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National Agricultural Traceability Strategy

2023-2033 (DRAFT)

Cataloguing data

This publication (and any material sourced from it) should be attributed as: The Future Traceability Hub *National Agricultural Traceability Strategy* Canberra, xxxxxxxx. CC BY 4.0.

ISBN: xxxxxxx

This publication is available at www.haveyoursay.agriculture.gov.au/national-traceability-project.

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Foreword

[Final copy will be added upon appropriate approvals.]

Glossary

Terms	Definitions
Agribusiness	Agricultural industries covering primary producers and those businesses further along the supply chains.
Agricultural products and foods	These include raw and processed products and foods, such as meat, fibre, horticulture, dairy, eggs, forestry, grains, fertilisers, seafood and other fisheries products, honey and other bee products, oils, wine, animal by-products including skins and hides, rendered products and blood products, live animals, and animal feed.
Agricultural sector	A sector reflecting the group of primary industries involved in the production of food, fibres and forestry.
Biosecurity	Efforts to prevent, respond to and recover from pests and diseases that threaten the economy and environment.
Brand Australia	A term used to highlight the reputation of Australia's high-quality goods and services in a competitive international marketplace.
Co-design	To design (something) jointly, by working with 1 or more others.
Compliance	Adhering to requirements that are decreed by laws and regulation.
Credentials	A trusted product claim that provides assurance to consumers, governments, processors and others regarding the presence of characteristics or attributes that cannot be easily observed. Examples of agriculture credentials include: organic, carbon-neutral, free-range and sustainably-produced.
Digitisation	The process of converting, streamlining and converging analogue information into a digital format on a unified system.
FMD	Foot-and-mouth disease is a highly contagious viral disease of cloven-hoofed animals, including cattle, buffalo, camels, sheep, goats, deer, and pigs.
Food and Agriculture Organization of the United Nations (FAO)	A specialised agency of the United Nations that leads international efforts to defeat hunger, and share knowledge to improve agriculture, forestry and fisheries practices as well as ensuring good nutrition and food security for all.
GS1	An international, not-for-profit, supply chain standards organisation. It is an official issuing agency of globally unique identification codes (ISP/IEC 15459) and is recognised by the United Nations. It develops and maintains global standards for the identification, capture, sharing and use of information relating to goods moving through international and domestic supply chains – best known for its use of barcodes, RFID and other non-proprietary data carriers
Interoperable	The ability of different systems, applications or products to connect and communicate in a coordinated way, without effort from the end user.
National Traceability Framework (NTF)	A tool to guide Australian agricultural industries and food producers, governments, and related businesses in enhancing our traceability systems and promoting 'Brand Australia' in our international markets.
Premium pricing	A marketing tool to set higher prices for certain goods in the hopes that the higher price will give the impression the goods are of a higher quality.
Pressing challenges	A pressing problem, need or issue that has to be dealt with immediately.
Primary production	Those steps in the food chain up to and including storage and, where appropriate, transport of outputs of farming. This would include growing crops, raising fish and animals, and the harvesting of plants, animals or animal products from a farm or their natural habitat.
Priority Areas for Action	These are identified priorities, which will focus efforts and guide the development of broad, integrated and simultaneous action to provide a comprehensive approach and support progress towards the Strategy's vision, goal and objectives.
Provenance	The provenance of a food ingredient or commodity is the origin or source from which it comes, and the history of subsequent operations (supply chains).
Sector	In this Strategy, 'sector' refers to agriculture, public sector, private sector, other industries, professionals, the research community, and society.
Stakeholders	Any individual, group or party with an interest or concern in supply chains and can either affect or be affected by them, such as industry and consumers.

Supplier	Any party within a supply chain that is involved in the sourcing, manufacturing, or transportation of a material or product.
Traceability	The ability to follow the movement of a product through stages of production, processing, and distribution (ISO 2007). In agriculture, traceability typically refers to the tools, systems and processes that enable tracing of agricultural production, food-producing animals and products, back and forth along entire supply chains.
Traceability ecosystem	A holistic view of key stakeholders within the traceability space with varying degrees of multilateral, non-generic complementarities that are not fully hierarchically controlled.
Transparency	The relevant information that is available to all elements of the value chain in a standardised way, which allows common understanding, accessibility, clarity and comparison.

[Under development]

Purpose and scope of the Strategy

The purpose of this National Agricultural Traceability Strategy (the Strategy) is to align and maintain momentum with relevant stakeholders around a common vision for an enhanced national agricultural traceability ecosystem.

The Strategy is export-focussed and initially covers all agricultural commodities and products; live, food-producing terrestrial and aquatic animals; and other prioritised issues. It does not currently include companion animals (such as dogs and cats), nor does it address banking, finance and insurance traceability aspects.

