping and analysis
- surveillance for disease monitoring and compliance management
- case management
- animal tracing, drawing on data in the National Livestock Identification System (NLIS)
- property and client identification
- resource allocation
- vaccination management and tracking
- customisable reporting across all functions.

Mobile access to this system by DEDJTR's animal health staff is now being improved through the Improving Victoria's Preparedness for Foot and Mouth Disease project, as well as the Systems for Enhanced Farm Services project. This will allow staff to assign tasks while in the field and record and submit information in real time.

While DEDJTR's response information system is adequate overall and being further improved, the weaknesses in livestock disease surveillance coverage and data identified in Part 2 undermine the effectiveness of this system. Specifically, poor, absent or untimely surveillance data could result in the late detection of a disease outbreak, significantly impairing the capability to eradicate an emergency animal disease before it becomes widespread.

### 3.6.2 Livestock traceability systems

The NLIS is Australia's system for identifying and tracing livestock animals—including cattle, sheep and pigs—from birth to slaughter. This system is integral to effectively managing animal diseases and any associated human health implications. It enables agencies to trace the origin and spread of a disease. DEDJTR and the livestock industry work together to implement the NLIS in Victoria.

Figure 3l demonstrates the capability of the NLIS in tracing livestock movements. It also shows the potential for an emergency animal disease to spread rapidly through livestock movements into and out of saleyards.

**Figure 3l**  
**Sheep movements into and out of Ballarat Saleyards on 15 July 2014**



Source: Department of Economic Development, Jobs, Transport & Resources.

The traceability of sheep and goats is a major weakness of the NLIS. Unlike cattle traceability—which uses electronic devices to track cattle movements—sheep and goat traceability is based on visually readable tags and paper records. This significantly affects the quality, reliability and timeliness of NLIS sheep and goat data.

This weakness is highlighted in DEDJTR's March 2015 review of the correlation between visually readable tags and the paperwork accompanying the movement of sheep and goats. The review found major discrepancies between the tags and the paperwork, including:

- for 41 per cent of tags collected from sheep at slaughter, there was no record of the tag's property identification code (PIC) on accompanying paperwork
- for 31 per cent of PICs listed on paperwork, there was no record of the PIC being on tags
- 25 per cent of PICs handwritten on paperwork had been incorrectly transcribed.

The absence of an effective sheep and goat traceability system also poses risks for the cattle industry. This is due to the fact that some diseases can be transmitted between sheep and cattle.



While the NLIS is managed at a federal level, DEDJTR has commenced work to develop a new traceability system for sheep and goats that uses electronic tags. If implemented as planned, this project could significantly improve Victoria's capability to prevent, prepare for and respond to an emergency animal disease outbreak. It could also lead to improved market access, food safety and livestock production efficiency.

Under the NLIS, pig movements are tracked using tattoos or visually readable tags and paper records. This arrangement is better suited to pigs than sheep and goats, as the rate of pig movements is relatively low by comparison. Additionally, the department advised that pigs are generally housed in sheds and rarely leave their property until they are moved to an abattoir.

## **Recommendations**

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That the Department of Economic Development, Jobs, Transport & Resources:

3. finalises plans to implement a new electronic traceability system for sheep and goats
  4. adopts a systematic approach to:
    - reviewing and updating its documented livestock biosecurity procedures
    - selecting disease simulation exercises based on disease risks and the coverage, content and delivery of past exercises
    - evaluating the outcomes of simulated and actual disease responses as part of a continuous improvement program
    - assessing the coverage and content of its livestock biosecurity training programs for staff and private veterinary practitioners.
-

# 4

# Stakeholder engagement

## At a glance

### Background

The Department of Economic Development, Jobs, Transport & Resources' (DEDJTR) government and non-government stakeholders for livestock biosecurity are varied and play a vital role in disease prevention, preparedness and responses.

