



Australian Government
Department of Agriculture,
Water and the Environment

Protecting Australian agricultural production and exports from growing global hitchhiker threats

Regulation Impact Statement

Department of Agriculture, Water and the Environment



Protecting Australian agricultural production and exports from growing global hitchhiker threats

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1. Introduction

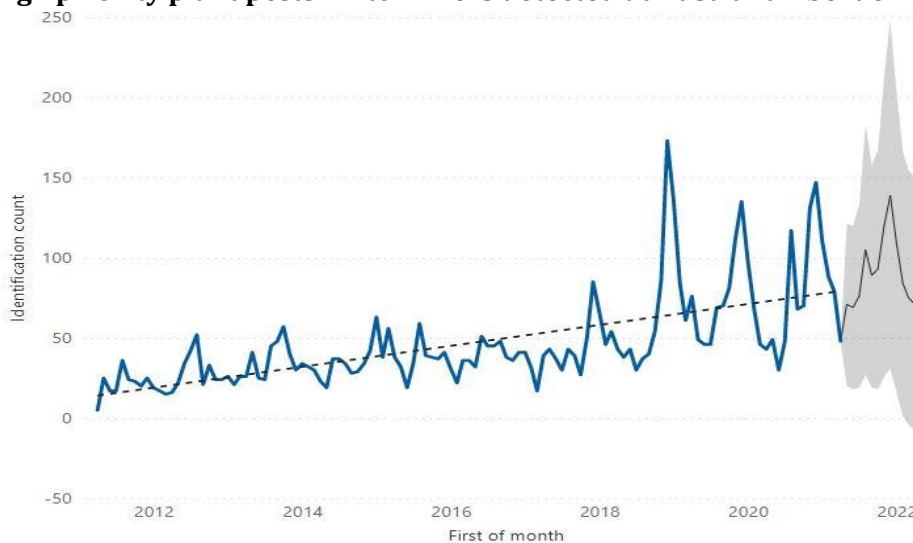
The purpose of this Regulation Impact Statement (RIS) is to explore options to respond to the growing biosecurity threat of hitchhiker pests for Australia. The RIS assessment has informed the policy and decision making for responding to hitchhiker pests. The identified options and an analysis of the benefits and regulatory impacts are explored in greater details through this RIS.

Hitchhiker pests have the potential to inflict significant damage on our agricultural industries, environment and broader economy, and are being found in increasing numbers in shipping containers and cargoes. The global spread of pests hitchhiking via international container and cargo movements has been increasing due to climate change, intensification of agriculture, increased trade volumes, accelerated movement of products, supply chain complexity and poor global shipping container hygiene. These pests are a significant threat to Australia’s \$61 billion agricultural sectors (ABARES, 2020), economy and the environment.

Australia has 42 National Priority Plant Pests (NPPP), identified by Plant Health Committee, which highlight the threats Australia faces from plant pests. While they are not the only plant pests of biosecurity concerns, they are used to focus government effort and national preparedness capability. These pests have the potential to cause significant damage to our plant industries, our environment and our way of life, and it is in the national interest to be prepared. Of the 42 pests, 23 of those are associated with hitchhiking on shipping containers or cargoes (Appendix 1).

Figure 1 illustrates the increasing threat of high priority hitchhiker plant pests that have been detected at the Australian border from 2010 to 2021 and forecasts projections for 2022. Note an identification count is the number of organisms that have been uniquely identified. For example, there may be many of the same pest found during an inspection but only one identification is counted.

Figure 1: High priority plant pests - hitchhikers detected at Australian border



Pest incursions result in losses in agricultural production, increased production costs due to mitigation measures, and losses to export markets. Table 1 provides estimates of the long-term consequence (over 20 years) for some high priority plant pests that are identified as hitchhikers. The models consider spread of pests and diseases over time and an estimation of the present value of economic consequences. These figures do not consider any eradication efforts as it is difficult to predict the success of such programs and associated costs.

Table 1: Long term consequence over 20 years (ABARES, 2014)

Pest/pest group	Economic consequence /over 20 years (2014)	Economic consequence/over 20 years Adjusted for inflation (2020)
Khapra beetle (<i>Trogoderma granarium</i>)	\$15.5 billion	\$17 billion
Exotic invasive ants	\$8.5 billion	\$9.3 billion
Gypsy moth (<i>Lymantria sp.</i>)	\$1.742 billion	\$1.9 billion
Giant African snail	\$1.51 billion	\$1.65 billion
Asian Honey Bees	\$0.697 billion	\$0.76 billion

Where a pest incursion occurs there are costs that may be borne by Australian governments and peak industry bodies to fund national emergency response programs. For example, there are three current exotic invasive ant eradication programs underway, as detailed in Table 2. These are funded by governments and can operate for many years and concurrently with other eradication responses as new outbreaks occur.

Table 2: Invasive ants: under national eradication in Australia

Species	Common name	Eradication status
<i>Solenopsis invicta</i>	Red imported fire ant (RIFA)	Under eradication, South east Queensland, since 2001, Western Australia, since 2019, Port of Brisbane 2021. Eradicated: freedom declared at Port Botany 2017; Port of Gladstone, Yarwun 2016; Brisbane airport 2018; Port of Brisbane, 2012 and 2016.
<i>Lepisiota frauenfeldi</i> (also <i>L. incisa</i> ; <i>L. canescens</i>)	Browsing ant	Under eradication, Darwin since 2015, Port of Brisbane since 2018 and Western Australia since 2018; freedom declared at Perth airport in August 2016, and at Belmont WA in November 2017.
<i>Wasmannia auropunctata</i>	Electric ant or little fire ant	Under eradication, Cairns since 2006.

Hitchhiker pests include snails, insects, frogs and spiders that are not intrinsically associated with imported goods as you would expect with a pest and host relationship. Hitchhikers are opportunistic in finding shelter in and on shipping containers and cargoes, they can be long-lived and difficult to detect. Changes in supply chains due to COVID-19 disruptions have exacerbated this issue as shipping containers providing an attractive habitat for insects and other organisms have remained on the ground for longer periods than usual.

Analysis of pest interceptions data during 2020, the Department of Agriculture Water and the Environment (DAWE, the department) found that at least 67 percent of interceptions are suspected to have been caused by contaminated sea containers.

For khapra beetle, Australia’s second most significant plant pest, 80 per cent of detections were associated with shipping containers. A survey of shipping containers cleanliness found that around half surveyed were contaminated with biosecurity risk material that provides an ideal habitat for hitchhiker species such as khapra beetle. More than 150 interceptions of khapra beetle, in 16 separate events, were recorded in 2020-21; a significant increase on the 12 interceptions recorded over the previous financial year. This is not just occurring in agricultural shipments or shipments from countries known to have khapra beetle. For example, detections have been made in imports of baby high-chairs and fridges (including packaging) from countries that are not khapra beetle countries.

Australia has strong controls on goods to reduce the likelihood of entry and establishment of specific pests and diseases that could threaten our economy, our environment or human health. High risk goods are subject to strict biosecurity import controls. Offshore biosecurity activities play a key role in Australia’s biosecurity system by reducing the biosecurity risk associated with imported goods and keeping the risks offshore. This is achieved by understanding global risks

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through intelligence and surveillance; working with international trading partners in multilateral forums; conducting risk assessments and developing biosecurity conditions; and undertaking audit and verification activities.

Border activities seek to verify that imports meet the required biosecurity conditions and intercept biosecurity risks that may be present in live animals and plants, cargo, mail and with international travellers to reduce the likelihood of new pests and disease entering the country. This includes working with importers to achieve voluntary compliance; inspections of goods and baggage by trained biosecurity officers, deploying detector dogs and x-rays; and managing high risk live animals, production genetics and new plant varieties in post entry quarantine that can assist in further growing Australia's productivity and competitiveness in those industries.

Controls have been developed to manage pests and diseases that are intrinsically associated with imported goods – such as wood boring insects that feed on timber. Hitchhiker pests are especially difficult to manage due to their ability to contaminate any imported item. Offshore controls and quality systems have been developed in response to the threat of some hitchhiker pests, such as the Sea Container Hygiene System. This is a tripartite arrangement between the Australian and New Zealand governments and participating commercial entities to manage the risk of giant African snail, and other pests, arriving from some pacific nations. Similarly, controls have been put in place to manage the risk of brown marmorated stink bug (BMSB) from a variety of countries during the risk season using off-shore and on-shore measures.