To achieve the objectives of the Strategy over the next 10 years, a clear plan of action needs to be established, implemented, monitored and evaluated to ensure it achieves its objectives over its lifetime.

The Strategy will be implemented through a specific plan.

A national agricultural traceability vision and mission

Vision

Industry and governments have connected, aligned and interoperable world-class traceability systems along supply chains that are efficient and dynamic, to accelerate our premium Australian exports and enhance biosecurity and food safety.

Mission

Accelerate our journey exceeding $100 billion of farmgate output by 2030 and beyond through the adoption of enhanced traceability and credentials, to obtain premium prices, and mitigate biosecurity and food safety risks and any arising issues that may restrict market access.

The need for a national approach

The agricultural sector is a strong contributor to the Australian economy. Valued at $70.9 billion in 2020–21, it grew in value despite the challenges of 2020, including bushfires, drought, COVID-19 and trade disruptions (Australian Bureau of Statistics, 2022). The sector provides significant employment opportunities across regional and rural Australia, with agricultural supply chains employing roughly 1.6 million people (Department of Agriculture, Water and the Environment, 2021). Around 70% of Australia's agricultural produce is exported, providing a reliable and quality food source to our trading partners (Department of Agriculture, Water and the Environment, 2021). Of the food consumed domestically, over 90% is produced in Australia, ensuring our food security (Department of Agriculture, Water and the Environment, 2021).

Due to the value and significance of agriculture to Australia's economy, traceability systems have proven to be a critical feature of Australian agricultural supply chains. Agricultural traceability serves 3 main purposes by demonstrating to, and complying with, market access requirements of trading partners, enabling prompt response to food safety incidents, and mitigating risks related to biosecurity incursions. However, consumers and trading partners are increasingly using traceability to understand more about the products they buy, including information on provenance, authenticity, and social matters such as sustainability and animal welfare practices.

There are opportunities to raise Australia's profile (Brand Australia) and leverage market advantage, and to strengthen our agricultural sector and industries by enhancing and connecting fragmented and inconsistent legacy traceability systems. Modernising and reshaping our current systems will enable information and data to be more readily accessed and supplied to trading partners to verify food safety and other claims (e.g. sustainability and organics credentials). In the event of a biosecurity incursion or outbreak, enhanced systems can then more readily assist with reopening markets.

Extensive work on reforming our traceability systems has already taken place via the National Traceability Framework 2019 (NTF 2019), which guided Australian agricultural industries and food producers, governments and related businesses in enhancing our traceability systems and promoting Brand Australia in our international markets.

Under this Strategy, the Australian Government, industry and other relevant sectors will work together to continue these enhancements on our traceability system. The Strategy charts a common national approach to our ongoing coordination and application of priority areas for action.

The private sector and industries

The private sector and agribusinesses can assist by actively participating within the various collaborative forums to identify best practice, encourage uniformity of standards and technology, and promote uptake. Industry can also invest in research and development to ensure there is a sufficient and affordable market supply of traceability products and services to be used throughout the agricultural sector.

The public sector

Agricultural traceability is a national priority that requires the cooperation of all jurisdictions. Consequently, a coordinated effort across all levels of government – at the federal, state, and territory levels – as well as partnerships across industry sectors, will be essential.

The research community

Research and development will play a crucial role in helping to create a comprehensive, cross-commodity approach to agricultural traceability through its role in expanding the knowledge base on efficient and cost-effective traceability technologies and methodologies. Researchers, academics and funding agencies can also improve our understanding of target export markets' traceability requirements now and in the future.

Strategic national agricultural traceability approach

Delivering on the Agriculture 2030 objectives remains a key part of the government's strategy to maximise farm gate output by $100 billion with the assistance of enhanced traceability (Department of Agriculture, Water and the Environment, 2021). To support the delivery of these objectives and beyond we need strong and forward leaning national agricultural traceability systems.

The Strategy outlines a common and enduring approach to coordination of current and emerging issues, and application of the previous NFT 2019 elements.

The Strategy is relevant to work currently being undertaken by the National Biosecurity Strategy 2022-2032, the Commonwealth Biosecurity 2030, the Commonwealth Biosecurity Action Plan 2022, and Animalplan 2022-2027; Australia's National Action Plan for Terrestrial Agricultural Animal Health, all of which aim to help protect us from current and future biosecurity threats.

[Under development]

Pressing challenges, objectives, and priority areas for action

Pressing challenges

Comprehensive and long-term engagement with industry, government, and other stakeholders identified 4 key pressing challenges inspiring the creation of the Strategy.