### Conclusion

DEDJTR recognises the important role that its government and non-government stakeholders play in livestock biosecurity and has undertaken a range of activities in this area. Its engagement and collaboration with government bodies has been satisfactory. While DEDJTR's engagement with non-government stakeholders has been extensive, it has not been strategic. This increases the risk of misdirected and ineffective engagement.

### Findings

- DEDJTR has actively contributed to national biosecurity arrangements and Victoria's Emergency Management Framework.
- DEDJTR's and the Department of Health and Human Services' collaboration in relation to zoonotic livestock diseases—those that are transmittable from animals to humans—has been satisfactory.
- DEDJTR's engagement with non-government stakeholders lacks an overarching strategic approach.
- DEDJTR's animal welfare compliance and enforcement workload has significantly increased over time.

### Recommendations

That DEDJTR develops an overarching strategic approach to engaging non-government stakeholders.

## 4.1 Introduction

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The Department of Economic Development, Jobs, Transport & Resources' (DEDJTR) government and non-government stakeholders for livestock biosecurity are varied:

- Government agencies that form part of national biosecurity arrangements and Victoria's Emergency Management Framework are key stakeholders. In particular, the Department of Health and Human Services (DHHS) makes an important contribution to managing the human health risks associated with livestock disease.
- Non-government stakeholders include Victoria's livestock industries and private veterinary practitioners. Effective engagement with these stakeholders involves establishing forums for regular consultation and performing targeted compliance and enforcement activities.

This Part examines DEDJTR's approach to engaging with both government and non-government stakeholders involved in livestock biosecurity.



## 4.2 Conclusion

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DEDJTR recognises the important role that its government and non-government stakeholders play in livestock biosecurity and has undertaken a range of activities in this area. It has actively contributed to national biosecurity arrangements and Victoria's Emergency Management Framework, although the latter has not been tested by a significant livestock disease outbreak since being established in 2013. Collaboration between DEDJTR and DHHS to jointly manage the threat of zoonotic diseases—those that are transmittable from animals to humans—has been extensive and valuable.

DEDJTR's engagement with non-government stakeholders has been extensive. While this is positive, there has been no overarching strategic approach to these activities. This increases the risk of misdirected and ineffective engagement.

DEDJTR's livestock health and welfare compliance and enforcement workload presents a particular engagement challenge going forward. Specifically, the increase in public awareness of animal welfare issues has contributed to a 57 per cent growth in animal welfare investigations between 2010 and 2013. DEDJTR's capacity to meet this growing demand has been constrained by a 42 per cent reduction since 2010 in appropriately qualified departmental staff available to perform these investigations.

## 4.3 Engagement with government stakeholders

DEDJTR engages and collaborates with government bodies involved in livestock biosecurity through:

- national biosecurity arrangements
- Victoria's Emergency Management Framework
- its memorandum of understanding (MOU) with DHHS for jointly managing zoonotic disease threats
- livestock industry committees that include representatives from other government bodies.

DEDJTR's engagement and collaboration through these channels has been satisfactory.

### 4.3.1 National biosecurity arrangements

In line with national biosecurity arrangements, DEDJTR has actively engaged with the Commonwealth Government and other states and territories to prevent, contain and eradicate emergency animal diseases. DEDJTR participates in a variety of national biosecurity initiatives and programs including national simulation exercises and surveillance programs, and represents the state on a range of national biosecurity committees.

DEDJTR has also supported other jurisdictions in responding to disease outbreaks. For example, DEDJTR's timely provision of staff and expertise during the 2013 outbreak of highly pathogenic avian influenza among layer hens in New South Wales formed part of a collaborative eradication program agreed to by Commonwealth, state and territory governments and the egg and chicken industries. Four departmental staff were sent to provide specialist assistance and to observe the management of the outbreak.

### 4.3.2 Victoria's Emergency Management Framework

In Victoria, responses to emergency animal disease incidents are managed under the Emergency Management Framework established under the *Emergency Management Act 2013*. This new framework facilitates an integrated approach to emergency management, with DEDJTR leading responses to emergency animal disease outbreaks.