The department has assessed the increase in hitchhiker risk associated with shipping containers and cargoes beyond khapra beetle and BMSB and in accordance with the *Biosecurity Act 2015* has determined additional action is required to deal with the escalating threat. The approach in dealing with these issues 'pest by pest' as new events take place is not sustainable. We need a systemic approach that comprehensively manages all hitchhiker risks on the sea cargo pathway. Whilst the focus of this RIS is the management of hitchhiker risks in the sea cargo pathway, the policy concepts may also be applied to other hitchhiker pathways more broadly.

The cost of preventing hitchhiker pests from arriving in Australia are significantly lower than the cost of an outbreak and eradication efforts or the impacts of these pests establishing. For example, between 2001 and 2027 Australian governments will have spent approximately \$0.74 billion in efforts to eradicate red imported fire ant (RIFA) – an insect that can impact the environment, agriculture, and human health. The cost if RIFA became established is estimated up to \$43 billion over the next 30 years (Antony *et al* 2009).

2. The problem

To achieve an appropriate level of protection (ALOP) for Australia, the department must respond to the increasing threat of hitchhikers. As defined in the *Biosecurity Act 2015*, ALOP is a high level of protection aimed at reducing risk to a very low level, but not to zero. There are several options which can be explored to respond to the growing threats however they each have varying regulatory and cost impacts. This RIS will explore those options to identify the best way forward that has the least avoidable impost to businesses and consumers whilst still achieving ALOP.

The RIS is not looking at the overall costs and benefits of managing hitchhiker pests but how to shift more of the intervention activities offshore to points in the supply chain to achieve highest level of biosecurity protection and minimise unwarranted costs and delays. The options being explored in this RIS are to assist with making decisions about future costs and benefits.

Hitchhiker pests may enter Australia from different countries through many cargo pathways. The opportunistic nature of these pests makes it difficult to predict which container or cargoes might carry hitchhikers. Some insects are attracted to lights at ports and onboard vessels, others have mass swarming behaviours and can arrive in any type of good and others create nests in soil on the external surface of a container. In addition, biological features of pests, such as hiding in dark crevices and dormancy, make them particularly difficult to identify and manage. Therefore, multiple and integrated biosecurity measures are needed to manage hitchhiker pests.

Fundamental to managing biosecurity is the capability of the biosecurity system to manage risk within the context of uncertain events occurring. This is exacerbated when there are multiple threats occurring simultaneously that require risk management. In recent years, DAWE has responded to different emerging hitchhiker pests including BMSB and khapra beetle. Measures have been progressively implemented to manage BMSB since 2014, with new measures or risk countries added each year to reflect the spread of the beetle around the world. Recent measures include:

- Australia and New Zealand offshore treatment provider scheme
- Import conditions that reflect the risk of goods and country of origin
- Safeguarding arrangement schemes that recognise the ability of approved applicants to manage BMSB offshore from point of manufacture to the point of export to Australia.

The government committed \$14.5 million over 18 months at the Mid-Year Economic and Fiscal Outlook (MYEFO) 2020-21 to enable a surge response to the sudden increase of khapra beetle detections. The activities being implemented as part of the surge response build on the previous actions to manage emerging hitchhiker risks and include:

- Bans on high-risk goods imported as cargo or accompanying international travellers to prevent these pests from arriving
- Additional intervention at the Australian border to detect pests
- Offshore treatment of containers that have been identified as high risk.

These measures add to those already in place for a range of hitchhikers. The *ad hoc* approach to managing pest-by-pest has resulted in a number of measures, that operate in a disjointed way offshore and at the border. Some measures are seasonal, and some are permanent requirements that importers must meet. As many of the measures have been developed in response to a specific threat, they integrate poorly with one another.

The Inspector General of Biosecurity (IGB) has undertaken two reviews with wide-ranging recommendations relating to the significant risk of hitchhiker pests in recent years; the 2018 '*Hitchhiker pest and contaminant biosecurity risk management in Australia*' and 2019 '*Effectiveness of biosecurity measures to manage the risks of brown marmorated stink bug entering Australia*' reports. The IGB noted in the 2019 implementing recommendations report that progress relating to hitchhikers has been impeded 'due to complexity of the pathways by which the pests and contaminants arrived' and that 'The Australian biosecurity system is under too much pressure to permit the levels of external inspection (and subsequent case-by-case cleaning) of individual containers that would be needed to generate reliable information about risky countries or ports of origin.'

The IGB noted that the 'BMSB response in 2018–19 stretched Australia's border biosecurity system close to breaking point and had severe impacts on sections of the shipping and importing industries. Delays and extra costs in cargo-ship unloading and cargo release from biosecurity control were significant but unavoidable during the implementation of a complex array of measures to deal with the large numbers of arriving BMSB.' Industry submissions to the review highlighted:

- The department as an agency under pressure was unable to meet service level standards
- Processing times were delayed
- Lack of offshore treatment providers
- Inspection delays resulting in costs, for example: container detention, additional transport, storage and power, pallet hire, additional labour hire to unpack containers, delayed production and manufacturing, loss of sales and profits.

Impacts of delay – from examples provided in advice from importers

Cost impacts of delays are not widely available, however importers have provided examples that highlight the additional costs experienced in the event of a delay. These do not include the costs for inspection, testing, treatment etc that are required regardless of a delay. These costs provide an additional burden for importers as they are difficult to predict and recoup. It is important to note that the below examples are provided to represent variations in costs incurred and may not be a representation of typical costs.

Example 1: Additional costs due to inspection delay \$960. Inspection booking made three days prior to arrival of containers, but inspection is unable to be performed until five days after arrival. The containers could not be left at port area for this length of time and needed to be moved. The additional costs for three containers from the delay to obtain an inspection included transport and container lifts for \$200 per container, storage costs for three days at \$40 per container per day.

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Example 2: Additional costs due to delays with inspection and testing \$6,155. Inspection booking provided 19 days after booking, test results provided two days later. Additional storage, power & monitoring for 18 days was \$1,800, additional container detention for 17 days was \$4,355.

Consultation with the importing industry on BMSB measures has highlighted areas for attention to reduce the impact on their businesses and supply chains. These are detailed in the consultation section but in summary, changes were requested to measures that will stop pests from being shipped to Australia and for those measures to work with the supply chain. Industry feedback included:

- Expansion of the offshore treatment provider scheme to ensure more risk can be reliably mitigated offshore
- Safeguarding cargo pathways where risk is managed and assured
- Measures that avoid port congestion and vessel delays
- Expansion of the highly compliant importer program to recognise compliant businesses
- Ensuring risk modelling is consistently applied across all import pathways.

To provide greater assurance and make a significant impact to protecting Australia's biosecurity system from hitchhikers more broadly, additional measures and resources are required. The hitchhiker pest challenge confirms the need to strengthen Australia's systems for managing risk on the container cargo pathway; not only to better target high-risk movements but also to enable faster, yet safe, clearance of lower risk commodities.

3. Need for government action

The Australian Government plays a critical role in managing the risk of pests and diseases to animal, plant and human health, the environment and the economy in administering its powers under the *Biosecurity Act 2015*.

Australia's biosecurity policies aim to protect Australia against the risks that may arise from exotic pests entering, establishing and spreading in Australia, thereby threatening Australia's unique flora and fauna, as well as those agricultural industries that are relatively free from serious pests. Australian Government policies aim to identify, analyse and respond to new, emerging and changing biosecurity risk. If any risk analysis finds that biosecurity risks do not achieve the appropriate level of protection (ALOP) for Australia, risk management measures may be implemented to reduce the risks to an acceptable level. Risk analyses may be performed for new trade or where there is a change in risk. Successive Australian Governments have maintained a stringent, but not a zero risk, approach to the management of biosecurity risks. Risk analyses may take the form of a biosecurity import risk analysis (BIRA) or a review of biosecurity import requirements (such as scientific review of existing policy and import conditions, pest-specific assessments or scientific advice).

The department initiated a pest-specific risk analysis of BMSB in 2019 following the introduction of emergency measures, implemented in response to increased incidents of BMSB at the border and changes in the international status of the pest. The department's risk analysis of BMSB, '*Final pest risk analysis for brown marmorated stink bug (Halyomorpha halys)*' sets out a range of measures to manage the risk offshore and at the border to achieve an appropriate level of protection for Australia against BMSB. It should be noted that each pest provides different challenges with respect to its biology, its global distribution and propensity to spread and establish in Australia. Rather than responding to each pest as it arises a more strategic and comprehensive approach that considers how measures will work together to address the range of hitchhiker risks.