The 4 pressing challenges include:

1. Alignment of frameworks and data standards to maximise traceability system innovation, security and interoperability including streamlined regulation.
2. Alignment of government and commercial regulatory and compliance requirements to reduce unnecessary regulatory burden to support market access and promote consistent supply chain procedures.
3. Increase traceability value-add while ensuring benefits are distributed across the supply chain to sustain market access, protect and enable agricultural exports, biosecurity and other benefits (e.g. productivity and brand building).
4. Create enduring and motivated partnerships across the whole traceability ecosystem to own and drive continued improvements and outcomes.

Objectives

The following strategic objectives respond to the 4 pressing challenges, critical trends and drivers impacting the wider agricultural sector. They will guide national and cross-sectoral ambitions by industry, government, and other stakeholders to strengthen and accelerate Australia's traceability system and capabilities.

The 8 strategic objectives are*:*

1. Improve tracking and tracing capabilities to advance export opportunities, commodity confidence and biosecurity and food safety responses.
2. Align regulatory management frameworks to reduce regulatory burden and streamline government interactions.
3. Coordinate a data-led, adaptable, traceability ecosystem to sustain and promote efficient market access.
4. Develop a national interoperable digital infrastructure to reduce interface costs.
5. Meet new and emerging product claim requirements and changing market demands to remain competitive and enhance trust.
6. Strengthen national and international collaboration and partnerships on traceability to protect Brand Australia, influence international trends, and demonstrate our world class systems.
7. Build a strong collaborative education, research, and development agenda to lift our understanding of, and responses to risks and opportunities.
8. Establish governance for future proof traceability initiatives to create transparent accountability.

Note – While these objectives have been numbered in sequential order, this does not represent their priority. All objectives are of equal importance.

Priority areas for action

A series of identified priority areas represent the range of actions needed to deliver on the 8 objectives to strengthen Australia's national agricultural traceability. For example, 1 area would be to improve tracking and tracing capabilities of the product path as well as reduce the regulatory burden on industry and government because it adds to costs. Another example is to promote appropriate regulation as an asset for agricultural trade and traceability rather than a liability, as it is often seen.

Benefits

Modelling around the highest quantifiable economic benefits, which can be derived from progressing priority areas for action against the objectives, has shown benefits could include, but not be limited to:

- Growing the value of the agricultural sector through an estimated $400 million to $1 billion in export value per year through enhanced traceability (PricewaterhouseCoopers, 2021);
- Protecting the agricultural sector through reduced costs of potential biosecurity outbreak scenarios by an estimated $59 million to $68 million per year through enhanced responses enabled by traceability (PricewaterhouseCoopers, 2021);
- Increasing efficiency in agricultural trade through:
    - reduced compliance costs of approximately $110 million to $170 million per year (PricewaterhouseCoopers, 2021); and
    - improved export administration efficiency of approximately $115 million to $155 million per year (PricewaterhouseCoopers, 2021).

Objective 1: Improve tracking and tracing capabilities to advance export opportunities, commodity confidence and biosecurity and food safety responses

There are many global developments and emerging trends which are reshaping the agricultural traceability landscape domestically and internationally. The COVID-19 pandemic revealed Australia's potential vulnerability to global supply chain disruptions. Post-pandemic, we are likely to see an even greater focus on timely, accurate and traceable data throughout the agricultural supply chain.

Globalisation and increasing trade connections across the world add complexity to the goods travelling from one area to another. Increased trade, travel and international freight volumes add greater risk with more stakeholders and information emanating from global supply chains than ever before.
The identification of biosecurity and food safety risks and potential incidents such as Lumpy Skin Disease or Foot-and-mouth disease (FMD) is becoming increasingly difficult. They can have potentially devastating, costly, and far-reaching impacts for Australia. The potential direct economic impact of a FMD outbreak over 10 years is estimated at $80 billion (Department of Agriculture, Water and the Environment, 2021).

Traceability that is at the forefront of modern agricultural policy and responds quickly and effectively to emerging risks and developments is essential for our ongoing protection. Jointly, food fraud and safety continue to be a significant issue of concern for Australia. This costs farmers between approximately $2-3 billion each year. Counterfeited, mislabelled, misrepresented, diluted, or tampered products pose significant health risk to consumers as well as reputational and financial risk to Australia and Australian producers. Strong traceability systems are increasingly expected to identify food fraud, facilitate responses to incidents, increase prevention, and mitigate food safety impacts.

Australia has an opportunity to raise its profile, further build on the international confidence that is reflected in our brand, increase market advantage by diversifying our export markets, build greater supply chain resilience, and improve our ability to meet importing requirements. An aligned and evidence-based national traceability system supports these outcomes.

