

Submission to the Inspector General of Biosecurity – Review of documentation

1. Introduction and Background

I am making this submission in a personal capacity, drawing on more than three decades of experience in Australian biosecurity regulation, including senior operational and policy roles within the Department of Agriculture, Fisheries and Forestry.

Over the course of that career, I worked across both import and export regulatory systems, with responsibilities that included operational management, technical policy implementation, regulatory decision-making, market access negotiations, incident response and systems reform. My experience included periods as Branch Head of both Plant Import Operations and Plant Export Operations, along with earlier frontline and operational roles associated with the assessment and clearance of imported goods under Australia's biosecurity framework.

A recurring feature of modern biosecurity regulation is the extensive use of documentary evidence to support regulatory decisions. Imported goods are routinely referred for documentary assessment in order to establish whether particular biosecurity requirements have been met. In many cases this is entirely appropriate. Given the scale of modern trade, it would be impossible to manage Australia's biosecurity system through physical inspection or laboratory testing alone, and documentary pathways remain an essential component of efficient border management.

At the same time, the increasing complexity and volume of international trade has gradually exposed some important structural questions about the role documentation is intended to play within the broader assurance framework of Australian biosecurity regulation.

In practice, documentary requirements are often treated as though they are synonymous with assurance itself, rather than one possible means of evidencing compliance with a biosecurity requirement. This distinction matters. Some forms of documentation provide strong and reliable assurance in relation to particular risks. Others function more as administrative triage tools, or as representations that a process or treatment has occurred elsewhere within a supply chain. In some pathways, documentary evidence may provide only indirect assurance of the actual biosecurity outcome of concern.

The practical consequence is that Australia's import regulatory system has developed a large and sometimes inconsistent architecture of documentary assessment requirements without, in my view, an equally explicit or consistently articulated framework explaining:

- what level of assurance is actually being sought,
- why particular forms of evidence are considered appropriate for particular risks,
- how documentary evidence relates to other forms of assurance activity,
- and how assurance approaches should evolve in response to changing technology, trade systems and regulatory capability.

This issue is becoming increasingly important for several reasons.

First, import volumes and pathway complexity continue to increase, placing growing pressure on both regulators and industry participants involved in documentary assessment processes.

Second, advances in data analysis, digital certification systems and artificial intelligence are beginning to create realistic opportunities to improve the consistency and efficiency of documentary conformity assessment, particularly in pathways where assessment tasks are highly structured and evidentiary in nature.

Third, Australia's biosecurity system already relies, either formally or informally, on a range of assurance mechanisms extending well beyond documentation alone. These include offshore system accreditation, exporter quality systems, post-entry quarantine, randomised inspection and testing programs, treatment verification systems, intelligence-led targeting, and compliance history. However, the relationship between these mechanisms is not always clearly expressed within a unified assurance model.

Finally, the experience of recent years across government has understandably created caution regarding automated administrative decision-making and the use of technology within regulatory systems. While that caution is appropriate, it should not prevent consideration of carefully governed approaches that distinguish between automated evidentiary processing and the exercise of statutory discretion by human decision-makers.

This submission argues that Australia's biosecurity system would benefit from the development of a more explicit and contemporary assurance framework for imported goods, including clearer articulation of the relationship between:

- biosecurity requirements,
- evidence of compliance,
- the media through which evidence is provided,
- and the level of assurance required to support regulatory decision-making.

It further argues that a more mature assurance architecture would support:

- more proportionate and risk-based use of documentary requirements,
- improved consistency in regulatory assessment,
- better integration of alternative assurance mechanisms,
- and more effective use of emerging technologies within appropriate legal and governance safeguards.

The observations and recommendations contained in this submission are intended to support the continued evolution of Australia's biosecurity system as a modern, risk-based regulatory framework capable of maintaining high levels of protection while responding pragmatically to the realities of contemporary global trade.

2. Documentary Evidence and the Role of Assurance in Biosecurity Regulation

Australia's biosecurity system operates through the application of prescribed requirements to goods, pathways and activities that are considered capable of introducing or spreading pests, diseases or contaminants of biosecurity concern. Those requirements are ultimately derived from scientific assessment, technical policy judgement and Australia's broader Appropriate Level of Protection framework.

In practical terms, however, regulators do not assess biosecurity risk in the abstract. They assess whether specified requirements intended to manage that risk have been met.

For many imported goods, particularly those arriving through large-scale commercial supply chains, the primary mechanism used to establish compliance with those requirements is documentary evidence. Import permits, phytosanitary certificates, veterinary health certificates, treatment certificates, manufacturer declarations, packing declarations and a wide range of other documents are routinely used to support regulatory assessment and clearance decisions.

The use of documentation in this context is entirely rational. Modern border systems process very large trade volumes under significant operational time constraints, and many biosecurity attributes cannot realistically be determined through visual inspection alone. A consignment of processed food may appear outwardly compliant while still presenting an unacceptable disease risk if prescribed thermal processing standards were not achieved. Similarly, the absence of visible contamination on a shipping container does not necessarily establish whether timber packaging has been treated in accordance with international standards.

Documentation therefore functions as a practical means of conveying information about processes, treatments, origins, manufacturing conditions, system controls or other relevant attributes associated with imported goods.

At the same time, it is important to recognise that documentation is not, in itself, the biosecurity requirement. Nor is documentation necessarily equivalent to assurance.

This distinction is central to the issues raised in this submission.

In many parts of the import system, there is a tendency for documentary compliance to become operationally conflated with biosecurity assurance itself. Yet documentation is more accurately understood as one possible form of evidence that a prescribed requirement has been met.

The underlying requirement may relate to:

- treatment,
- processing,
- sourcing,
- manufacturing conditions,
- freedom from contamination,
- or some other risk management outcome determined through technical policy assessment.

The documentary artefact is simply the medium through which evidence of that requirement is presented to the regulator.