Modern approaches to biosecurity assurance and technology driven and contemporary regulatory systems are increasingly important in a global trading environment characterised by complex supply chains and ongoing uncertainty. Modernisation of the department's practices and systems will continue to manage biosecurity risk and ensure regulatory interventions are designed and implemented in the most efficient and light touch manner where possible to improve regulatory performance.

The Inspector General of Biosecurity (IGB) completed recent reviews on the *Adequacy of department's operational model to effectively mitigate biosecurity risks in evolving risk and business environments* (2020-21) and *Hitchhiker pest and containment biosecurity risk management in Australia* (2017-18). From these reports, there were a number of recommendations put forward that required government intervention to manage biosecurity risks.

Specifically, recommendation 12 from the IGB's 2020-21 report was to "improve organisational effectiveness and efficiency that will boost frontline engagement and biosecurity delivery and reduce related risks to Australia's biosecurity status". The IGB has also recommended a stronger pathway focus to managing biosecurity risk and stronger industry partnerships. Some of the measures proposed below aim towards addressing this recommendation.

To address the growing problem at hand, the actions required include -

- 1) Increasing the management of hitchhiker risk offshore before shipping containers and cargoes arriving into Australia and
- 2) Strengthening border interventions of hitchhiker risks in shipping containers and cargoes on arrival into Australia.

With additional resources and funding this can be achieved through -

- Expanding the offshore treatment provider assurance program to effectively manage offshore treatment of goods and containers bound to Australia. The program sets out the compliance requirements for treatment providers and includes assurance mechanisms and capacity-building activities to ensure the treatments are conducted effectively.
- Expanding the offshore quality systems to other higher risk ports to manage risks offshore. The offshore quality systems allow participating entities to establish approved offshore controls to manage hitchhiker risks and include assurance and capacity building activities. Containers and cargoes from compliant entities are subject to reduced intervention on arrival.
- Expanding the offshore supply chain assurance schemes to new entities to enable approved entities to manage hitchhiker risks offshore. The scheme recognises the ability of approved participants to manage hitchhiker risks from the point of manufacture to the point of embarkation and include evaluation of documented supply chain controls and other assurance activities.
- Acquiring and greater use of data and new technologies to accurately and rapidly identify which containers, suppliers or import routes should be targeted for intervention. This will ensure that low risk imports are not detained unnecessarily.
- Building a dynamic and responsive simulation model of the biosecurity system that utilises new data and intelligence to inform the prioritisation of intervention to higher risk areas and where economic or environmental impact of pests or disease would be most severe.
- Enhancing the electronic collection of pest and disease data. As well as develop new technologies such as genomic sequencing to detect pests and organic cargoes
- Expanding and improving compliance-based intervention schemes, such as the Compliance Based Intervention Scheme (CBIS), and systems recognition arrangements to reduce interventions for highly compliant import pathways and commodities across plant and animal products.
- Increasing inspections and surveillance at the border to intercept high-risk goods and containers. This will be supported by integrated ICT informed by a risk engine to ensure targeted intervention of risk imports that does not cause undue delays.

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- Expanding the use of onshore arrangements to manage any residual lower risks through a business' own systems, people and processes.

Expanding measures to manage the unacceptable risk posed by other hitchhikers without risk management and electronic system enhancements will likely result in delays and costs for importers. For example, the introduction of measures to manage BMSB originally caused delays for importers having their goods treated due to a lack of capacity - both electronic system and resourcing. The following year, the department introduced a new model and requirement for offshore treatment of BMSB, which has led to fewer delays and reduced incidents of shipments with BMSB. A new electronic system, supply chain assurance schemes and offshore treatment requirements for specific goods, were implemented which resulted in fewer delays and less detections.

The proposed framework of integrated pre-border, border and post-border activities aims to provide a holistic approach to the assessment and management of hitchhiker risks rather than focussing efforts on short-term solutions or individual controls. It also aims to provide a balance between heightened measures targeted to the highest risk pathway, with reduced or streamlined measures for compliant pathways.

4. Policy Options review

To implement a more effective and comprehensive set of biosecurity measures to manage hitchhiker pests, the department has explored a range of regulatory and policy options. All options include increased activity to respond to the increased risk of hitchhiker pests. Three feasible options have been identified in relation to responding to the increased risk of hitchhikers in shipping containers and cargoes.

The options include status quo, maintaining currently available regulatory mechanisms; an integrated regulation and supply chain solution and a voluntary industry scheme. These options start from a basis of long-standing biosecurity controls for managing pests, although the measures are further expanded and enhanced for integrated regulation and supply chain solution.

4.1 Option 1: Status quo

Under option 1, the department maintains available regulatory mechanisms to identify risk containers and cargoes, intervene and treat hitchhiker risks. No new measures are introduced, and no new data is acquired. Investment made in new technologies to detect hitchhiker pests will be unable to progress. The department will use the existing regulatory mechanisms to manage the increased risk posed by hitchhiker pests that have been developed to manage BMSB and khapra beetle, noting they differ. There are more stringent measures that apply for khapra beetle compared with BMSB due to the difference in identifying and treating these insects. Existing measures that are specific for managing hitchhikers on or within shipping containers include:

Khapra beetle requirements:

- Offshore mandatory treatments for high-risk goods and containers from risk ports, goods arriving untreated are generally directed for export on arrival
- All high-risk goods and containers subjected to increased onshore inspection rates

BMSB – seasonal (Sept-May) requirements for goods:

- Mandatory treatments for all target high risk goods from target risk countries (unless exempt), goods arriving untreated are prevented from discharge and/or directed for export on arrival
- Target risk goods will not require mandatory treatment
- All target high risk and target risk goods will be subject to increased onshore intervention through random inspection
- Importers may apply to be approved for a Safeguarding arrangements scheme that recognises the risk management processes undertaken by industry along its supply chain.
- Offshore fumigations performed under the Australia and New Zealand treatment provider scheme.

Giant African Snail:

- Mandatory intensive (six-sided) inspection unless imported under the Sea Container Hygiene System.

Under the status quo option, a myriad of measures relating to hitchhiker pests will remain for importers. This option does not allow for the integration of the BMSB safeguarding arrangements scheme, for example, with other arrangements that have been established to manage khapra beetle or giant African snail. Without integration there will be additional costs for businesses seeking to participate in an offshore arrangement as each arrangement is subject to its own application and validation processes, many of which are duplicative.

The biology of some hitchhikers means they can survive in containers for up to five years thus significantly expanding the likelihood that a container may be carrying a serious pest. Under this option, these measures will be applied to more imported containers and cargoes in response to the increased risk of hitchhiker pests. In the absence of data to more accurately target risk and high-risk containers, it is likely to mean an increase in inspections and treatments to manage risk. For importers of risk containers and cargoes there will be increased costs and delays.

The risk of a pest incursion will increase by maintaining status quo. The Australian Government is contributing to 17 national pest and disease eradication programs, that includes 10 programs for hitchhiker pests. Collectively Australian governments have committed over \$90 million for 2020-21.

Two small border incursions of khapra beetle, not associated with host commodities, occurred in 2020-21 with direct costs to importers. Agricultural industries have incurred costs of approximately \$2.5million towards the management of these minor incursions on top of the government contributions of approximately \$10 million. These costs included trapping and surveillance activities, diagnostics and scientific support for up to two years. These incursions, if not managed rapidly, threaten Australian agricultural production and agricultural export markets.

A khapra beetle incursion would significantly threaten Australia's grain industry which was valued at \$11.87 billion gross value of production in 2019-20 (GRDC), including \$7.3 billion in exports. Khapra beetle causes up to 75% loss through direct feeding, conservatively costing Australia 15.5 billion over 20 years through revenue losses arising from damaged grain in storage and exports if it became established (ABARES 2014).

The biosecurity system is already under enormous pressure with increasing detections of high priority pests such as khapra beetle and BMSB which has placed additional burden on the departments finite inspection resources. If we do nothing to reduce risk pre-border or to improve clearance of imports at the border and switch to regulating additional products under a risk-based approach, then as new products, trade volumes and emerging risks continue to increase we will see a rapid decline in our inspection resource capability. This could lead to increased post border detections and incursions, due to a lack of trained officers being available to inspect and manage complex goods and pathways. To respond to this pressure, the department may need to quickly re-deploy resources from other regulatory intervention

activities, which could further expose the department to other biosecurity risks if this isn't carefully considered or planned.