DEDJTR has actively engaged with other Victorian agencies through its membership of the State Emergency Management Team. This team comprises representatives from all departments and facilitates discussion to develop a consistent understanding of emergencies affecting Victoria. DEDJTR has been actively involved in State Emergency Management Team discussions.

Under this framework DEDJTR participated in whole-of-government responses to Victorian bushfires in late 2014 and early 2015. Its focus during these responses was to manage the welfare of animals affected.

Victoria's Emergency Management Framework is yet to be tested by a medium or large-scale emergency livestock disease outbreak.

### 4.3.3 Collaboration with DHHS in managing zoonotic disease threats

DEDJTR and DHHS have collaborated regularly to jointly manage zoonotic disease threats. This working relationship has been formalised by a 2010 MOU between the two departments that was developed in response to a recommendation from the 2008 VAGO audit *Biosecurity Incidents: Planning and Risk Management for Livestock Disease*.

On average the two departments have met formally twice a year to fulfil their commitments under the MOU. Records of these meetings show that both departments have successfully shared information and resources and developed joint protocols relating to zoonotic diseases. However, as shown in Figure 4A, MOU commitments to complete a joint risk assessment, an external communications strategy and a three-yearly review of the agreement, have not been fulfilled.

**Figure 4A**  
**DEDJTR and DHHS compliance with the requirements of the MOU for joint management of zoonotic diseases**

Requirement	Compliance
Develop a joint threat analysis and risk assessment for zoonotic diseases	✗
Share relevant planning and preparedness documentation	✓
Participate jointly in training and staff development	✓
Document operational procedures in consultation with the other party	✓
Inform the other party of a zoonotic disease event	✓
Develop a joint external communications strategy between both parties' media units	✗
Share details on disease surveillance methods and programs	✓
Review the MOU and achievement of its objectives every three years	✗

Source: Victorian Auditor-General's Office.

DEDJTR's current work to develop a risk assessment tool to prioritise livestock disease threats, including those that are zoonotic, provides an ideal opportunity to address the lack of a joint threat analysis by the two departments. Additionally, both departments have advised of plans to review the currency and suitability of the MOU.

**Figure 4B****Case study—low pathogenic avian influenza outbreak, 2012**

On 25 January 2012 the former Department of Primary Industries (DPI) detected low pathogenic avian influenza, subtype H5N3, on a duck farm in Mickleham, and on a second premises in New Gisborne. An emergency response was activated to contain and eradicate the virus.

The infected farm in Mickleham was quarantined by the former DPI on the same day that the disease was first detected. The other farm in New Gisborne was quarantined the following day. Subsequent sample testing at the Australian Animal Health Laboratory confirmed the presence of low pathogenic avian influenza—the first instance of this being detected in poultry in Australia.

The federal Consultative Committee on Emergency Animal Diseases met on 27 January 2012 and agreed to recommend to the National Management Group that a response to eradicate the virus be cost-shared under the national Emergency Animal Disease Response Agreement.

In line with national arrangements, the former DPI developed an Emergency Animal Disease Response Plan (EADRP) to eradicate the disease. The EADRP was approved by the Consultative Committee on Emergency Animal Diseases on 31 January 2012. It focused on:

- the destruction and disposal of poultry on the infected properties
- the maintenance of quarantine and movement controls
- targeted surveillance of at-risk species and the disease's spread
- cleaning and decontamination of the infected properties.

To supplement the EADRP, the former DPI developed Incident Action Plans that gave a daily account of:

- the disease's status
- response tasks, both planned and completed
- media and communications activities
- staff resourcing.

A control centre was established at the former DPI's Attwood offices. The control centre was staffed by 35 to 40 DPI personnel. A clear chain of command was established, led by the Chief Veterinary Officer.

As avian influenza can pose risks to human health, the former DPI kept the former Department of Health informed of its progress in eradicating the low pathogenic avian influenza outbreak via regular meetings.