In practice, this distinction can be expressed through a simple conceptual framework:

- Requirement: the biosecurity condition or outcome prescribed by the regulator;
- Evidence: the information demonstrating that the requirement has been met;
- Media: the mechanism through which that evidence is conveyed.

For convenience, this submission refers to this as a Requirement-Evidence-Media, or REM, framework.

Under such an approach, the same requirement may potentially be evidenced through different forms of media depending on the nature of the pathway, the level of risk involved, the reliability of existing assurance systems and the operational context in which goods are traded.

For example, a requirement relating to pest freedom may in some circumstances be evidenced through:

- an official government certificate,
- participation in an accredited offshore systems approach,
- treatment records,
- validated exporter quality systems,
- laboratory testing,
- audit outcomes,
- or combinations of multiple assurance measures.

Likewise, some forms of documentation provide substantially stronger assurance than others.

An officially issued phytosanitary certificate linked to established international verification systems carries a different evidentiary weight to a commercial declaration generated within a private supply chain. Similarly, documentation supported by robust audit systems, traceability arrangements and compliance history may provide a much higher degree of confidence than documentation existing largely as a standalone administrative statement.

The practical problem is that these distinctions are not always clearly reflected in the structure of documentary assessment pathways themselves.

Over time, documentary requirements have accumulated across the import system for a range of operational, historical and risk management reasons. Some remain highly effective and proportionate.

Others persist largely because they are administratively familiar, because they support triage processes, or because alternative assurance mechanisms have not been fully developed or integrated into the regulatory model.

This becomes particularly relevant where documentary requirements are relied upon to provide assurance regarding matters that may not be readily verifiable through the documents themselves.

For instance, some imported processed animal products are cleared primarily on the basis of certification regarding cooking or processing standards intended to mitigate disease risk. In these cases, the document does not directly establish the biological status of the goods. Rather, it represents that specified processing conditions were achieved elsewhere within the supply chain under an accepted regulatory or manufacturing framework.

That does not mean documentary certification is inappropriate. In many cases it may remain the most practical and internationally accepted approach available. However, it does illustrate the broader point that documentary evidence frequently operates as part of a layered assurance system rather than as definitive assurance in isolation.

Importantly, Australia's biosecurity system already recognises this principle in other contexts.

Post-entry quarantine arrangements, offshore system approvals, approved arrangement audits, intelligence-led inspection targeting, randomised surveillance activities and importer compliance history all represent alternative or supplementary assurance mechanisms intended to build confidence regarding compliance outcomes.

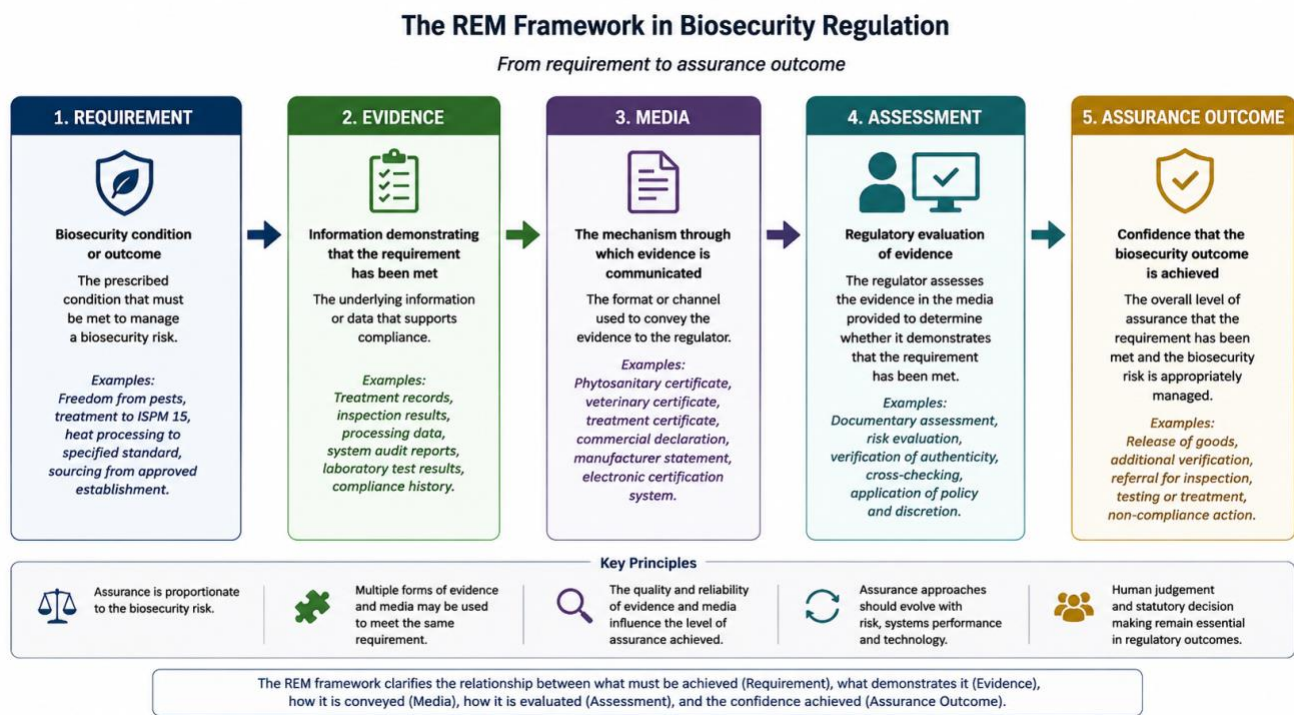
Similarly, in the human food regulatory space, the Imported Food Inspection Scheme incorporates differentiated testing and inspection rates based on product risk, historical compliance and exporter performance. The underlying principle is that assurance should be calibrated proportionately to risk and adjusted over time in response to evidence and system performance.

By comparison, aspects of biosecurity documentary assessment architecture can at times appear relatively static, with limited articulation of why particular documentary forms continue to represent the most efficient or reliable assurance mechanism for particular pathways.