4.2 Option 2: Integrated regulation and supply chain solution

Addressing the complexity of hitchhiker pest risks due to varying biology, global distributions and supply chain management practises requires a comprehensive approach to integrate the measures. Option 2 involves a suite of integrated pre-border, border and post-border measures that focuses primarily on increasing the management of hitchhiker risk offshore before shipping containers and cargoes arrive in Australia. This option was informed by the feedback received from the importing industry on the implementation of BMSB measures and is detailed further in section 6.

This option will also implement a consistent approach to the assurances supporting offshore schemes to monitor the performance. This ensures the hitchhiker pest risk is kept offshore where possible and enables streamlined border movements of cargo for the importing industry. Importers who treat containers offshore are typically processed through the Australian border five days sooner than importers who fumigate their containers on arrival. Containers that are delayed at the border are typically subject to storage and detention charges after three days.

Managing risks offshore, where possible before they arrive in Australia enables effective management of specific risks such as mobile pests. Investing in a suite of integrated pre-border, border and post-border measures aligns with the IGB's report *'Adequacy of department's operational model to effectively mitigate biosecurity risks in evolving risk and business environments'* to "improve organisational effectiveness and efficiency that will boost frontline engagement and biosecurity delivery and reduce related risks to Australia's biosecurity status'.

Offshore strategies are proposed to target the expansion of the offshore supply chain assurance schemes. For example, there are currently only seven participants approved for the BMSB Safeguarding assurance scheme for the 2020-21 season. Despite the benefits of being part of the scheme, it applies only to imports occurring during the eight-month BMSB season, and applicants must meet stringent criteria in order to be eligible. Improvements are needed to broaden the scheme to create greater benefits for a wider industry group while still maintaining strong controls and assurance.

The offshore treatment program and offshore quality systems will also be expanded and improvements made to container hygiene to address the high level of contaminants that make containers an attractive habitat for pests through international standards and container design. Arrangements such as the Sea Container Hygiene System, which operates to ensure containers from high-risk countries manage biosecurity risks before export, has benefited importers of shipping containers.

The CBIS program enables the department to apply a lighter regulatory touch by recognising and rewarding compliant behaviour. For importers that demonstrate continuous compliance they can become eligible for the risk-based intervention scheme, which means that the department only intervenes on a percentage of eligible products. This results in savings for both the department and importing industry. The addition of commodities onto CBIS also honours the department's commitment to offer an alternative and efficient clearance process for fresh produce consignments, in place of the offshore pre-shipment inspection program that was discontinued in March 2020.

Australia has a strong cooperative relationship with other countries interested in minimising pests and diseases. It is proposed we collaborate with those other countries to monitor the global movements of hitchhikers and share intelligence. The acquisition of data from shipping lines and other industry groups operating offshore will assist Australia with understanding more fully the movements of containers so that risk containers can be more effectively targeted. This will require strong supporting systems and effective verification and assurance arrangements. Maintaining confidence in the system is critical, particularly in retaining access to export markets for agricultural producers.

Where risks cannot be managed before the goods are imported into Australia, there are a range of border interventions that will be strengthened through increased inspections and surveillance to intercept high-risk goods and containers.

To reduce the impact on importers at the border an integrated ICT application will be developed that is informed by a risk engine to ensure targeted intervention of risk imports that does not cause undue delays.

Other strategies to ensure more accurate targeting include:

- Innovative detection technologies such as eDNA technologies for rapid and accurate detection of the presence of a pest. Option 2 will build on previous investment made by the department and government to use eDNA to identify khapra beetle to implement this technology and expand the range of pests that can be detected.
- Enhanced data capture of pest, disease and container information to accurately target imports that pose hitchhiker risks.
- Enhanced data analytics including analysis of new data types such as images and genomic sequencing to identify pests rapidly and accurately.

This will be supported by more industry partnerships and engagement including:

- Increased use of industry arrangements, supported by appropriate assurance mechanisms, to manage lower risk cargoes and containers. Importers using these arrangements can expect a smoother import experience.
- Expanding and improving the CBIS and systems recognition arrangements to reduce interventions for highly compliant import pathways and commodities.
- A program of engagement with logistics companies, wholesalers and retailers to develop stronger container tracing protocols for use in the event of hitchhiker incidents.
- Greater awareness of hitchhiker risks and increased participation from industry to manage shipping container risks will assist in the management of biosecurity risks associated with other pathways.

Better confidence in our intelligence and risk settings will support stronger industry partnerships to manage supply chain risks, from the point of manufacture and export offshore to import into Australia. Consideration will be given to integrating existing arrangements to maximise the benefits of the arrangements for the importing industry and management of biosecurity pests including hitchhikers.

Where this is not possible, greater use of third-party clearance arrangements onshore will assist the movement of goods through the border. Compliant importers using these arrangements will encounter less intervention, less clearance delays and a smoother passage through the border.

Despite increased efforts, there is still a risk of an incursion due to a hitchhiker pest and this option also includes strengthened response activities to effectively manage any post border detections.

Maintaining an effective biosecurity system is critical, particularly in retaining access to export markets for our producers, the recovery of which would come at a significant cost. While there will be additional impost as the integrated regulation and supply chain is developed and initially implemented, once Option 2 has been fully implemented it is anticipated there will be an overall lower regulatory impact.

4.3 Option 3: Voluntary industry scheme

Under Option 3, the department would manage the increasing hitchhiker risk through increased information and engagement to encourage a voluntary industry-led approach to adopt stronger biosecurity controls to manage hitchhiker pests in shipping containers and cargoes. Inspections and treatments are likely to increase in response to the increased occurrence of hitchhiker pests whilst continuing to respond to any other increased biosecurity risk. For importers of non-compliant shipping containers and cargoes there will be increased costs and delays.

This option would involve greater awareness programs about the importance of maintaining container hygiene to reduce the occurrence of hitchhiker pests. Importers would be encouraged to ensure their suppliers adopt similar measures in the country of export. This scheme would not involve additional government biosecurity controls to minimise the risks, although current government intervention policies would apply. The industry scheme would involve the supply chain taking responsibility for managing the increased hitchhiker risk through voluntary self-management and reporting, supported by awareness and pest management guidance material provided by the government. The success of this option would rely on having sufficient commercial incentive for industry to invest in biosecurity risk management and to be able to demonstrate compliant performance to the department. This would come in the form of more streamlined movement through the border for those supply chains that successfully manage risk.

Awareness raising activities may assist larger organisations to incorporate biosecurity requirements into their existing quality control practices and assist in minimising biosecurity risks. However, providing enough technical and up to date information to help industry identify emerging risks will be challenging. Further, as hitchhiker pests are opportunistic pests, contamination can occur at various touch points along the supply chain and it is difficult to

provide targeted material to the relevant responsible parties within the increasingly complex and differing supply chain networks.

Whilst all Australian businesses in the import supply chain should be targeted for communication activities with messages customised for particular sectors, the success of a voluntary industry-led option is heavily dependent on contributions from all the relevant players (including offshore) in the supply-chain.

Increased education and pest risk awareness activities are currently being progressed through the International Plant Protection Convention's Sea Container Task Force (SCTF), which includes government and industry representation from a number of countries. To date the SCTF has been increasing awareness of pest risks of sea container through questionnaires, leaflets, guidelines, factsheets and best practice guides.

Whilst the SCTF has made good progress in terms of providing the necessary tools to National Plant Protection Organisations (NPPOs) and international supply chain networks to identify and manage phytosanitary risks associated with containers, as well as promoting the benefits of adopting the voluntary container risk management code (known as the CTU code), this approach has not resulted in a noticeable reduction in pest risks associated with imported containers into Australia. This experience has demonstrated the limitations associated with a voluntary approach.

5. Impact of options

Under our Regulatory Practice Statement, the department is committed to building our capability and culture as a best practice regulator and to minimising the impact of regulation where appropriate, including the recognition of entities with good compliance through reduced intervention. This delivers on the Government's broader deregulation policy objectives. To the extent possible, a quantitative and qualitative analysis of the benefit or regulatory impact of each option outlined in Section 4 are considered below.

The costs of regulation, including biosecurity cost recovery fees and charges and commercial charges are complex, depending on level of risk presented and the extent to which those risks have been managed in accordance with import conditions. Scenarios have been developed to assist with comparing the options. The costs provided below are representative and vary from port to port and between stevedores. In addition, the RIS considers the residual risk that remains after the biosecurity intervention for each option.