By June 2012 the disease was found to be no longer present and the response was completed.

The former DPI reported in its review of the response that it was efficient, especially during early stages. However, some weaknesses were identified, including but not limited to:

- staff involved in the response not consistently applying standards for personal biosecurity and personal protective equipment—the former DPI highlighted this as a critical risk requiring active management and training
- staff resourcing constraints after the first week of the response
- the former DPI's response information system not being used to its full potential
- a lack of clarity regarding roles as the response scaled down
- a 'typically low level of engagement between DPI animal health staff and the poultry industries'
- confusion among municipal authorities around expenses incurred for carcass disposal, despite this being clarified in the *Emergency Management Manual Victoria*.

Source: Victorian Auditor-General's Office.

## 4.4 Engagement with non-government stakeholders

DEDJTR engages extensively with non-government stakeholders on livestock biosecurity matters. However, this engagement has not occurred in line with an overarching strategic approach.

DEDJTR's newly developed risk-based approach for targeting livestock biosecurity compliance and enforcement activities is adequate, but yet to be implemented. The successful application of this new approach will be challenged by a growing demand for investigations of animal welfare issues. Combined with a decline in staff resourcing, this growing demand places pressure on DEDJTR's capacity to perform other forms of animal health fieldwork.

### 4.4.1 Consultative committees

Effective engagement with Victoria's livestock industries is critical to the state's livestock disease preparedness. DEDJTR interacts with these industries through a range of consultative committees that provide advice on wide-ranging issues, including policy and legislative changes, program coordination and project funding. These are summarised in Figure 4C.

**Figure 4C**  
**Livestock industry consultative committees**

Type	Committee and function
Statutory	Cattle Compensation Advisory Committee <ul style="list-style-type: none"> <li>Established under the <i>Livestock Disease Control Act 1994</i> to advise the Minister for Agriculture on cattle diseases for which compensation should be payable, the amount of compensation payable and the funding of projects for the benefit of the Victorian cattle industry.</li> </ul>
	Sheep and Goat Compensation Advisory Committee <ul style="list-style-type: none"> <li>Established under the <i>Livestock Disease Control Act 1994</i> and performs the same functions as the Cattle Compensation Advisory Committee but for the Victorian sheep and goat industries.</li> </ul>
	Swine Industry Projects Advisory Committee <ul style="list-style-type: none"> <li>Established under the <i>Livestock Disease Control Act 1994</i> to advise the Minister for Agriculture on any proposed projects for which payments under the Swine Compensation Fund are sought.</li> </ul>
Ministerial	National Livestock Identification System (Cattle) Implementation Advisory Committee <ul style="list-style-type: none"> <li>Advises the Minister for Agriculture on matters associated with the National Livestock Identification System (Cattle).</li> </ul>
	Sheep and Goat Identification Advisory Committee <ul style="list-style-type: none"> <li>Advises the Minister for Agriculture on matters associated with the National Livestock Identification System (Sheep and Goats).</li> </ul>
	Animal Welfare Advisory Committee <ul style="list-style-type: none"> <li>Provides advice to the Minister for Agriculture on animal welfare issues.</li> </ul>
Departmental	Livestock Industry Consultative Committee <ul style="list-style-type: none"> <li>Provides a forum for engagement between DEDJTR, livestock industries and the private veterinary sector, regarding animal biosecurity and welfare.</li> </ul>

Source: Victorian Auditor-General's Office.

These committees have been valuable in giving livestock industries the opportunity to provide input to government decision-making on various biosecurity issues and funding priorities. The Livestock Industry Consultative Committee and the Animal Welfare Advisory Committee also provide the opportunity to obtain input from the private veterinary sector.

DEDJTR undertakes further stakeholder engagement with livestock industries and private veterinary practitioners through a variety of training and disease simulation activities as discussed in Part 3.