This submission does not argue for the abandonment of documentary evidence. On the contrary, documentation will remain essential to the operation of any large-scale modern biosecurity system. Rather, the argument is that documentary assessment should sit within a more explicit and coherent assurance framework capable of answering several fundamental questions:

- What biosecurity outcome is actually being assured?
- What level of assurance is proportionate to the risk?
- Why is a particular evidentiary mechanism considered appropriate?
- Are there circumstances where alternative or supplementary assurance mechanisms would provide greater confidence?
- And how should evolving technologies and regulatory capabilities influence these judgements over time?

A clearer articulation of these principles would, in my view, strengthen both regulatory consistency and the long-term adaptability of Australia’s biosecurity system.



3. Current Documentary Assessment Architecture and Emerging Structural Challenges

Australia's import regulatory system has developed over many decades in response to changing trade patterns, operational pressures, emerging pest and disease risks, international obligations and successive waves of reform. The resulting documentary assessment architecture reflects that history. In many respects it remains highly effective and has contributed to the maintenance of Australia's strong biosecurity status while supporting increasingly large import volumes and complex international supply chains.

At the same time, the current system has evolved in a somewhat fragmented way, with documentary assessment arrangements differing considerably across pathways, commodities and operational environments. Some pathways rely heavily on direct departmental assessment. Others incorporate varying levels of industry participation, offshore certification, system recognition, audit assurance or automated referral logic within departmental systems.

This section does not suggest that these arrangements are inherently flawed. Rather, it argues that aspects of the existing architecture have developed incrementally and operationally, without a sufficiently **explicit overarching assurance framework** explaining why particular evidentiary approaches apply in particular circumstances, what level of assurance they are intended to achieve, and how those approaches should evolve over time.

One important feature of the current architecture is the substantial reliance placed upon documentary assessment as a frontline operational activity.

In many import pathways, goods are referred for assessment on the basis of documentation provided through customs and biosecurity reporting systems. Assessing officers, whether departmental staff or accredited industry participants operating under approved arrangements, are required to determine whether prescribed documentary conditions appear to have been satisfied before goods can proceed further within the clearance process.

Historically, this model developed for understandable reasons.

The rapid growth of containerised trade and increasing import volumes created significant operational pressures on government assessment resources. At the same time, many documentary assessments involved highly structured conformity checking activities, often focused on whether prescribed

certificates, declarations or statements were present and appeared consistent with relevant import conditions.

In this context, Australia progressively expanded the use of accredited industry arrangements permitting certain documentary assessment activities to be undertaken externally to government under approved regulatory frameworks. Licensed customs brokers operating under approved arrangements became an important component of the operational import system, particularly for lower-risk documentary pathways where standardised evidentiary requirements applied.

From an operational perspective, this approach provided substantial scalability benefits and helped manage growing trade volumes without requiring equivalent expansion of internal government assessment resources.

However, the arrangement also reinforced a broader tendency within parts of the system to conceptualise documentary assessment primarily as a document-processing function rather than as one component within a broader assurance framework.

This distinction matters because documentary assessment activities vary significantly in both complexity and evidentiary significance.

At one end of the spectrum are relatively straightforward conformity assessments involving standardised documentary requirements and low levels of interpretive judgement. Examples may include confirming the presence of prescribed declarations, verifying that mandatory fields are completed, or establishing whether specified treatment statements are present in an approved format.

At the other end are assessments requiring considerably greater technical judgement regarding:

- the interaction between multiple regulatory conditions,
- pathway-specific risk considerations,
- treatment equivalence,
- or broader contextual indicators relevant to assurance.

In practice, the distinction between these categories is not always clearly articulated within the operational architecture itself.

This has several consequences.

First, documentary assessment outcomes may become unnecessarily dependent upon individual assessor interpretation and experience, particularly where evidentiary standards are not expressed with

sufficient precision, or where policy intent has evolved over time through operational practice rather than formal redesign.

Second, similar documentary evidence may be treated differently across pathways or assessment environments, creating inconsistency for both department document assessors and industry participants.

Third, the system can gradually accumulate documentary requirements whose original assurance rationale is no longer clearly connected to contemporary pathway risks, available technologies or existing system controls.

This issue is particularly relevant where documentation is relied upon as a proxy for broader confidence in offshore production or manufacturing systems.

For example, some pathways rely heavily upon declarations or certification regarding treatment, processing or manufacturing conditions that are not routinely verified through direct biosecurity testing or inspection within Australia. In such cases, the effective assurance model may actually depend far more upon:

- confidence in offshore regulatory systems,
- exporter quality management,
- audit arrangements,
- compliance history,
- and international certification norms

than upon the documentary artefact itself.

Yet the operational focus of the assessment pathway may remain centred primarily upon the document rather than the broader assurance system supporting it.

This is not unique to biosecurity regulation. Similar dynamics exist across many modern regulatory systems managing high-volume trade and compliance environments. However, the issue becomes increasingly important as trade systems become more digitised and as expectations around regulatory efficiency, consistency and transparency continue to increase.

Another important feature of the current architecture is the coexistence of multiple assurance mechanisms which are not always conceptually integrated.

Australia's biosecurity system already incorporates:

- offshore audits and system approvals,

- approved arrangement auditing,
- intelligence-led targeting,
- random inspection,
- post-entry quarantine,
- laboratory testing,
- treatment verification,
- exporter accreditation,
- and electronic certification systems.

These mechanisms collectively contribute to overall assurance outcomes. However, their relationship to documentary assessment is not always explicitly articulated in a unified operational model.

As a result, documentary requirements can sometimes persist in pathways where:

- they may no longer represent the most efficient assurance mechanism available,
- they duplicate confidence already established through other system controls,
- or supplementary assurance mechanisms may provide stronger confidence regarding actual biosecurity outcomes.

Conversely, there are also pathways where documentary evidence alone may provide a lower level of assurance than is desirable for higher-consequence risks, particularly where claims regarding treatment or processing are difficult to independently verify.