Case Study

Australia's leading avocado grower and marketer, Costa Group, has teamed up with trace technology leaders, iTrazo TraceTech, to develop a Digital Traceability platform for their Lovacado avocados. Since 2021, Costa's Lovacado Shepard avocados, grown in Central Queensland, have had a QR code integrated into the fruit stickers to enhance business supply chain traceability and increase consumer engagement (Costa Group, 2021). The code can be scanned, providing real-time geolocation data to understand the farm to plate journey, enhancing trust and accountability for Costa's avocado consumers.

In summary the priority areas for action requiring next steps to deliver this objective and respond to the relevant pressing challenges include:

Priority action areas to achieve Objective 1
Conduct cross-industry data systems assessments, joint interoperability guide, national agricultural data and technology standards and sustainable investment.
Align processes to capture and use shareable data for multiple purposes and multiple regulators.
Agree on common principles focusing on 'tell us once' approach.
Develop, map and document consistent approaches to commercial traceability requirements, including new and existing voluntary codes of practice.
Develop use cases and benefits (including cost benefits) analysis to highlight improved two-way producer-consumer information flows.
Establish mechanisms (and incentives) to support industry adopt and implement interoperable, digitally mature systems.
Develop mechanisms to support industry to identify premium value creation and distribution opportunities and develop propositions for government.
Create sustainable funding for traceability initiatives based on evidence of economic and societal costs and benefits.

Objective 2: Align regulatory management frameworks to reduce regulatory burden and streamline government interactions

Stakeholders within the traceability ecosystem have expressed repeated concerns at the current state of regulations surrounding the agricultural traceability environment in Australia. Currently, regulation involves a variety of disparate, duplicative, and commercial requirements. Australian agribusinesses and their service providers navigate numerous regulatory requirements across multiple jurisdictions. They also incur unnecessary costs in configuring their systems to meet various commercial and regulatory obligations, which serve the same purpose.

Responsibilities for food and other agricultural products are spread across Australian, state and territory government ministers, departments, and portfolios. This presents challenges in the regulation of traceability systems to ensure coordination, cost effectiveness and appropriate coverage of all aspects of the supply chain.

By streamlining agricultural traceability regulations through this objective, we have the potential to deliver an industry-wide economic benefit of approximately $115 million to $155 million a year. These savings in time and costs could be achieved through better alignment of requirements and improved information sharing, as well as flexible documentation and audit requirements.

Case Study

The Australian Government is working with states and territories to remove and reduce unnecessarily duplicative regulations. The Prime Minister and Cabinet Overlapping Regulations Workplan is working towards aligning regulatory obligations nationally to assist businesses operating across borders to grow and access new markets and reduce their regulatory costs and overlapping burdens (Department of Prime Minister and Cabinet, (n.d.).

The Strategy seeks to involve all jurisdictions to work towards a common digital code for the regulation of all participants within the agricultural exports' domain.

In summary the priority areas for action requiring next steps to deliver this objective and respond to the relevant pressing challenges include:

Priority action areas to achieve Objective 2
Map data and data capture processes to identify information that can be used for brand building, productivity, regulatory, commercial, and premium pricing opportunities.
Conduct cross-industry data systems maturity assessments and jointly develop an interoperability guide, to inform the development of data and technology standards, and investment to drive a digital and data led traceability system.
Align processes so we can capture and share data for multiple purposes by ensuring it meets the similar needs of multiple regulators.
Develop and actively maintain a guide of current and future regulatory and commercial traceability requirements.
Develop consistent approaches to commercial traceability requirements, including through new and existing voluntary codes of practice.

Objective 3: Coordinate a data-led, adaptable, traceable ecosystem to sustain and promote efficient market access

Current systems across supply chains are a mixture of paper and electronic information recording, making it challenging and time consuming to access necessary data for food safety, biosecurity purposes, and import and export market needs. The creation of a transparent and traceable ecosystem helps ensure information is captured and shared in a way that saves our farmers and industries time and money.

Data often tends to sit in commercial and regulatory silos, resulting in unnecessary inefficiencies and information irregularities between supply chain partners. This is compounded by the fact that while the sophistication of traceability systems and the accessibility of traceability-related data is also increasing, there are varying levels of uptake across commodities. These disparities make it difficult to address growing expectations from industry, researchers, consumers, and governments for more visibility of information and data from across supply chains.

Case Study:

Melons Australia has been proactive in managing food safety and traceability issues that could become counter-productive to their growth and profitability in domestic and export markets. With support from the NSW Department of Primary Industries, and the Department of Agriculture, Forestry and Fisheries, Melons Australia are improving traceability within the melon industry, enhancing export competitiveness, and promoting brand Australia. Adopting digital traceability in the melon supply chain will further ensure the industry continues to be a global leader with a world-class traceability system (Singh, 2021).