The cost of managing a pest incursion under Australia's nationally agreed cost-sharing arrangements is not included in the analysis below as the costs vary according to the significance of the pest, extent of incursion and agricultural sector.

5.1 Option 1 - Status quo

Benefits:

The benefits of Option 1 are that the existing measures/strategies to manage the risks will continue to apply for the importing industry (as outlined in section 4), albeit at a higher rate to manage the increased risk of hitchhiker pests.

Regulatory Impacts:

To achieve an acceptable level of protection that manages the current increasing hitchhiker risks, the level of government activity to inspect containers and impose on the importing industry to secure treatments etc would need to increase. Using the existing suite of biosecurity measures at an increased level would increase the regulatory burden on Australia's importing industry.

Previous experience with increasing BMSB interventions and the lack of available treatment options offshore and in Australia suggests there will be significant delay and congestion at Australian ports. In 2019-20 there were 2.4 million shipping containers imported into Australia. It is estimated that the department directly intervenes on around 30 percent of imported containers, including inspections, assessing certification, treatments or as part of an offshore arrangement. To manage the risk of hitchhikers this level of intervention is likely to increase significantly. In the absence of necessary data and analytic techniques it is not possible to accurately identify and target containers according to risk. In order to achieve ALOP, more containers than necessary may need to be targeted in order to manage biosecurity risk and it is

likely that interventions will not be effective if high risk containers are not accurately identified from medium or low risk containers. Interventions under this option are likely to be blunt and consequently impose greater impost through cost and delay on importing businesses and economy.

Advice from the importing industry about cost of delays and congestion experienced during 2020, due largely to trade impacted by COVID were:

- There was an average of \$500 in additional costs for each day the container and goods were delayed
- Port congestion led to containers being discharged at other ports and needing to be transported by road to the intended port – eg road transport from Melbourne to Brisbane - \$1800
- Shipping lines were not accepting bookings due to congestion and importers resorting to non-contracted alternatives to get cargo to Australia
- Congestion fees to shipping lines to enter major ports (eg USD 350 per twenty foot unit)
- Additional charges applied due to delays with department inspections including detection charges, additional transport charges
- Cancelled orders, disrupted supply chains resulting in products not making it to the shelves
- Customer complaints
- Bunkering charges for vessels unable to unload due to port delays. These costs can be considerable, for example, Shipping Australia estimates ‘the one-day cost of running a 4,500 TEU (twenty foot equivalent) vessel can currently be estimated at up to \$124,000 a day. If ships get delayed at berth because of biosecurity concerns then numerous other costs are incurred too. The overall costs and delay can be huge.’

In addition, Option 1 provides little opportunity to improve the management of risk to reduce the impost on importers. Option 1 does not enable:

- Reduction on the reliance and cost of border intervention activities including presence of departmental staff for inspection activities
- Enhancement of risk assessment and targeting of risk imports
- Activities (such as inspection) to be undertaken by industry parties
- Support for businesses to implement biosecurity risk management processes in their supply chains to manage hitchhiker risks
- Improving the confidence in treatments that are not provided under an established offshore treatment program
- Reductions to the incidence of live pest detections in imports due to application of ineffective treatments.
- Rewarding compliant importers with faster clearances
- Adoption of new technologies to improve the speed and accuracy of diagnostics.

Residual risk

An assessment of the biosecurity risk on sea containers undertaken by the department in 2016 looked at the available measures to manage external contaminants of shipping containers. It modelled levels of contamination, detections of pests or disease, trade volumes, country of origin, whether its destination in Australia was rural and whether it had been subjected to offshore or onshore measures to determine whether these controls reduced risk. The model made comparisons between differentiated risk containers. The assessment concluded that risk

reduces by an estimated 20 percent for containers subjected to the low intervention model compared with the reduction in risk of 93 percent for containers subjected to strong measures (inspection or Sea Container Hygiene System).

Under option 1 there is limited opportunity to improve targeting risk containers to identify low, medium and high-risk containers and ensure that appropriate measures are applied according to risk. In the absence of appropriate controls, particularly for medium risk containers, the residual biosecurity risk under this option is likely to be only marginally reduced for Australian agriculture.

By continuing as is, this will impact Australian importers, businesses, agricultural sectors and the community from:

- Increased backlog of goods waiting to be cleared at the border leading to supply chain disruption and potential decline in product quality or loss due to clearance delays
- Increased costs for the importing industry and consumers (bookings, transport, storage, decline in shelf life) due to border delays from increased intervention and treatment of risk containers and cargos
- Decline in confidence that the department can undertake its regulatory obligations effectively and keep up with business demand for biosecurity services
- Continuation of over regulation of products that continually demonstrate compliance with Australia's import requirements
- Increased pest detections and threat of pest outbreaks
- Increased cost in eradication efforts due to additional traceback and management activities for post border detections
- Threats to export markets due to pest outbreaks
- Increased pressures on the department to respond to industry demand for faster clearances.

5.2 Option 2: Integrated regulation and supply chain solution

Benefits:

The benefits of Option 2 are that it provides a comprehensive approach to manage the complex set of risks posed by hitchhiker pests. Under this option, more risks would be managed offshore through supply chain assurance schemes and improved treatment programs supported where necessary by a streamlined border intervention regime. The integrated solution will be supported by necessary data to more accurately identify risk and non-compliance so that intervention is targeted. New technologies will allow for more rapid detections of pests prior to export and on arrival.

This option will build on and enhance recent measures that have been implemented to manage BMSB and khapra beetle which will minimise additional change for the importing industry. It is anticipated that there will be additional impost on industry while new measures are developed and initially implemented. During the transition period this may include additional costs from

Protecting Australian agricultural production and exports from growing global hitchhiker threats

inspections and treatments and the development of industry arrangements and supply chain assurance schemes.

Consultation with the importing industry about the introduction of previous hitchhiker measures has highlighted areas where the department should focus to minimise impacts for the importing industry (detailed in section 6). Once fully implemented, there will be an overall reduction in regulatory burden for industry through reduced regulatory costs and savings resulting from targeted intervention, more risk managed offshore and faster border clearances where risks are low or have been managed.

The benefits of option 2 allow for more effective and efficient management of biosecurity risks posed by hitchhiker pests. Specifically, these benefits include:

Increased effectiveness for managing hitchhiker pests

- Effective management of risks, with higher risks either managed offshore through offshore assurance schemes or managed by accredited biosecurity officers onshore
- Regulation will be commensurate with the level of risk and compliance
- Favourable biosecurity status will provide greater export market opportunities for agricultural industries
- Biosecurity resources will be better focussed on the management of biosecurity risks that may cause more harm, resulting in effectiveness of biosecurity risk management.

Increased efficiency in managing hitchhiker pests

- Improved supply chain efficiencies due to reduced regulation
- Greater flexibility to reflect contemporary industry practice to meet increasingly complex supply chain practices
- Greater incentives for industry to comply with the regulations and to import compliant goods, resulting in overall reduction in biosecurity risks entering Australia
- Greater opportunities for industry to make use of their own people, processes, expertise and systems to manage lower risks onshore
- Reduced port congestion due to reduction in number of containers and cargoes subject to biosecurity intervention onshore.

Regulatory Impacts:

Offshore

The offshore strategies involving government to government activities in the overseas country will not impose a regulatory impact on Australian businesses or individuals. These strategies include the expansion of the offshore treatment programs and quality systems, improvements to container hygiene through international standards and container design, partnering with other countries to monitor the global movements of hitchhikers and acquisition of data from shipping lines and other industry groups operating offshore. While more analysis is needed of the data to be acquired from shipping lines, given the very small size of the Australian merchant fleet (fewer

than 15 vessels) the impacts on Australian businesses from these elements of the integrated solution will be low.

Onshore

The regulatory burden on importers of risk and high-risk containers and cargoes would be subject to various impacts depending on the risk mitigation solution that is chosen according to the risk being managed. Importers will be encouraged to have the risk of hitchhikers managed offshore wherever possible through the use of an offshore assurance program or for larger importers, through the implementation of a supply chain solution. The regulatory impacts of implementing a supply chain solution would be minimised wherever possible by leveraging commercial processes where they manage biosecurity risks. Assurance by way of high visibility of critical data and/or audits is central to the scheme operating efficiently and providing the confidence needed to allow streamlined border movements.