In these circumstances, greater use of layered assurance approaches may warrant consideration.

This issue becomes increasingly significant in the context of emerging technological capability.

Modern digital certification systems, structured trade data, machine-assisted conformity assessment tools and artificial intelligence systems are beginning to create realistic opportunities to automate or semi-automate aspects of documentary conformity assessment, particularly where evidentiary rules are highly structured and standardised.

At present, however, aspects of Australia's documentary assessment architecture remain heavily dependent upon manual review processes developed in an earlier operational environment.

This creates a degree of tension within the system.

On one hand, there is increasing pressure to improve efficiency, consistency and scalability in response to growing trade complexity.

On the other, there remains understandable institutional caution regarding automation of regulatory processes, particularly where legal concerns exist regarding the inappropriate substitution of automated systems for human statutory decision-making.

In practice, many documentary assessment activities sit somewhere between these extremes. They are neither purely clerical nor purely discretionary. Rather, they involve varying combinations of:

- conformity checking,
- evidentiary evaluation,
- policy interpretation,
- and regulatory judgement.

A more mature assurance framework would assist in distinguishing between these functions and clarifying which aspects of assessment are suitable for structured automation support, which require human oversight, and which should remain fully dependent upon delegated statutory judgement.

In my view, this is one of the central structural challenges facing Australia's future biosecurity documentary assessment system.

4. Toward a Contemporary Assurance Framework for Imported Goods

As discussed in earlier sections, Australia's biosecurity system already utilises a broad range of assurance mechanisms extending well beyond documentary assessment alone. In practice, regulators routinely rely upon combinations of offshore certification systems, audit processes, treatment verification, intelligence-led targeting, importer history, post-entry quarantine arrangements and physical inspection activities in order to manage biosecurity risk across highly diverse import pathways.

What is less clearly articulated is the underlying framework through which these different assurance mechanisms are selected, weighted and combined in response to differing risk profiles and operational realities.

In many respects, the current system operates as though such a framework already exists implicitly through accumulated policy settings, operational practice and institutional experience. The difficulty is that implicit frameworks are often difficult to apply consistently, difficult to modernise systematically, and difficult to explain clearly to regulated industry, operational staff or external reviewers.

A more explicit assurance architecture would provide a clearer conceptual foundation for explaining:

- what assurance outcome is being sought,
- what evidence is required,
- why particular evidentiary mechanisms are considered appropriate,
- how multiple assurance mechanisms interact,
- and how assurance should evolve over time in response to changing risks, technologies and operational capability.

Importantly, such a framework should not assume that all biosecurity pathways require identical forms or levels of assurance.

The level of confidence required for one pathway may differ substantially from another depending upon:

- the nature and consequence of the risk,
- the likelihood of non-compliance,
- the practicality of direct verification,
- the reliability of offshore systems,
- importer and exporter compliance history,
- the availability of alternative assurance measures,
- and the operational feasibility of intervention activities.

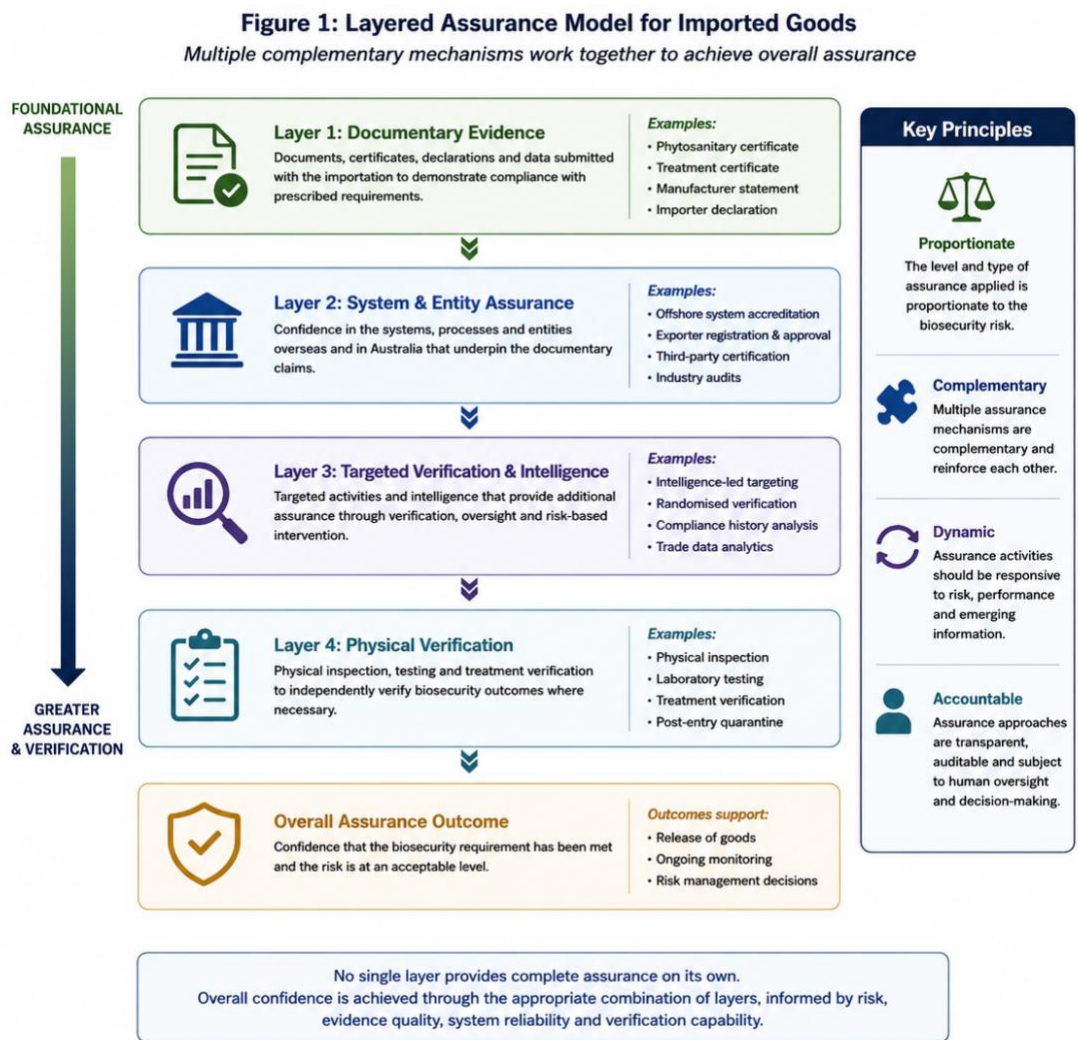
In some pathways, documentary evidence supported by established international certification systems may provide a high and proportionate level of assurance relative to the risk involved.