There is a clear need to maintain and expand linkages and opportunities between stakeholders across all sectors to provide a nationally coordinated approach to enhancing traceability, while working together to define a consistent approach to shareable versus commercially sensitive data.

In summary the priority areas for action requiring next steps to deliver this objective and respond to relevant pressing challenges include:

Priority action areas to achieve Objective 3
Map data and data capture processes to identify information that can be used for brand building, productivity, regulatory, commercial, and premium pricing opportunities.
Conduct cross-industry data systems maturity assessments and jointly develop an interoperability guide to inform the development of data and technology standards and investment to drive a digital and data led traceability system.
Work together to define a consistent approach to shareable vs commercially sensitive data to develop a tiered assurance model reflecting the various levels of data.
Create a national interoperable digital infrastructure that integrates relevant data.

Objective 4: Deliver a national interoperable digital infrastructure to reduce interface costs

Since 2019, industry engagement has identified digital interoperability as an explicit requirement to reduce traceability costs. To highlight this, interoperability was ranked the highest priority across strategic areas identified for each pressing challenge at the inaugural 2022 National Traceability Summit.

Digital interoperability is affected by a lack of widespread adoption of best practice data standards, frameworks, or mature nationwide digital infrastructure. These gaps make it difficult for industry participants to work towards traceability interoperability.

A lack of nationwide interoperability results in supply chain participants developing systems and processes independently to serve their own needs, with interoperability being a secondary consideration.

Case study:

The Australian Government has committed $137.7 million over 4 years for the whole-of-government Simplified Trade System microeconomic reform agenda. The Simplified Trade System will streamline trade regulations, supported by modern ICT systems, and make it easier for business to interact with government. The measures will also modernise Australia's agriculture export and import systems and processes and deliver on commitments to support industry's $100 billion by 2030 and the Commonwealth Biosecurity 2030 agenda (Department of Foreign Affairs and Trade, 2021).

In summary, the priority areas for action requiring next steps to deliver this objective and respond to relevant pressing challenges include:

Priority action areas to achieve Objective 4
Conduct cross-industry data systems maturity assessments and jointly develop an interoperability guide, national agricultural data and technology standards and sustainable investment.
Work together to define a consistent approach to shareable vs commercially sensitive data to develop a tiered assurance model reflecting the various levels of data.
Develop, map and document consistent approaches to commercial traceability requirements, including new and existing voluntary codes of practice.
Develop use cases and benefits (including cost benefits) analysis to highlight improved two-way producer-consumer information flows.
Establish mechanisms (and incentives) to support industry adopt and implement interoperable, digitally mature systems.
Create a national interoperable digital infrastructure that integrates relevant data.

Objective 5: Meet new and emerging product claim requirements and changing market demands to remain competitive and enhance trust

Consumers and trading partners are driving an increase in traceability and credential requirements. There is rising consumer and market demand for certifications (such as sustainable farming, organic, Halal, and Kosher) with different export markets requiring multiple certificates and audit processes. Approaches to prove 'sustainability' attributes are becoming increasingly important in international markets, such as the European Union. Consumers want information that enables them to determine whether our products are safe and clean, and to assess whether they align to their own ethical and health values. For example, consumers are willing to pay an additional $1 per kilogram for certified 'grass fed beef' in the United States (US) market.

There is also mounting pressure for the government to strengthen oversight and monitoring of new certifications for exported goods. This is coupled with demand to assist Australian exporters by verifying compliance and enabling equivalence to international certifications, so that they can meet increased market access requirements.

As climate change continues to be at the forefront of discussions, consumers and governments in key export markets are beginning to prioritise product regulation and seek assurances about a product's carbon footprint. Traceability is an important tool to help support the agricultural sector in meeting these requirements and certify their environmental impact.

Case study:

Seafood Industry Australia has been awarded a $267,000 Australian Government grant to strengthen consumer assurances in premium seafood products. This project aims to develop and release a digital/physical experience that allows overseas consumers to verify provenance and authenticity of Australian exported seafood products. The program is part of the Australian Government's Modernising Agricultural Trade agenda to support the target of a $100 billion agricultural sector by 2030 (Seafood Industry Australia, 2021).

Australia relies heavily on its clean, green image, ensuring it is free from many of the world's damaging pests and diseases to retain the trust of consumers at home and to differentiate its products in an ever-competitive international marketplace.