Where risks cannot be managed offshore, importers would be subjected to increased inspections and treatments at the border to manage high-risk goods and containers. For products that have demonstrated a good history of compliance and qualified for compliance-based inspection schemes, such as the CBIS, the department has managed to save over 67,500 hours in inspection resources, whilst continuing to manage the biosecurity risks of these goods. CBIS has saved industry more than \$13.5 million dollars in inspection fees since its introduction in 2013, and this figure will continue to grow. There are a range of products which could be deemed suitable for the CBIS program.

Residual risk

Under Option 2 there is opportunity to substantially improve targeting risk containers and cargoes to identify very low, low, medium and high-risk categories and ensure that appropriate measures are applied according to risk. The assessment of the biosecurity risk on shipping containers undertaken by the department in 2016 assessed a proposal to differentiate container risk in this way and estimated that the overall reduction in risk would be 46 percent, reflecting a modelled 13 percent increase in the department's capture of non-compliant containers.

Option 2 greatly expands the number of biosecurity controls compared to the other options modelled in the assessment. This will mean an overall reduction in residual risk under Option 2 as compared with options 1 and 3. With greater access to necessary data, Option 2 also provides for the development of a simulation model of the biosecurity system that uses data and intelligence to inform the prioritisation of intervention to higher risk areas and where pest impacts would be most severe. This will enable the department to remodel considering the additional controls to provide a more accurate estimate of the reduction in risk under Option 2.

5.3 Option 3: Voluntary industry scheme

By allowing industry to contribute to manage lower biosecurity risks through participation in a voluntary industry scheme, the benefits from option 3 are that there will be minimal additional regulatory measures for industry, where existing quality systems can be leveraged to manage biosecurity risk. As is the case with previous options the department's level of intervention will increase to respond to the increased risk of hitchhiker pests using the measures that are currently available.

Scenario: businesses participating in the voluntary industry scheme

A voluntary industry scheme participant is importing containers identified as risk and high-risk for hitchhiker pests. The business has put in place offshore controls to manage the biosecurity risks based on the biosecurity awareness and risk management material provided by the department. The company has worked with the department to identify necessary controls and has agreed to share key information about the performance of those controls. Under the voluntary scheme, containers from businesses with demonstrated ability to manage hitchhiker risk will be subject to reduced intervention on arrival – which may be as low as five percent subject to ongoing compliance.

Benefits:

The benefits of option 3 include:

- Leveraging existing industry quality systems where they can be shown to manage biosecurity risk
- Minimal additional regulatory burden for industry
- A voluntary approach can be faster to implement than regulation
- Can be tailored to supply chain specific needs and can respond to evolving business practises
- Less intervention for importers that demonstrate compliant performance through improved biosecurity management
- Greater incentives for industry to comply with import regulations and to import compliant goods, resulting in overall reduction in biosecurity risks entering Australia
- Greater flexibility to reflect contemporary industry practice to meet increasingly complex supply chain practices
- Greater opportunities for industry to make use of their own people, processes, expertise and systems to manage lower risks onshore

The success of voluntary industry schemes is reliant on industries' uptake and continued commitment. As the scheme's proposed measures would be all voluntary, a business would need to satisfy itself of the benefits in order to commit to the costs of implementing the scheme. The department would intervene less on those importers who demonstrate compliant performance based on improvements to biosecurity risks.

There are limitations associated with a voluntary approach as seen with the SCTF. Although there has not been a noticeable reduction in pest risks associated with imported containers into Australia utilising this approach, it is anticipated that increased awareness and information may improve the outcome. Unless there is a demonstratable risk reduction, it is not certain that ALOP

would be achieved. While for some businesses management of biosecurity risk will align with their objectives and provide a financial return, others may not receive sufficient financial benefit to invest in the additional controls needed.

Until an effective industry scheme is established, intervention levels would be increased to manage the risk of hitchhikers with the following impacts:

- Increased backlog of products waiting to be cleared at the border leading to supply chain disruption until a history of compliance can be shown.
- Increased costs for the importing industry and consumers (bookings, transport, storage, decline in shelf life) due to border delays from increased intervention and treatment of risk containers and cargoes, again until a history of compliance can be shown.
- Increased costs to individual business entities to establish a voluntary industry scheme requiring a bespoke change for it to be fully effective.

Residual risk

It is difficult to estimate the residual risk from the controls provided under option 3 as the extent of the biosecurity controls depend on the uptake by industry on a voluntary basis. However, large scale importers are more likely to embed biosecurity controls into their existing quality assurance systems based on the awareness and supporting material provided by the department. Assuming broad uptake of the voluntary scheme amongst large importers, the overall effectiveness of this option is still likely to be low. For example, the volume of containers imported by the top 15 importers that import cargoes with biosecurity concerns only accounts for around 2 per cent of the total containers arriving in Australia. Furthermore, based on the experience from the SCTF work, it is likely that the reduction of residual biosecurity risk will be less than what could be achieved under option 1, and far less than under option 2.

6. Stakeholder consultation

The department has extensively engaged with a range of stakeholders over the growing global threat of hitchhikers and implementation of additional measures required to manage the risk. This has included peak industry bodies, state and territory governments and trading partners through a range of meetings, direct correspondence, reports, public notifications and social media.

Recommendations and suggestions made by the importing industry have informed the policy position for managing increased hitchhiker risks as outlined in option 2. Examples of specific consultation and recommendations are detailed below.

Relevant industry bodies consulted have included Grain Producers Australia, GrainGrowers, Grain and Plant Products Export Industry Consultative Committee, Grains Industry Market Access Forum, National Farmers' Federation, Department Cargo Consultative Committee, Shipping Australia, Freight and Trade Alliance, Shipping Australia Limited, Food and Beverage Importers Association and World Shipping Council.

Biosecurity Import Supply Chain Roundtables

In February 2021, the department hosted two virtual biosecurity forums to identify issues and solutions in the delivery of biosecurity assessment and inspection services, reform priorities and biosecurity funding arrangements for the import supply chain. Departmental delegates met with 19 industry representatives across the import and logistics sector.

Industry representatives were asked to provide their top priorities for reform and for their views on current biosecurity funding arrangements. Several common themes emerged, including:

- Potential to leverage industry technology and supply chain assurance processes to manage biosecurity risks
- Need for approved arrangements to be more agile
- Authorisation for industry to undertake biosecurity activities at approved arrangement sites where the same or better biosecurity outcome can be achieved
- The complexity of the biosecurity system and how the risk profile is changing as evidenced by the recent khapra beetle incursion in cardboard packaging used for goods considered low risk which were imported from regions at a time that was also considered low risk.
- Need for multi-layered approach to intervention (machinery parts stored inside pose a different risk to large machinery stored outside)

The attendees at both forums agreed to reconvene in smaller, targeted groups over the coming weeks to identify and implement quick wins to relieve some immediate pressures and well as have further conversations on the longer-term reform of the biosecurity system before 30 June 2021.

Brown Marmorated Stink Bug (BMSB) consultation

Key stakeholders had the opportunity to comment on the Inspector General of Biosecurity's report - *Assessment of the effectiveness of biosecurity measures to manage the risks of brown marmorated stink bugs (BMSB) entering Australia*. Industries comments and recommendations included –

- An urgent need to change regulations to prevent BMSB from being shipped in cargo destined for Australia and New Zealand.
- The focus of good BMSB policy must be to stop infested cargo being shipped to Australia – not try to contain potentially infested cargo on a ship (indefinitely).
- The department to immediately increase investment in training and compliance processes relating to the Offshore BMSB Treatment Provider Scheme, to ensure that more of the biosecurity risk can reliably be mitigated offshore.
- Review BMSB risk modelling and close the holes in the patchwork of target risk countries /geographic regions. BMSB offshore treatment requirements for break bulk cargo must apply consistently to all BMSB risk countries/regions.
- Safeguard pathways for regular cargo should be considered/approved but these must be proven safe and need to be audited and guaranteed. If they are not secure, they will have the effect of avoiding the treatment requirements for the exporter and transferring the risk onto the carrier, particularly for RoRo vessel cargo
- Terminal congestion and terminal operational impact due to contaminated vessels being berthed for on-shore treatment. Solution is off-shore inspection by the department prior to vessel come along side within terminal
- Expand the Highly Compliant Importer Program (HCIP) to facilitate proven compliant traders. An expanded HCIP program should seek to streamline procedures and allow more resources to be dedicated to genuine high-risk shipments.

Recommendations and suggestions by industry were considered by the department and used to inform the policy position for managing increased hitchhiker risks as outlined in option 2. Consistent suggestions included increasing offshore treatment schemes and rewarding highly compliant importers through faster clearances.