In others, documentation may function primarily as an efficient triage mechanism within a broader layered assurance model.

And in some higher-consequence pathways, documentation alone may provide insufficient confidence unless supplemented by additional verification activities such as inspection, audit, laboratory testing or quarantine controls.

A contemporary assurance framework should therefore move beyond the implicit assumption that documentary evidence exists primarily as a standalone regulatory endpoint.

Documentary evidence is better understood as one component within a broader evidentiary and assurance ecosystem.



This has several practical implications.

First, it supports **more proportionate and risk-based regulatory design.**

Where strong system-level assurance already exists through recognised offshore regulatory systems, validated exporter quality arrangements, robust audit regimes or consistent compliance history, there may be opportunities to reduce reliance upon repetitive low-value documentary processes that add limited incremental assurance.

Conversely, where the consequences of failure are high, or where documentary representations are difficult to independently validate, greater use of layered assurance mechanisms may be justified.

This principle already exists in parts of Australia's broader regulatory environment.

For example, the Imported Food Inspection Scheme utilises differentiated inspection and testing rates informed by product risk, historical compliance and exporter performance. The objective is not to physically test every consignment, but to calibrate assurance activities proportionately and dynamically in response to evidence and system behaviour over time.

A similar philosophy could be more explicitly incorporated into biosecurity documentary assessment architecture.

One area where this may warrant further consideration is the treatment of higher-risk processed products currently cleared primarily through documentary certification regarding manufacturing or treatment conditions.

In some cases, Australia relies heavily upon offshore certification regarding processes intended to mitigate biological risks, including cooking, heat treatment or other forms of pathogen control. While such certification may remain entirely appropriate as the primary evidentiary mechanism, there may also be value in developing targeted randomised verification programs capable of independently validating elements of the assurance system over time.

This would not necessarily require routine testing of all consignments, nor would it imply a lack of confidence in established certification arrangements. The point is that assurance is often strongest where documentary systems are periodically reinforced through independent verification capability.

Such approaches are already well established in other regulatory domains and could potentially strengthen confidence in selected higher-risk biosecurity pathways, particularly where direct inspection alone provides limited practical assurance regarding the underlying biological risk.

Second, a contemporary assurance framework should recognise that **evidence can potentially be conveyed through multiple forms of media depending upon pathway design and operational capability.**

Historically, much of Australia's documentary architecture evolved in a paper-based or document-centric operational environment. Increasingly, however, evidentiary information may be available through:

- electronic certification systems,
- structured trade data,
- interoperable government systems,
- validated exporter databases,
- audit records,
- digital traceability systems,
- and machine-readable conformity data.

This distinction between evidence and media becomes increasingly important as regulatory systems digitise.

In many circumstances, regulators may continue to require the same underlying evidence while accepting that the mechanism through which it is communicated and assessed can evolve significantly over time.

This has important implications for both operational efficiency and regulatory consistency.

Third, a clearer assurance framework would **assist in distinguishing between activities that primarily involve structured evidentiary conformity assessment and those requiring broader discretionary judgement.**

At present, aspects of documentary assessment architecture can blur these functions together operationally. But they're not identical activities.

Some assessment tasks are structured and rule-based, involving comparison of submitted evidence against prescribed conditions. Others require more substantive interpretation because of the complexity of the relevant import requirement, or because of the interplay between several relevant (but separate) import conditions. Canned goods containing meat(s) and other regulated commodities would be an example of the latter.

Clarifying this distinction is increasingly important as governments consider the appropriate use of digital assessment tools and artificial intelligence within regulatory environments.

In my view, the issue isn't whether technology should be used within documentary assessment systems. In practice, it already is. The more important question is how technology can be used appropriately within a governance framework that preserves transparency, accountability and lawful human decision-making.

The experience of Robodebt has understandably created significant institutional caution across government regarding automated administrative processes. That caution is justified. Automated systems shouldn't replace lawful statutory judgement where legislation requires human discretion or evaluative reasoning.

At the same time, there's a risk that legitimate concerns regarding unlawful automated decision-making may inadvertently discourage the development of carefully governed technologies capable of improving consistency, efficiency and evidentiary integrity within appropriate operational contexts.

Many documentary assessment activities involve structured conformity checking functions that are conceptually different from fully automated discretionary decision-making. In some pathways, machine-assisted systems may be capable of:

- validating documentary completeness,
- cross-checking consistency between evidentiary fields,
- identifying anomalies,
- comparing submissions against prescribed import conditions,
- and prioritising matters for human review.

Used appropriately, such systems could improve consistency and allow human assessors to focus more heavily upon higher-order evaluative and discretionary functions.

Importantly, this does not require removal of human accountability from the regulatory process. A mature assurance framework should explicitly preserve human responsibility for statutory judgement while recognising that structured evidentiary processing activities may increasingly benefit from technological assistance.

Finally, a contemporary assurance framework would also **provide an opportunity to reconsider the long-term operational allocation of documentary assessment functions** within the import system itself.

Historically, industry-based documentary assessment arrangements developed in response to operational realities associated with growing trade volumes and finite government assessment resources. Those arrangements may still remain appropriate in many contexts.