The sophistication of world-wide traceability systems and the accessibility of their data is increasing pressure on federal, state and territory jurisdictions and other ecosystem stakeholders to not only keep pace with requirements and system sophistication, but to set the pace and lead expectations to remain competitive and enhance trust.

In summary the priority areas for action requiring next steps to deliver this objective and respond to relevant pressing challenges include:

Priority action areas to achieve Objective 5
Align processes to capture and use shareable data for multiple purposes and multiple regulators.
Develop and actively maintain a guide of current and future regulatory and commercial traceability requirements.
Agree on common principles to guide legislators and regulators, with a focus on promoting 'tell us once' approaches, including through mutual recognition and regulatory technology trials.
Develop mechanisms to support industry to identify premium value creation and distribution opportunities and develop propositions for government.

Objective 6: Strengthen national and international collaboration and partnerships on traceability to protect Brand Australia, influence international trends, and demonstrate our world class systems

Australia's key international trading partners are proactively enhancing and integrating their domestic traceability systems and improving the ability of their exporters to differentiate their products to unlock and claim premium pricing and value.

Through improved domestic cooperative arrangements, Australia should take a similar approach to improving its broader systems rather than making incremental adjustments for specific commodities.

There is an expansive volume of national agricultural traceability initiatives underway across the whole ecosystem, including, but not limited to, data standards development, market access retention/initiatives, education programs, technology trials and credentials development.

Case study:

An agreement was reached between the Australian and US governments that the meat industry's new 'Meat Messaging System', using GS1 standards, would be the simplest solution for verification of Australian meat exports to the US. The Meat Messaging System is a secure 'cloud' industry portal, where exporters upload their consignment information and authorised users access details about the consignment (GS1 2022). The process provides a simple, low-cost, independent, US government-recognised reconciliation system that can be used to verify providence.

Each Australian state and territory are progressing distinct traceability work programs around biosecurity tracking, regulatory mapping, international engagement, and investment targeting. Without nationally coordinated leadership and alignment, there is a risk of these initiatives and work programs overlapping and efforts being duplicated. Additionally, increased multilateral consideration of agricultural traceability issues could provide a platform for Australia to undertake a leadership role in developing new rules and norms. This could eventually provide the basis for a common international approach.

A way to achieve this is through forging proactive international partnerships, which enable active participation in the development of multilateral rules and standards.

In summary the priority areas for action requiring next steps to deliver this objective and respond to relevant pressing challenges include:

Priority action areas to achieve Objective 6
Conduct cross-industry data systems maturity assessments and jointly develop an interoperability guide to inform the development of data and technology standards and investment to drive a digital and data led traceability system.
Develop and actively maintain a guide of current and future regulatory and commercial traceability requirements.
Develop consistent approaches to commercial traceability requirements, including through new and existing voluntary codes of practice.
Create a national interoperable digital infrastructure that integrates relevant data.
Create sustainable funding for traceability initiatives based on evidence of economic and societal costs and benefits.
Develop and implement a coordinated traceability communication and education campaign to strengthen public and political awareness and champion the importance of traceability.
Maintain and expand linkages and opportunities between stakeholders across all sectors to provide a nationally coordinated approach to enhancing traceability.
Promote the importance of traceability to regional neighbours and engage in related initiatives to build regulatory and other capacity internationally.
Influence the global agenda by active engagement and collaboration with other countries, multilateral organisations and forums.

Objective 7: Build a strong collaborative education, research, and development agenda to lift our understanding of, and responses to, risks and opportunities

Better directing investment, coordinating research, and invigorating educational programs has also been a longstanding objective of the national agricultural traceability work program, including the broader efforts of the traceability ecosystem.

This objective recognises the need to continue to enhance awareness, trust and understanding between industry, government and other stakeholders on an agreed shared vision upon which investment can be focussed, complementary initiatives can be dove-tailed, and a better understanding of respective public-private benefits reached. Research and development (R&D) is critically important in achieving comprehensive, cost-effective, commodity-based traceability through improved technologies and methodologies. R&D will play a crucial role in expanding the knowledge base on such efficient and cost-effective traceability technologies and methodologies.

Researchers, academics and funding agencies can also improve our understanding of traceability requirements for target export markets now and into the future.

Case study:

The Commonwealth Scientific and Industrial Research Organisation (CSIRO) is working with the government, universities, industry and the community to bolster Australia's COVID-19 recovery and build long term resilience. CSIRO's Missions Program is focused on solving 6 challenges we face as a nation – from health and food security and quality to national security, the resilience of our environment, the sustainability of our energy and resources, and the future of our industries. All missions have ambitious and far-reaching goals that encourage and require collaborative partnerships to deliver each of them The Trusted Agrifood Exports Mission directly relates to agricultural traceability. (The Commonwealth Scientific and Industrial Research Organisation, (n.d.).