The department also consulted widely with the importing industry about the measures to manage BMSB in the 2019 *Final pest risk analysis for brown marmorated stink bug (Halyomorpha halys)*. Feedback was also taken from the importing industry on the implementation of seasonal measures since 2014. From 2015-17, representatives from the Department visited the United States of America and Italy, which are countries where BMSB is most prevalent, along with representatives of the New Zealand Ministry for Primary Industries. These visits were conducted to consult with potentially affected stakeholders and gain a deeper understanding of BMSB treatment processes being conducted offshore to assist with the expansion of offshore treatment scheme.

Department of Agriculture, Water and the Environment Cargo Consultative Committee (DCCC)

DCCC is a committee for the department and international trade logistics service provider industries to consider practical and strategic biosecurity related international trade/logistic issues. The aim of the DCCC is to provide the department and industry with a consultative committee to ensure that effective biosecurity outcomes are delivered without unnecessary

impediments to trade by facilitating efficient and effective biosecurity regulation across the biosecurity continuum.

DCCC has been consulted regularly on the emerging issues of hitchhikers with meetings occurring at a minimum of three times per year. The importing industry was consulted during 2020 for the department's proposed management strategy for khapra beetle including emergency measures to be implemented for risk commodities and containers. [National Khapra Beetle Action Plan 2020-2030](#)

The National Khapra Beetle Action Plan 2020-2030 was developed in partnership with industry and state and territory governments to provide a national approach to how we manage the increasing threat of khapra beetle entering and establishing in Australia.

In June 2019 to support the development of the Plan, a national khapra beetle workshop was held in Melbourne with industry and government representatives. The topics covered included biology, diagnostics, treatment and responses undertaken for Khapra beetle to help close gaps in current knowledge of the pest.

A formal consultation process was undertaken on the draft Plan with jurisdictions, relevant industries and potentially affected peak bodies. Between February and March 2020 the draft Plan was also made available on the departments 'Have Your Say' website.

Plant Health Committee, which is the relevant national committee for plant biosecurity, endorsed the Plan and will oversee the Plan's implementation and monitoring on behalf of governments. Relevant peak industry bodies and research and development corporations will be engaged with implementing the Plan through their business as usual, and through consultation about potential research and development.

Some of the key action areas to be addressed over the next 10 years include -

- Conducting a new pest risk assessment of khapra beetle and maintaining appropriate regulation at the Australian border to minimise the risk and introduction into Australia.
- Assurance activities to ensure compliance following 'prohibition'
- Improve hygiene of shipping containers imported into Australia
- Reduce incidental contamination and use data to inform risk management decisions
- Build and strengthen national diagnostic capabilities

7. Best option

Option 2, the integrated regulation and supply chain solution provides the most effective approach to manage hitchhiker risks and is the best option to support government in achieving an ALOP for Australia that has the least avoidable impost to businesses and consumers.

The issues and risks outlined in section 2 of this Regulation Impact Statement, need to be addressed through the implementation of additional measures. The department is unable to ignore the high and increased risk posed by hitchhikers, therefore all proposed options have some level of impact.

ALOP is likely to be achieved under option 1, however only with significant impost on industry by way of greater border intervention and potential cost and delay. It is less certain that ALOP can be achieved under option 3. While for some businesses management of biosecurity risk will align with their objectives and provide a financial return, others may not receive sufficient financial benefit to invest in the additional controls needed. The RIS demonstrates that neither Option 1 nor Option 3 achieve an ALOP at least cost. Only option 2 maintains our biosecurity outcomes while minimising total cost on industry and government.

The comprehensive and integrated actions identified under option 2 are required to manage hitchhiker risks to achieve ALOP. An integrated regulation and supply chain solution is the most appropriate option as it will reduce regulation to industry, as well as provide Australia with a strongest safeguard against hitchhiker pests. While it is likely that some additional regulatory costs will occur in the development phase, option 2 will impose the least avoidable regulation and costs once fully implemented. Option 2 provides industry with a greater incentive to comply with the regulations and to import compliant goods, resulting in overall reduction in biosecurity risks entering Australia. For these reasons option 2 is deemed the best option.

8. Implementation and Evaluation

Implementation and evaluation of Option 2: the integrated regulation and supply chain scheme, deemed the best option, are detailed below with a focus on key activities.

The department has extensive experience in program management and will establish an appropriate cross departmental multi-disciplinary team to develop and deliver the program of work. Expertise from across the department will also be able to provide guidance and high-level input into the design and delivery.

The evaluation of the effectiveness and efficiency of the implementation of the proposed options will occur as part of the department's management of the shipping container pathway. The department has engaged the Centre of Excellence for Biosecurity Risk Analysis at Melbourne University to develop key performance indicators for this pathway, to inform the effectiveness of the department's controls. Greater use of data and analytics will assist with monitoring the performance of the individual elements and synergies of the integrated regulation and supply chain option.

The department undertakes regular engagement with the Department of Agriculture, Water and the Environment Cargo Consultative Committee (DCCC) which has representation of a range of industries and Australia Post to ensure the communication, coordination and development of risk assessment and risk management activities, including ongoing monitoring and reporting of cargo pathways and service standards.

The department will also consult with the QUADS container working group about Australia's initiatives in managing hitchhiker pest and explore opportunities for collaboration. This group was formed to collaborate on sea container management strategies between QUAD members (Australia, NZ, Canada, USA) for containers destined for these countries

8.1 Offshore assurance scheme

Risk management under offshore treatment assurance schemes is undertaken according to processes and standards that meet Australian requirements. The assurances provide a higher level of confidence compared with treatments undertaken by other providers. The department currently operates several different models for the approval of offshore treatment providers, and validation of treatments performed by those entities. Systemic introduction of offshore treatment assurance schemes for the broader management of hitchhiker pest risks would consider the following in system design and implementation:

1. The benefits and costs of individual systems and their operation.
2. The volume of exports from countries/regions of highest risk.
3. The nature of the target pests and their distribution.
4. The existence of departmental offshore assurance schemes in target risk countries/regions.

Expanded or adjusted offshore treatment assurance schemes would continue to be supported by compliance requirements for treatment providers and include greater assurance mechanisms and capacity building activities to ensure treatments are conducted effectively. Staged

implementation based on highest risk pathways, as determined through data analysis, would be most practical.

Implementation will require introduction of all, or a combination of the following system, process, and assurance components, depending on the chosen model (i.e. government to industry, or government to government):

- Development of the compliance requirements for offshore treatment providers
- Consultation on treatment assurance system operational model options
- Systems to support treatment provider registration, assessment, and approval
- Offshore government agency and treatment industry education, training, and capacity building
- Enhanced IT capability for management of registrations and 'at-border' identification of approved entity treated imports
- Ongoing compliance verification and assurance activities.

Introduction of offshore treatment assurance schemes requires sufficient lead-in time for industry and exporting country regulatory agencies to prepare for and adjust to new regulatory requirements.

The preferred option (option 2) also requires some onshore risk management capacity. Greater onshore capacity may be required during the early stages of the implementation of offshore measures. To an extent, there is capacity already present in the system in the form of existing regulatory approved arrangements (AAs). Beyond the amount of 'reserve throughput capacity' in this existing pool of AAs, additional onshore voluntary industry arrangements could be implemented by industry. Onshore management under such arrangements may involve inspection and/or treatment processes.

8.2 Better use of data and analytics

To accurately target imported shipping containers and cargoes that pose a risk of hitchhikers, the department will acquire more data of varying types and improve the quality of its data capture. Some additional data will be sourced from other government agencies and commercial parties, such as third party data aggregators. Some held by overseas entities and the department is anticipating it will be able to leverage the experience of overseas governments in accessing this information.

The department will build upon its existing analytics capability to acquire, cleanse and analyse the data. It will also incorporate new data types arising from the use of new technologies to detect hitchhikers such as images and genomic sequencing and undertake the development of a risk engine to assist with better targeting of risk containers and cargoes for intervention. The risk engine will monitor key variables and assessment assumptions and provide revised assessments to decision makers. The results of actions taken will then be fed back through the risk engine enabling further targeting refinement.

8.3 Risk and resource allocation model

A simulation model of the biosecurity system will provide a tool to monitor how the system is managing risk and test different interventions to optimise our investment. It builds on existing risk and resource allocation models to leverage data now available through previous investments in the department's data and analytics capabilities. This model will be developed through collaboration with the University of Melbourne's Centre for Excellence in Biosecurity Risk Analysis (CEBRA).