However, emerging technologies may alter aspects of that operational calculus over time, particularly in pathways where documentary conformity assessment becomes increasingly structured, digitised and machine-assisted.

This submission does not advocate for abrupt centralisation or removal of existing industry arrangements. It does, however, suggest that future operating models should be considered within the context of evolving assurance capability, technological maturity and the broader question of how government wishes to structure regulatory assurance functions in coming decades.

Importantly, the concept of articulating regulatory philosophy and operational rationale is already well established within the Department of Agriculture, Fisheries and Forestry.

The department currently publishes both a Compliance Policy and broader compliance posture statements intended to explain how regulatory compliance activities are approached, prioritised and exercised across the biosecurity system. These documents recognise that modern regulation benefits

from transparency regarding not only what regulators do, but why particular regulatory approaches are adopted.

Given the very substantial volume of biosecurity effort dedicated to documentary assessment activities across government and industry, there would appear to be strong value in developing a similarly explicit Documentary Assessment Framework, or broader Biosecurity Assurance Framework, capable of articulating:

- the role of documentary evidence within the import system,
- the relationship between documentary assessment and broader assurance mechanisms,
- the rationale for differing evidentiary approaches across pathways,
- the principles underpinning evidentiary confidence,
- and the circumstances in which alternative or supplementary assurance mechanisms may be appropriate.

Such a framework would assist not only policy development, but also operational consistency, industry understanding, technology integration and future regulatory reform.

Ultimately, the objective should not be to maximise documentary processing activity for its own sake. The objective should be to achieve reliable, proportionate and transparent assurance regarding biosecurity outcomes, using the combination of evidentiary mechanisms most appropriate to the risks being managed.

5. Machine-Assisted Documentary Assessment and Regulatory Decision-Making

The increasing digitisation of international trade systems is beginning to change the practical environment within which biosecurity documentary assessment occurs.

Historically, documentary assessment developed within a largely paper-based administrative model. Information was physically attached to consignments, manually reviewed by assessing officers and interpreted within operational systems designed primarily around human handling of documents and declarations.

While many elements of that model remain operationally familiar, the underlying trade environment has changed considerably.

Electronic certification systems are now widely used across a range of import pathways. Structured trade data is increasingly available through integrated customs and logistics systems. Offshore certification bodies and exporters are progressively operating within digital environments capable of transmitting machine-readable information directly into government systems. At the same time, advances in artificial intelligence and automated data analysis are rapidly increasing the capacity of systems to undertake structured evidentiary comparison, anomaly detection and conformity checking tasks at scale.

These developments create both opportunities and challenges for Australia's biosecurity system.

The opportunity lies in the potential to improve consistency, scalability and efficiency in documentary assessment activities that are highly repetitive, rules-based or structured around standardised evidentiary requirements.

The challenge lies in ensuring that any increased use of automation or machine-assisted assessment remains legally robust, operationally transparent and appropriately bounded by human oversight and statutory accountability.

This distinction is critically important.

Public discussion regarding automated government decision-making in Australia has, understandably, been heavily influenced by the Robodebt experience. That episode demonstrated the significant legal and ethical risks associated with inappropriate substitution of automated administrative processes for lawful decision-making involving statutory discretion, evaluative judgement and procedural fairness obligations.

The lessons arising from Robodebt should continue to inform caution across government.

At the same time, there is a risk that discussions regarding automation become framed in overly binary terms, as though regulatory systems must necessarily operate either through fully manual human assessment or fully autonomous machine decision-making.

In practice, modern regulatory systems already operate through combinations of:

- structured business rules,
- automated referral pathways,
- electronic validation systems,
- risk profiling,
- data matching,
- and human assessment activity.

Biosecurity import systems are no exception.

Current import processing architecture already incorporates automated referral logic determining which consignments require intervention, documentary assessment or inspection activity. In many pathways, assessing officers are effectively undertaking structured conformity checking exercises involving comparison of submitted evidence against prescribed import conditions and known policy settings.

At present, much of this work is operationally fragmented across multiple systems.

Departmental documentary assessment staff routinely use the Biosecurity Import Conditions system (BICON) as a decision-support tool when assessing submitted import documentation. In practice, this often involves assessors manually comparing documents supplied by brokers or importers against import conditions displayed separately within BICON, frequently across multiple screens or applications simultaneously.

This reflects the historical evolution of the system. BICON functions primarily as a mechanism for communicating import conditions and policy requirements to industry and assessing staff, rather than as an integrated evidentiary assessment platform.

However, the increasing digitisation of trade data creates a realistic opportunity to reconsider this architecture over time.

In future, there may be significant value in developing more integrated assessment environments capable of:

- drawing import conditions and evidentiary logic directly from BICON or successor systems,
- mapping those requirements against submitted documentary data,
- validating completeness and consistency,
- identifying missing or conflicting evidence,
- and automatically flagging matters requiring human assessment or escalation.

Conceptually, this would represent a shift from BICON operating primarily as a static policy reference system toward a more integrated regulatory assurance platform capable of supporting evidentiary assessment activities directly.

Importantly, this does not imply automated replacement of human decision-making.

In many cases, such systems would function primarily as structured conformity assessment tools, assisting officers by applying standardised evidentiary logic to high-volume documentary assessment tasks while preserving human responsibility for interpretation, escalation and statutory judgement.

This distinction remains critical.

Experienced assessors continue to play an essential role where interpretation, contextual judgement, policy application, evidentiary credibility or statutory discretion are required.

However, not all components of documentary assessment carry the same legal or operational character.

Some activities are fundamentally administrative and structured in nature. Others involve progressively greater levels of evaluative judgement.

A mature documentary assessment framework should recognise these distinctions explicitly.

For example, machine-assisted systems may be well suited to functions such as:

- validating document completeness,
- checking consistency between evidentiary fields,
- identifying missing mandatory information,
- comparing submitted content against prescribed import conditions,
- detecting anomalies or inconsistencies across multiple data sources,
- flagging unusual certification patterns,
- or prioritising higher-risk matters for human review.

