Biosecurity Environmental Scan: Biosecurity Queensland response

Background

Biosecurity Queensland (BQ) engaged Griffith University in late 2024 to conduct an Environmental Scan.

Rather than calculate the magnitude of all risks and potential harms to the state's biosecurity, this report sought to identify:

- What are the key sociocultural factors that drive biosecurity risks in Queensland?
- What sustainable, cost-effective intelligence efforts can be deployed to ensure actions related to sociocultural drivers of biosecurity risks in Queensland are appropriately informed?

Methodology

The research involved two phases:

- **Interviews**: Semi-structured interviews with biosecurity experts were conducted to gather diverse perspectives on potential drivers and risks.
- **Desktop research**: A systematic review of all 77 Queensland Local Government Areas (LGAs) was undertaken, analysing council websites, master plans, and other relevant documents to identify planning and development activities with potential biosecurity implications. This was complemented by a review of state and regional infrastructure plans.

Key findings and recommendations

The researchers identified four key sociocultural drivers of biosecurity risk:

1. Population movement and growth
2. Community attitudes and behaviours
3. Economic and financial factors
4. Social networks and trust.

Sociocultural drivers are broadly defined as those factors that operate at the individual, community or wider population-level to influence behaviours and decisions that affect biosecurity practices.

Based on their findings, the research team developed 12 recommendations (see summary table and Appendix A) for each of the four broad risk drivers, as well as recommendations for future monitoring and any novel methodologies that could enhance the sustainability and repeatability of the exercise. Each recommendation has been assigned a RAG rating, denoting the following:

- Red: Not yet started/no action – work has either not commenced, or no work is planned to address the recommendation
- Amber: In progress – work is progressing to address the recommendation, but additional time/scope may be required
- Green: On track – the project is well progressed/complete.

It should be noted that recommendations reflect the views of the research team and are not representative of BQ's views or future work program. BQ should not be bound by these recommendations, although the RAG analysis outlined in the following table has highlighted that of the 12 recommendations:

- 1 is rated green (on track)
- 11 are rated amber (in progress).

Table 1: Summary table of recommendations, alignment to Queensland Biosecurity Strategy (QBS) themes and BQ actions

Category	QBS Theme	Action	BQ Actions	Status	Comment
Population Movement and Growth	2. Every Queenslander plays their part	Expand multilingual access to biosecurity information	Ensure CALD communities are considered in all public-facing communications campaigns	🟡 In progress	To be continually embedded in external-facing campaigns
	2. Every Queenslander plays their part	Foster strategic engagements with the high-risk creator industries	Property entry project – guidelines and education Biosecurity in the Boardroom (BITB) initiative	🟢 On track	Property entry project underway BITB event held 17 Oct; resources available online
	4. Innovation and Intelligence	Utilise demographic and planning data to model future risk areas	Socio-economic horizon scan undertaken; regional profiles being developed; internal horizon scanning capability	🟡 In progress	Data to be applied more consistently across BQ; opportunities to improve and expand horizon scanning and data capability
	3. Empowered to Act	Develop and customise urban biosecurity management plans	IP&A Backing Local Government initiatives Backyard Biosecurity project providing resources for peri-urban sector underway	🟡 In progress	Resources for local government being developed, including training packages and template plans
Community Attitudes and Behaviours	3. Empowered to Act	Partner with relevant groups to monitor consumer trends and	BQ continued participation in National Biosecurity Communications and Engagement Network (NBCEN)	🟡 In progress	Opportunity to expand research partnerships to better understand consumer trends and associated risks

Category	QBS Theme	Action	BQ Actions	Status	Comment
		promote biosecurity messaging	behavioural insights subcommittee		
	3. Empowered to Act	Engage conservation and citizen science networks in surveillance	Consider further partnerships with the conservation sector, particularly for surveillance, and continue to consider citizen science in responses	🟡 In progress	Some examples of good citizen science input to surveillance, opportunity for further partnerships
	3. Empowered to Act	Contribute to improved biosecurity awareness amongst peri-urban landholders	Biosecurity Blitz (backyard biosecurity) campaign	🟡 In progress	Project in commencement phase, delivery in 2026
Economic and Industrial Factors	2. Every Queenslander plays their part	Work with and encourage industry peak bodies representing high-risk sectors to develop biosecurity guidelines	Work with high-risk creator industries to improve/create guidelines and industry codes of practice around property entry	🟡 In progress	Work underway to establish a DPI guideline for property access rights for use by high-risk creators
		Standardise biosecurity practices across sectors through NGO collaboration	Biosecurity Partners' Forum provides an opportunity for NGOs to collaborate on biosecurity	In progress 🟡	Potential for more structured work in this space building on other aligned projects

Category	QBS Theme	Action	BQ Actions	Status	Comment
Social Networks and Trust	3. Empowered to Act	Foster community–government partnerships to co-design biosecurity solutions	Partner engagement strategy, including Partners' Fora, webinars, online ehub	🟡 In progress	Opportunities exist for community organisations to get involved in existing partner events, but further work could be done to identify and work with non-agriculture partners
Future Monitoring and Novel Methodologies	4. Innovation and Intelligence	Establish a continuous monitoring and horizon scanning system to support proactive risk analysis	Internal horizon scanning capability and teams	🟡 In progress	Opportunity exists to establish and grow BQ-wide horizon scanning capability Horizon scanning is also being coordinated through National Biosecurity Strategy deliverables
	4. Innovation and Intelligence	Leverage novel digital surveillance techniques to enhance early warning and horizon scanning	Technology innovation in surveillance	🟡 In progress	Opportunity exists to improve and increase use of innovative technologies in surveillance and horizon scanning, including data scraping

Appendix A: Full list of detailed recommendations

Population movement and growth

1)   Expand Multilingual Access to Biosecurity Information

Ensure that critical biosecurity information, including guidelines, alerts, and educational materials, is translated into a wide array of languages reflective of Australia's diverse communities and key international stakeholders. Dissemination should occur across digital, print, and in-person channels to maximise accessibility and public engagement.