Australia has some of the world's leading agricultural scientists and R&D corporations. Our approach to Covid-19 and FMD preparedness has relied on the best scientific and biosecurity advice. This expertise should be harnessed into a national R&D Agenda to focus and coordinate all efforts on key issues and to avoid duplication.

There is also a lack of understanding on the part of some stakeholders about the agricultural traceability system and the important role it plays in building trust, meeting customer expectations and building value across the entire supply chain. Tailored education and marketing campaigns should be developed which improve stakeholders' understanding and advertise the benefits from collectively employing interoperable traceability systems.

In summary the priority areas for action requiring next steps to deliver this objective and respond to relevant pressing challenges include:

Priority action areas to achieve Objective 7
Conduct cross-industry data systems maturity assessments and jointly develop an interoperability guide to inform the development of data and technology standards, and investment to drive a digital and data led traceability system.
Agree on common principles to guide legislators and regulators, with a focus on promoting 'tell us once' approaches, including through mutual recognition and regulatory technology trials.
Develop, map and document consistent approaches to commercial traceability requirements, including through new and existing voluntary codes of practice.
Develop use cases and benefits (including cost benefits) analysis to highlight improved two-way producer-consumer information flow.
Establish the governance arrangements and operating model for the Agricultural Traceability Alliance, Traceability Hub.
Develop and implement a coordinated traceability communication and education campaign to strengthen public and political awareness and champion the importance of traceability.
Maintain and expand linkages and opportunities between stakeholders across all sectors to provide a nationally coordinated approach to enhancing traceability.
Set a flexible national traceability research and development agenda that strives for innovation and coordinates activities.

Objective 8: Establish clear governance for future proof traceability initiatives to create transparent accountability

Successive consultation, particularly over the course of the 2022 National Traceability Summit, has indicated that establishing good governance is foundational to addressing the pressing challenges and delivering the priority areas for action. This was noted in the case of the data challenge where Summit participants were of the view that governance needed to sit around the application of consistent data standards, and with respect to, incentive mechanisms (i.e. managing government grants programs).

Case study:

The Department of Agriculture, Forestry and Fisheries is designing a modern streamlined web-based exports traceability system to support overseas market access for exports of agricultural products. The program includes developing a new export documentation system using QR codes, modernising existing IT system platforms, an export establishment registration database, the Tracking Animal Certification Exports system, and enhancements to the Plant Exports Management System. These activities will strengthen Australia's reputation as a provider of high-quality agricultural commodities, underpinned by strong, digitally enhanced services and regulatory practices. This will allow industry to be more competitive in international markets by reducing regulatory costs, while maintaining our strong regulatory reputation (the Department of Agriculture, Forestry and Fisheries, 2022).

In the interests of efficiency and avoiding duplication, there is a clear goal to strive for shared responsibility that promotes and maintains continuous improvement in the traceability ecosystem, and ensures and validates the focus on key deliverables. There is also a need for accountability and transparency at the national, jurisdictional and local levels with agricultural traceability. All sectors are encouraged to participate in enhancements under this Strategy to secure the best outcomes from a nationally coordinated approach.

In summary the priority areas for action requiring next steps to deliver this objective and respond to relevant pressing challenges include:

Priority action areas to achieve Objective 8
Establish the governance arrangements and operating model for the Agricultural Traceability Alliance, Traceability Hub.
Create sustainable funding for traceability initiatives based on evidence of economic and societal costs and benefits.
Maintain and expand linkages and opportunities between stakeholders across all sectors to provide a nationally coordinated approach to enhancing traceability.

Measuring success

A monitoring and evaluation framework will be developed to assess whether the Strategy has met its goals and the reasons for the success or otherwise. The key performance indicators and data sources for measuring the effectiveness of progress will be developed in line with relevant stakeholders.

References [Under development]

Australian Bureau of Statistics, 2022, *Value of Agricultural Commodities Produced, Australia,* Australian Bureau of Statistics, viewed 23 August 2021, < https://www.abs.gov.au/statistics/industry/agriculture/value-agricultural-commodities-produced-australia/latest-release>

Costa Group, 2021, *Track your Avocado Journey,* Costa Group, viewed 23 August 2022, <https://costagroup.com.au/2021/03/22/track-your-lovacado-journey/>

Department of Agriculture, Water and the Environment, 2021, *Delivering Ag2030,* Department of Agriculture, Forestry and Fisheries, viewed 24 August 2022, <https://www.agriculture.gov.au/sites/default/files/documents/ag-2030.pdf>