These are fundamentally different activities to the exercise of delegated statutory judgement regarding equivalence, credibility, acceptable risk or discretionary decision-making under legislation.

Importantly, the use of machine-assisted conformity checking does not necessarily require the removal of human oversight from the regulatory process.

In many cases, technology may function most effectively as a decision-support or triage mechanism, allowing human assessors to focus attention on matters genuinely requiring technical interpretation, contextual judgement or escalation.

This distinction has practical implications for both regulatory consistency and workforce capability.

At present, documentary assessment outcomes can vary depending upon individual assessor experience, familiarity with particular pathways or interpretation of evidentiary requirements. Structured machine-assisted systems may help reduce some forms of inconsistency by applying standardised evidentiary logic across high-volume assessment environments.

This is particularly relevant in pathways involving:

- repetitive documentary formats,
- standardised certification structures,
- stable import conditions,
- large trade volumes,
- and clearly defined evidentiary rules.

Used carefully, machine-assisted assessment tools could potentially reduce low-value repetitive processing activity while improving auditability, traceability and consistency of evidentiary handling.

This may become increasingly important as trade volumes continue to grow and as governments face ongoing pressure to deliver efficient regulatory services without proportionate expansion in manual processing resources.

At the same time, caution is warranted against viewing artificial intelligence as a universal solution to documentary assessment challenges.

Biosecurity regulation frequently involves:

- ambiguity,
- incomplete information,
- changing pathway risks,
- evolving technical policy,
- fraud considerations,
- and contextual judgement that may not lend itself neatly to automated interpretation.

Overreliance on automation could create new forms of systemic vulnerability, particularly if systems are poorly governed, inadequately audited or deployed in pathways requiring nuanced evaluative reasoning.

There are also important transparency considerations.

Where machine-assisted systems contribute materially to regulatory assessment processes, there should be clear governance arrangements addressing:

- accountability,
- auditability,
- explainability,
- escalation pathways,
- human review mechanisms,

- and ongoing validation of system performance.

This is particularly important in regulatory environments where adverse decisions may affect commercial outcomes, market access or legal rights.

Accordingly, the issue is not whether artificial intelligence or machine-assisted systems should participate in future documentary assessment environments. That process is already underway internationally and, to varying degrees, domestically.

The more important question is how these systems should be integrated into Australia's biosecurity assurance architecture in a manner that:

- improves consistency and efficiency,
- preserves lawful human decision-making,
- maintains transparency and accountability,
- and remains proportionate to the risks associated with different import pathways.

In my view, this is another area where a more explicit Documentary Assessment Framework or Biosecurity Assurance Framework would provide substantial value.

Such a framework could help distinguish between:

- structured evidentiary processing activities,
- conformity checking functions,
- intelligence and targeting systems,
- discretionary regulatory decision-making,
- and activities requiring direct human technical assessment.

This would assist both operational reform and legal governance by clarifying where technological assistance is appropriate, where human oversight is essential, and where fully delegated statutory judgement must remain central to the process.

It would also help ensure that future reform efforts are driven by clearly articulated assurance principles rather than by either technological enthusiasm or institutional caution alone.

Ultimately, the goal should not be automation for its own sake. The goal should be a regulatory system capable of using technology intelligently to strengthen assurance outcomes, improve consistency and support human decision-making within an increasingly complex global trade environment.

6. Recommendations

The following recommendations are intended to support the development of a more coherent, transparent and contemporary assurance architecture for Australia's biosecurity documentary assessment system.

Collectively, they are directed toward strengthening evidentiary consistency, improving regulatory efficiency, supporting lawful use of emerging technologies and ensuring that documentary assessment activities remain proportionate to the biosecurity outcomes being managed.

Recommendation 1

Develop and publish a formal Biosecurity Documentary Assessment Framework

The Department of Agriculture, Fisheries and Forestry should develop and publish a formal Documentary Assessment Framework, or broader Biosecurity Assurance Framework, articulating:

- the purpose of documentary assessment within the biosecurity system,
- the relationship between documentary evidence and broader assurance mechanisms,
- the principles underpinning evidentiary confidence,
- how assurance levels are calibrated proportionately to risk,
- and the rationale for differing evidentiary approaches across import pathways.

The department already publishes compliance-oriented documents explaining broader regulatory philosophy and operational posture. Given the substantial scale of documentary assessment activity occurring across biosecurity pathways, there would be significant value in articulating a comparable framework explaining the operational and regulatory rationale underpinning documentary assessment itself.

Such a framework would improve transparency, support policy consistency and provide a clearer foundation for future operational reform.

Recommendation 2

Formally incorporate a Requirement-Evidence-Media (REM) approach into documentary assessment policy development

The department should formally recognise and apply a Requirement-Evidence-Media framework when designing, reviewing or modernising documentary assessment arrangements.

This would involve distinguishing between:

- the biosecurity requirement itself,
- the evidence required to demonstrate compliance,
- and the media through which that evidence is communicated.

Adopting this framework would support more disciplined assessment of:

- whether documentary requirements remain fit for purpose,
- whether alternative evidentiary mechanisms may provide equivalent or stronger assurance,
- and whether evolving digital systems create opportunities to modernise evidentiary processes without reducing assurance outcomes.

Recommendation 3

Review existing documentary pathways against contemporary assurance principles

The department should progressively review existing documentary assessment pathways to determine whether current evidentiary arrangements remain proportionate, efficient and aligned with contemporary assurance capability.

This review should consider:

- whether documentary requirements continue to provide meaningful assurance,
- whether they duplicate confidence already established through other system controls,
- whether alternative assurance mechanisms may provide stronger confidence,
- and whether certain documentary requirements persist primarily due to historical operational practice rather than contemporary risk management need.