#### 4.4.2 Improving external engagement

DEDJTR's external engagement approach has not systematically assessed the needs of, and risks to, non-government stakeholder groups including livestock industries and private veterinary practitioners. In particular, there has been limited engagement with the poultry industry in comparison with the cattle, sheep and pig industries, which have dedicated consultative committees as described in Figure 4C. No such arrangement is in place for the poultry industry, although it is represented on the Livestock Industry Consultative Committee.

Additionally, previous exercises that simulated an emergency animal disease outbreak identified weaknesses in industry engagement during a response. Exercises Diva in 2009 and Odysseus in 2014 both cited a lack of awareness of emergency animal diseases and their implications among some stakeholders.

DEDJTR has acknowledged the need to enhance its engagement with non-government stakeholders. It is working to improve in this area by:

- developing a communications plan for use during a response to an FMD outbreak
- developing a separate communications plan to prevent illegal swill feeding
- increasing stakeholder participation in livestock disease surveillance
- employing three staff to advise the livestock industries on sheep and goat diseases encountered in Victoria.

While these actions are beneficial, there remains a need for a more coordinated, overarching approach to engaging with the numerous external stakeholders that play a vital role in preventing, preparing for and responding to livestock diseases. During the latter stages of this audit DEDJTR advised that it has commenced work on an overarching stakeholder engagement strategy to address this gap.

#### 4.4.3 Compliance and enforcement challenges

DEDJTR is responsible for monitoring and enforcing stakeholder compliance with eight livestock disease related Acts, as detailed in Section 1.2.2.

The compliance requirements within these Acts are numerous, requiring a risk-based approach to targeting enforcement activities. However, DEDJTR's past compliance and enforcement of livestock health and welfare legislation has not taken such an approach. In recognising this gap, DEDJTR drafted a risk-based framework for animal health and welfare compliance and enforcement in 2014. The framework has not yet been implemented, but it does provide a suitable basis to target future activities across the wide-ranging legislative obligations relating to livestock health and welfare.

In practice the majority of DEDJTR's compliance and enforcement activity has focused on:

- investigating reported cases of livestock welfare issues
- auditing compliance with the requirements of the National Livestock Identification System at saleyards, abattoirs and knackeries
- auditing food outlets to identify illegal swill feeding practices.

Growing public awareness of animal welfare issues has significantly increased the number animal welfare investigations undertaken by DEDJTR. As shown in Figure 4D, between 2010 and 2013 the number of animal welfare investigations conducted by its animal health staff increased from 348 to 816. DEDJTR also reports that animal welfare compliance activities now account for approximately one-third of its animal health field work. This increased workload has been compounded by a 42 per cent reduction since 2010 in the number of departmental staff available to undertake animal health and welfare fieldwork.

**Figure 4D**  
**DEDJTR animal welfare activities 2010 to 2014**

Compliance activity	2010	2011	2012	2013	2014
Investigations	348	315	600	816	688
Prosecutions	6	7	9	5	11
Warning letters	3	1	2	3	4
Advice—written or verbal	24	40	52	88	77
Unsubstantiated allegation	21	34	80	82	62

Source: Victorian Auditor-General's Office.

Despite DEDJTR's new risk-based framework for targeting compliance and enforcement, the increased workload will continue to challenge its capacity to perform other types of critical fieldwork, including disease surveillance.

## Recommendation

5. That the Department of Economic Development, Jobs, Transport & Resources develops an overarching strategic approach to engaging non-government stakeholders.

# Appendix A.

## *Audit Act 1994* section 16— submissions and comments

### Introduction

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In accordance with section 16(3) of the *Audit Act 1994*, a copy of this report, or part of this report, was provided to the Department of Economic Development, Jobs, Transport & Resources and the Department of Health and Human Services.

The submissions and comments provided are not subject to audit nor the evidentiary standards required to reach an audit conclusion. Responsibility for the accuracy, fairness and balance of those comments rests solely with the agency head.