8.4 Integrated enterprise hitchhiker pest application

A new integrated enterprise hitchhiker pest application will replace disparate ICT systems that are used to manage the biosecurity risk associated with hitchhiker pests. The new application will be informed by the risk engine to ensure targeted intervention of risk imports that does not cause undue delays for importers. This initiative will streamline processes and reduce the number of aging systems and remove duplicate functionality across import pathways. It will also integrate with the department's border critical legacy systems that support a broader range of biosecurity risk management functions. The new application will enable the retirement of some existing systems that are specific to pest management.

8.5 Novel technologies - eDNA

All organisms leave traces of DNA in their surrounding environment via skin, hair, scales, faeces or bodily fluids etc. This DNA is known as environmental DNA or eDNA and can be extracted from environmental samples such as water, soil and air. Testing of eDNA provides evidence as to what is or isn't present in the environment. The department has been trialling this technology for rapid and accurate detection of the presence of a pest from the DNA material left behind will support inspections as well as by suppliers offshore. The implementation of this technology builds on the previous investment from the department's innovation program and investment to roll out this technology for khapra beetle. Once implemented it will provide a more accurate picture of hitchhiker pests arriving in Australia and more rapid detection of pests for management. A great advantage of this technology is that, once implemented, it can be used at any stage along the import pathway by government agencies or businesses.

8.6 Compliance Based Intervention Scheme (CBIS)

The CBIS program will be expanded to include documentary assessments. This will enable decisions to be made early in the assessment process allowing compliant goods to be cleared with reduced rates of intervention. It will minimise intervention by providing access to CBIS at all intervention points i.e. document assessment, inspection and treatment. These changes will be made through operational and IT system adjustments and reconfiguration.

A dedicated analytics capability and modelling capacity will also be developed to access and assess import and other data, review biosecurity risks and evaluate commodity pathways for the broader application of CBIS.

Further productivity and efficiency gains will be achieved by broadening the recognition of goods sourced and assessed through approved alternative arrangements and better integrating these approaches within the department's systems. These additional resources would ensure progressive implementation from identified low risk and highly compliant pathways to

increasingly complex pathways with correspondingly high potential efficiencies and savings can be realised by Australian industries while ensuring biosecurity requirements continue to be met.

8.7 Industry engagement

Greater awareness of hitchhiker risks and increased participation from industry to manage shipping container and cargo risks will assist in the management of biosecurity risks associated with other pathways. A program of engagement with logistics companies, wholesalers and retailers to develop stronger container tracing protocols for use in the event of hitchhiker incidents will be established. This will be achieved through consultation and engagement with the Department of Agriculture, Water and the Environment Cargo Consultative Committee (DCCC) which is the main avenue for industry and government to work on policy reforms. A subgroup of DCCC has been established last year specifically to address khapra beetle issues.

8.8 Barriers to achieving our goal

Despite the government's best efforts, there may still be a hitchhiker pest incursion in Australia. Biosecurity risks are growing due to increased global trade and travel, increased agricultural expansion and intensification, increased urbanisation close to farmlands, and other factors such as climate change. Global outlooks consistently point to these factors continuing to increase in intensity, putting Australia's biosecurity system under unsustainable pressure. There is a risk that even with ongoing investment there may still be a significant pest incursion despite additional preventative measures. Zero biosecurity risk is not attainable without stopping international travel and trade.

Key terms

Term	Definition
Approved arrangement	Approved arrangements are voluntary arrangements entered into with the Department of Agriculture, Water and the Environment. These arrangements allow operators to manage biosecurity risks and/or perform the documentary assessment of goods in accordance with departmental requirements, using their own sites, facilities, equipment and people, and without constant supervision by the department and with occasional compliance monitoring or auditing.
Biosecurity	Managing risks to Australia's economy, environment and community of pests and diseases entering, emerging, establishing or spreading in Australia.
Biosecurity measure	Biosecurity measures - Activities undertaken to manage biosecurity risks
DCCC	The Department of Agriculture, Water and the Environment Cargo Consultative Committee (DCCC) is a committee for the Department of Agriculture, Water and the Environment and international trade and international logistics service providers industries to consider practical and strategic biosecurity related international trade/logistics issues.
Pest incursion	An incursion occurs when a pest or disease has passed through the border, migrated from its original carrier and established in other hosts or host material in Australian territory.
RoRo	Roll on roll off (RoRo) vessels are designed to carry wheeled cargo such as cars, trucks, buses etc that can be driven on and off the ship.
Twenty foot equivalent	Standard unit for counting containers of various capacities and for describing the capacities of container ships or terminals. One 20 foot container equals 1 TEU. One 40 foot container equals two TEU.

References

Antony G., Scanlan J., Francis A., Kloessing K. and Nguyen Y. (2009) Revised benefits and costs of eradicating the red imported fire ant. Paper presented at the 53rd annual conference of the Australian Agricultural and Resource Economics Society, 10–13 February 2009. Cairns, Australia.

Australian Government Department of Agriculture 2019, *Final pest risk analysis for brown marmorated stink bug (Halyomorpha halys)*, Department of Agriculture, Canberra.

Australian Government Department of Agriculture, Water and the Environment 2020, *Delivering Ag230*, Department of Agriculture, Water and the Environment, Canberra

Environment and Invasives Committee 2019, *National Invasive Ant Biosecurity Plan 2018-2028* Australian Government, Canberra.

Eradication of two incursions of the Red Imported Fire Ant in Queensland, Australia By Ross Wylie, Craig Jennings, Melinda K. McNaught, Jane Oakey and Evan J. Harris

Hafi A, Morey K, and Zhang, K, 2014, *Estimation of pest and disease consequence for portfolio industries, ABARES contribution to Risk Return Resource Allocation project*, Department of Agriculture, Canberra.

Inspector-General of Biosecurity 2018, *Hitchhiker pest and contaminant biosecurity risk management in Australia*, Department of Agriculture and Water Resources, Canberra.

Inspector-General of Biosecurity 2019, *Effectiveness of biosecurity measures to manage the risks of brown marmorated stink bugs entering Australia*, Department of Agriculture and Water Resources, Canberra.

Inspector-General of Biosecurity 2021, *Adequacy of department's operational model to effectively mitigate biosecurity risks in evolving risk and business environments*, Department of Agriculture and Water Resources, Canberra.

Shipping Australia, 2021 <https://shippingaustralia.com.au/new-anti-khapra-measures-to-be-imposed-imminently-on-shipping-containers-fears-of-huge-increase-in-costs-and-delay/?nonitro=1>

Appendix 1

Potential hitchhikers: 23 of the top 42 National Priority Pests associated with containers and cargoes

RIFA and/or other exotic invasive ants
Exotic invasive snails
Khapra beetle (<i>Trogoderma granarium</i>)
Karnal bunt (<i>Telitia indica</i>)
Gypsy moth (<i>Lymantria sp.</i>)
Internal and external mites of bees (<i>Acarapis woodi</i> , <i>Tropilaelaps spp.</i> & <i>Varroa spp.</i>)
Guava/Eucalyptus rust (<i>Austropuccinia psidii</i> (exotic strains))
Airborne Phytophthora spp. (<i>P. ramorum</i> & <i>P. kernoviae</i>)
Ug99 wheat stem rust (<i>Puccinia graminis f. sp. tritici</i> (exotic strains))
Exotic bees (<i>Apis spp.</i>)
Potato cyst nematode (<i>Globodera spp.</i> including <i>G. pallida</i> , <i>G. rostochiensis</i> (exotic strains))
Texas root rot (<i>Phymatotrichum omnivorum</i>)
Panama disease (<i>Fusarium oxysporum f. sp. cubense</i> Tropical Race 4)
Cyst nematodes of cereals (<i>Heterodera spp.</i> exotic species)
Wheat stem sawfly (<i>Cephus cinctus</i> & <i>C. pygmeus</i>)
Barley stripe rust (<i>Puccinia striiformis f. sp. hordei</i> (exotic strains))
Hessian fly (<i>Mayetiola destructor</i> & <i>M. hordei</i>)
Exotic subterranean termites (<i>Coptotermes formosanus</i> & <i>C. gestroi</i>)
Exotic Tobamovirus
Potato late blight (<i>Phytophthora infestans</i> (exotic strains))
Pine pitch canker (<i>Fusarium circinatum</i>)
Grapevine leaf rust (<i>Phakopsora euvitidis</i>)
Dutch elm disease (<i>Ophiostoma novo-ulmi</i>)