Particular consideration should be given to pathways where:

- documentary evidence functions largely as a representation of offshore treatment or manufacturing processes,
- assurance relies heavily upon confidence in offshore systems,
- or supplementary verification mechanisms may materially strengthen assurance outcomes.

Recommendation 4

Expand use of layered and verification-based assurance mechanisms in higher-risk pathways

For selected higher-risk pathways, the department should consider greater use of layered assurance models incorporating combinations of:

- documentary evidence,
- audit systems,
- intelligence-led targeting,
- randomised verification activities,
- laboratory testing,
- treatment verification,
- or post-entry quarantine measures.

This is particularly relevant where documentary evidence alone provides only indirect assurance regarding the biological status or treatment condition of imported goods.

Targeted randomised verification activities may strengthen long-term confidence in documentary certification systems without requiring routine intervention against all consignments.

Recommendation 5

Develop integrated digital assessment capability linked to BICON or successor systems

The department should investigate development of integrated digital assessment environments capable of linking import conditions directly to documentary conformity assessment processes.

At present, assessing officers frequently undertake manual comparison of submitted documentation against import conditions displayed separately within BICON and related systems.

Future assessment architecture should seek to:

- integrate import condition logic directly into assessment workflows,
- automate structured conformity checking activities where appropriate,
- validate documentary completeness and consistency,
- identify anomalies and missing evidence,
- and support prioritisation of matters requiring human assessment.

Such systems should be designed to support human assessors rather than replace lawful statutory judgement.

Recommendation 6

Establish governance principles for machine-assisted documentary assessment

The department should develop explicit governance principles addressing the use of automation, artificial intelligence and machine-assisted assessment within documentary processing environments.

These principles should distinguish between:

- structured evidentiary conformity checking,
- intelligence and targeting functions,
- administrative processing,
- and discretionary statutory decision-making.

Governance arrangements should address:

- accountability,
- transparency,
- auditability,
- explainability,
- escalation pathways,
- human oversight requirements,
- and ongoing validation of system performance.

This would assist in ensuring that future technological reform occurs within clearly articulated legal and administrative boundaries.

Recommendation 7

Reassess long-term operating models for documentary assessment functions

The department should periodically review the long-term allocation of documentary assessment functions between government and external accredited industry arrangements in light of:

- evolving technology capability,
- increasing digitisation of trade systems,
- machine-assisted conformity assessment,
- and changing operational assurance models.

Historically, industry-based documentary assessment arrangements developed in response to growing trade volumes and operational resource pressures. Emerging technologies may alter aspects of that operational rationale over time.

Future operating models should therefore be assessed against contemporary assurance capability and regulatory objectives rather than historical processing assumptions alone.

Recommendation 8

Embed assurance architecture considerations into future biosecurity systems reform

Future reforms to biosecurity import systems, digital platforms and documentary assessment arrangements should explicitly incorporate assurance architecture considerations at the design stage.

This should include consideration of:

- evidentiary logic,
- system interoperability,
- digital certification capability,
- machine-readable evidentiary standards,
- auditability,
- human oversight requirements,
- and long-term scalability.

Doing so would help avoid the continued accumulation of fragmented documentary processes and support development of a more integrated and strategically coherent import assurance system over time.

7. Conclusion

Australia's biosecurity system has been highly successful in protecting the country from many of the pests, diseases and contaminants that affect agricultural production, environmental health and market access internationally. That success has not occurred by accident. It reflects decades of technical expertise, operational capability, scientific assessment and regulatory effort across both government and industry.

Documentary assessment has long formed an important part of that system.

Given the scale and complexity of modern international trade, documentation will continue to play a central role in the management of biosecurity risk. In many pathways, documentary evidence remains the most practical and proportionate mechanism available for establishing whether prescribed requirements have been met.

At the same time, the increasing complexity of trade systems, the growth of digital certification environments and the emergence of machine-assisted assessment technologies are beginning to expose some important structural questions regarding the role documentation is intended to play within the broader assurance architecture of Australian biosecurity regulation.

This submission argues that the issue is not simply whether documentary requirements should exist, nor whether automation should or should not be adopted within regulatory systems.

The more important issue is whether Australia's biosecurity system has sufficiently articulated:

- what level of assurance is being sought,
- how documentary evidence contributes to that assurance,
- why particular evidentiary mechanisms are used in particular pathways,
- and how assurance approaches should evolve over time in response to changing risks, technologies and operational realities.

At present, many of these principles exist implicitly through accumulated operational practice, policy development and institutional experience. However, the absence of a more explicit and integrated assurance framework can make it difficult to consistently evaluate documentary requirements, modernise assessment processes or clearly distinguish between evidentiary conformity checking and discretionary regulatory judgement.

The development of a formal Documentary Assessment Framework, or broader Biosecurity Assurance Framework, would provide an opportunity to address these issues systematically.

Such a framework could help:

- improve transparency and consistency,
- support more proportionate risk-based assurance models,
- strengthen integration between documentary and non-documentary assurance mechanisms,
- support lawful and carefully governed use of emerging technologies,
- and assist future reform of biosecurity operating models and assessment systems.

Importantly, this need not involve abandonment of existing documentary pathways or established operational arrangements. Much of the current system remains effective and appropriate. The objective should be refinement and clarification, not disruption for its own sake.

Equally, technological reform should not be approached as an attempt to remove human judgement from biosecurity regulation. Australia's import system will continue to require experienced officers capable of exercising technical interpretation, contextual reasoning and lawful statutory discretion.

However, there is also a growing opportunity to better align documentary assessment processes with the realities of modern trade and contemporary digital capability.

In my view, the next stage of evolution for Australia's documentary assessment system should not focus solely on the documents themselves. It should focus more broadly on the architecture of assurance within which those documents operate.

A clearer articulation of that architecture would strengthen the long-term adaptability, transparency and effectiveness of Australia's biosecurity system while helping ensure that regulatory effort remains focused on the achievement of genuine biosecurity outcomes rather than administrative process alone.