2)   Foster Strategic Engagements with the High-risk Creator Industries

Explore and formalise engagement activities with creator industries (e.g., supply chain, tourism and agritourism businesses) to increase biosecurity training and awareness.

3)   Utilise Demographic and Planning Data to Model Future Risk Areas

Develop spatial risk models that integrate Australian Bureau of Statistics (ABS) population forecasts and land release data to identify potential future biosecurity hotspots. These models should inform targeted surveillance, resource allocation, and urban planning decisions at national, state, and local levels.

4)   Develop and Customise Urban Biosecurity Management Plans

Input into the design of scalable, generic urban biosecurity management frameworks that can be adapted to the specific environmental, demographic, and infrastructural contexts of rapidly growing Local Government Areas (LGAs). These plans should include measures for early detection, stakeholder coordination, and emergency response protocols

Community attitudes and behaviours

5)   Partner with Relevant Groups to Monitor Consumer Trends and Promote Biosecurity Messaging

Collaborate with relevant agencies and organisations, such as Safe Foods Queensland and producers, to better understand and monitor consumer preferences for free-range products and, where appropriate, engage with industry stakeholders to share biosecurity information and messaging.

6)   Engage Conservation and Citizen Science Networks in Surveillance

Actively engage with community conservation groups and citizen scientists to raise awareness of biosecurity threats.

7)   Contribute to Improved Biosecurity Awareness Amongst Peri-Urban Landholders

Develop (or commission the development of) a tailored awareness campaign for peri-urban landholders, focusing on their specific biosecurity risks and legal obligations. Messaging should address both practical advice and the broader importance of individual contributions to regional and national biosecurity outcomes.

Economic and industrial factors

8)   Work with and encourage industry peak bodies representing high risk sectors to develop biosecurity guidelines

Partner with industry peak bodies in high-risk sectors to encourage and co-develop practical biosecurity guidelines. Leveraging their established networks and credibility ensures clear, sector-specific standards, encourages widespread adoption, and fosters shared responsibility for stronger biosecurity outcomes.

9)   Standardise Biosecurity Practices Across Sectors Through NGO Collaboration

Work with and encourage non-government organisations (NGOs), industry associations, and community-based organisations to develop cross-sector biosecurity guidelines. This stakeholder-led collaborative approach would assist to address the current fragmentation of biosecurity regulations and practices, fostering consistency, clarity, and better compliance across both commercial and non-commercial landholders and producers.

Social networks and trust

10)   Foster Community–Government Partnerships to Co-Design Biosecurity Solutions

Establish structured mechanisms for meaningful collaboration between government agencies and local communities in the co-design of biosecurity strategies. These partnerships should engage a diverse range of stakeholders—including producers, Traditional Owners, land care groups, and community leaders—to ensure that policies are locally informed, culturally appropriate, and context-specific. Co-designed approaches can improve community buy-in, enhance policy legitimacy, and increase the effectiveness of on-the-ground implementation.

Future monitoring and novel methodologies

11)   Establish a Continuous Monitoring and Horizon Scanning System to Support Proactive Risk Analysis

DPI should consider the development and implementation of an integrated monitoring system that enables continuous risk assessment and forward-looking horizon scanning for emerging biosecurity threats. This system should draw on a range of data sources—both public and confidential (where possible)—to identify potential risks (or the escalation of known risks) before they materialise. A core component of the methodology should involve structured engagement with departmental subject matter experts (SMEs) across both operational and policy domains. By systematically eliciting insights from internal experts—through regular interviews, workshops, or expert panels—DPI can incorporate frontline observations, experiential knowledge, and discipline-specific foresight into its analytical framework. The Delphi-process is a widely used methodology for operationalising department-wide horizon-scanning and might be considered by DPI as an approach.

12)   Leverage Novel Digital Surveillance Techniques to Enhance Early Warning and Horizon Scanning

Invest in and integrate emerging digital methodologies—including artificial intelligence (AI), machine learning, natural language processing (NLP), and social media analytics—to strengthen early detection and horizon scanning capabilities for biosecurity threats. AI and NLP tools can process vast volumes of structured and unstructured data, such as trade flows, interception records, scientific literature, global news, and online forums, identifying weak signals and predictive patterns not easily captured through traditional surveillance. In parallel, social media monitoring and participatory approaches—such as citizen science platforms and community risk reporting—can provide near real-time insights into emerging risks, public sentiment, and underreported incidents. These technologies, when combined and triangulated with expert validation, will significantly expand the department's situational awareness and responsiveness to dynamic and emerging biosecurity challenges.