**RESPONSE provided by the Acting Secretary, Department of Economic Development, Jobs, Transport & Resources**



Department of Economic Development,  
Jobs, Transport & Resources

1 Spring Street  
Melbourne, Victoria 3000

Mr John Doyle  
Victorian Auditor-General  
Victorian Auditor General's Office  
Level 24  
35 Collins Street  
MELBOURNE VIC 3000



Ref: SBR007993

Dear Mr Doyle *John*

**VAGO PERFORMANCE AUDIT PROPOSED REPORT – BIOSECURITY: LIVESTOCK**

Thank you for the opportunity to respond to the proposed report on Biosecurity: Livestock.

The Department of Economic Development, Jobs, Transport and Resources (DEDJTR) welcomes the report's acknowledgement of the successful responses to recent livestock disease events in mitigating risks to primary production, human health and animal welfare.

DEDJTR is committed to preparing for and responding to any potential emergency animal disease outbreak and is already looking at improvements to the traceability system for sheep and goats. DEDJTR is also developing a strategic approach to engagement with government and non-government stakeholders.

I am pleased to confirm that DEDJTR welcomes the report's finding and notes all of the recommendations. The department has enclosed a proposed action plan to be delivered across the biosecurity branches to address the recommendations. Implementation of the action plan has been carefully considered with respect to realistic timeframes.

I am confident that the enclosed action plan will drive improvements for the preparedness and response to livestock health emergencies in Victoria.

Yours sincerely

*Justin Hanney*

Justin Hanney  
A/g Secretary

*4/8/15.*



***RESPONSE provided by the Acting Secretary, Department of Economic Development, Jobs, Transport & Resources – continued***

**DEDJTR Action Plan  
Biosecurity: Livestock**

Recommendation	Initiative	Timing
<p>1. That the Department of Economic Development, Jobs Transport and Resources improves disease surveillance by:</p> <ul style="list-style-type: none"> <li>• focusing targeted surveillance activities based on a systematic assessment of disease risks.</li> <li>• increasing state-wide participation in surveillance programs by private veterinary practitioners so that surveillance records more accurately reflect the geographic distribution of livestock species and numbers, as well as disease threats.</li> <li>• establishing arrangements to gain assurance that industry-led disease surveillance of poultry is effective.</li> <li>• enhancing systems and processes to minimise the rate of error in disease surveillance records and improve their timely completion.</li> </ul>	<p>Complete validation and stakeholder assessment of the newly developed, but still DRAFT, DEDJTR animal health risk assessment tool.</p> <p>Undertake assessment of 20 important animal disease threats.</p> <p>Review current targeted surveillance activity in the light of the results of the risk assessment process.</p> <p>Undertake a survey of private veterinary practitioners to identify factors that may influence disease notification and participation in the Department's animal disease surveillance programs.</p> <p>Implement a communications strategy targeting private veterinarians to particularly promote the significant disease investigation program but also support targeted surveillance programs.</p> <p>Undertake a survey of poultry producers and their veterinary advisors to identify factors that may influence disease notification and participation in the Department's animal disease surveillance programs.</p> <p>Launch an on-line data submission process for private and DEDJTR veterinarians to improve the timeliness and quality of data entry.</p>	<p>30 September 2015</p> <p>31 March 2016</p> <p>30 June 2016</p> <p>30 June 2016</p> <p>31 December 2016</p> <p>30 June 2016</p> <p>31 December 2015</p>

***RESPONSE provided by the Acting Secretary, Department of Economic Development, Jobs, Transport & Resources – continued***

Recommendation	Initiative	Timing
2. That the Department of Economic Development, Jobs, Transport and Resources and the Department of Health and Human Services work together to determine and apply the most effective method for preventing the illegal swill feeding of pigs.	Identify and agree on respective agency roles.  Develop guidance material for Environmental Health Officers (EHOs). Instruct EHOs to collect food waste data from food outlets and report to DEDJTR for follow up regulatory action.	31 July 2015  31 December 2015
3. That the Department of Economic Development, Jobs, Transport and resources finalises plans to implement a new electronic traceability system for sheep and goats.	Department considers the best options for implementing a robust traceability system for sheep and goats. Implement pending a Ministerial decision. A project manager has been appointed.  Undertake an electronic tag tender process to determine the cost of tags for the industry in Victoria.	31 August 2015  31 August 2015
4. That the Department of Economic Development, Jobs, Transport and Resources adopts a systematic approach to: <ul style="list-style-type: none"> <li>• reviewing and updating its documented livestock biosecurity procedures.</li> <li>• selecting disease simulation exercises based on disease risks and the coverage, content and delivery of past exercises.</li> </ul>	Establish and commence a process of annual review of procedures.  Select and develop disease simulation exercises based on Chief Veterinary Officer priorities, outcomes of draft animal health risk assessment tool (see report recommendation and initiative 1), and staff learning and development needs.	Process in place and all procedures reviewed by 30 June 2016, with annual review by 30 June each year  Three priorities selected by 31 March 2016

***RESPONSE provided by the Acting Secretary, Department of Economic Development, Jobs, Transport & Resources – continued***

Recommendation	Initiative	Timing
<ul style="list-style-type: none"><li>• evaluating the outcomes of simulated and actual disease responses as part of a continuous improvement program.</li><li>• assessing the coverage and content of its livestock biosecurity training programs for staff and private veterinary practitioners.</li></ul>	This information will be collected via the Biosecurity Evidence Framework to ensure simulations are properly evaluated and learnings are documented and implemented where appropriate.  Review the Department's livestock training program for staff and veterinary practitioners and put into place a new program where required.	30 June 2016  30 June 2016
5. That the Department of Economic Development, Jobs, Transport and Resources develops an overarching strategic approach to engaging with non-government stakeholders.	A Biosecurity Engagement Framework is under development to guide and support effective and progressive engagement strategies and practices for working with internal and external collaborators and stakeholders.	30 June 2016

**RESPONSE provided by the Secretary, Department of Health and Human Services**



Secretary

Department of Health & Human Services

Mr John Doyle  
Auditor-General  
Victorian Auditor-General's Office  
Level 24, 35 Collins Street  
MELBOURNE VIC 3000

John  
Dear Mr Doyle



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Thank you for your letter dated 22 July 2015, enclosing a copy of the proposed report, *Biosecurity: Livestock*.

The areas of the report that relate to the Department of Health and Human Services are correct and accurate. There is one recommendation in the report which is of relevance to the department, the prevention of illegal swill feeding (page 19). The actions the department intends to take in relation to this recommendation, and for inclusion in the report, are as follows:

- The department will update the standard Food Safety Program Template that is used by a number of food businesses in Victoria to make clear how food waste is managed and that feeding pigs food waste contaminated with meat or other mammalian products is illegal. Those changes will also be conveyed to food businesses that do not use the standard template but prefer to develop their own Food Safety Program. In making those changes, the department will ensure that local council environmental health officers and auditors understand the changes being made and that they need to build those changes into their assessment and audit requirements for food businesses.
- The department will work with the Department of Economic Resources, Jobs, Transport & Resources to develop further written guidance material for food businesses which can be distributed by local councils.
- The Department of Economic Resources, Jobs, Transport & Resources will establish a single point of contact for local council environmental health officers and auditors to report any illegal swill feeding activity.

The department plans to have all actions completed by 31 January 2016.

Thank you for the opportunity to be able to provide input into the *Biosecurity: Livestock* report.

Yours sincerely

Dr Pradeep Philip  
Secretary



## Auditor-General's reports tabled during 2015–16

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Report title	Date tabled
Follow up of Collections Management in Cultural Agencies (2015–16:1)	August 2015
Follow up of Managing Major Projects (2015–16:2)	August 2015
Follow up of Management of Staff Occupational Health and Safety in Schools (2015–16:3)	August 2015

## Further information

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