Department of Agriculture, Water and the Environment, 2021, *Commonwealth Biosecurity Strategy 2030,* Department of Agriculture, Forestry and Fisheries, viewed 24 August 2022, https://www.agriculture.gov.au/sites/default/files/documents/commonwealth-biosecurity-2030.pdf

Department of Agriculture, Water and the Environment, 2022, *Next Export Documentation System (NEXDOC),* Department of Agriculture, Forestry and Fisheries, viewed 6 September 2022, https://www.agriculture.gov.au/biosecurity-trade/export/certification/nexdoc

Department of Foreign Affairs and Trade, 2022, *Simplifying Australia's trade system*, Department of Foreign Affairs and Trade, viewed 24 August 2022, <https://www.dfat.gov.au/about-us/publications/trade-investment/business-envoy/business-envoy-february-2022/simplifying-australias-trade-system>

Department of Prime Minister and Cabinet, (n.d.), *Streamlining overlapping regulations,* Department of Prime Minister and Cabinet, viewed 24 August 2021, <https://deregulation.pmc.gov.au/priorities/streamlining-overlapping-regulations/workplan>

GS1 Australia, 2022, Meat Messaging, viewed 24 August 2022, <https://www.gs1au.org/what-we-do/solution-providers/find-a-solution-provider/associate-alliance-partner/meat-messaging

International Standards Organisation, 2007, *Traceability in the feed and food chain — General principles and basic requirements for system design and implementation, 22005:2007,* International Standards Organisation, viewed 2022, https://www.iso.org/obp/ui/#iso:std:iso:22005:ed-1:v1:en

PricewaterhouseCoopers, 2021, *Future Traceability Project Showcase 10, presentation prepared for the Department of Agriculture, Water and the Environment,* PricewaterhouseCoopers, viewed 24 August 2022.

Seafood Industry Australia, 2021, *Seafood Industry Australia builds trust in brand Australia through seafood traceability initiative,* Seafood Industry Australia, viewed 24 August 2022, https://seafoodindustryaustralia.com.au/seafood-industry-australia-builds-trust-in-brand-australia-through-seafood-traceability-initiative/#:~:text=The%20program%20is%20part%20of,projects%20under%20the%20Traceability%20Grants.

Singh Dr. S.P., 2021, *Australian Melon Industry Status Report on Traceability 2021,* NSW Department of Primary Industries, viewed 6 September 2022, https://secureservercdn.net/198.71.233.156/exm.9c1.myftpupload.com/wp-content/uploads/2021/04/Traceability-Status-Report-2021-NSW-DPI.pdf

The Commonwealth Scientific and Industrial Research Organisation, (n.d), *Partner with us to tackle Australia's greatest challenges,* The Commonwealth Scientific and Industrial Research Organisation, viewed 30 August 2022, https://www.csiro.au/en/about/challenges-missions

The Commonwealth Scientific and Industrial Research Organisation, (n.d), *Trusted Agrifood Exports*, The Commonwealth Scientific and Industrial Research Organisation, viewed 30 August 2022, https://www.csiro.au/en/about/challenges-missions/Trusted-Agrifood-Exports

Appendix A

Summary of all pressing challenges aligned with relevant priority areas for action, and strategic objectives:

Pressing challenges	Priority areas for action	Aligned objectives
1: Alignment of traceability frameworks and data standards to maximise traceability system innovation, security and interoperability including streamlined regulation	**1.** Map data and data capture processes to identify information that can be used for brand building, productivity, regulatory, commercial, and premium pricing opportunities.	Objective **2** Objective **3**
	2. Conduct cross-industry data systems maturity assessments and jointly develop an interoperability guide to inform the development of data and technology standards, and investment to drive a digital and data-led traceability system.	Objective **1** Objective **2** Objective **3** Objective **4** Objective **6** Objective **7**
	3. Work together to define a consistent approach to shareable vs commercially sensitive data to develop a tiered assurance model reflecting the various levels of data.	Objective **3** Objective **4**
	4. Align processes so we can capture and use shareable data for multiple purposes by ensuring it meets the similar needs of multiple regulators.	Objective **1** Objective **2** Objective **5**
2: Align government and commercial regulatory and compliance requirements to reduce unnecessary regulatory burden and promote consistent supply chain procedures.	**5.** Develop and actively maintain a guide of current and future regulatory and commercial traceability requirements.	Objective **2** Objective **5** Objective **6**
	6. Agree on common principles to guide legislators and regulators, with a focus on promoting 'tell us once' approaches, including through mutual recognition and regulatory technology trials.	Objective **1** Objective **5** Objective **7**
	7. Develop, map and document consistent approaches to commercial traceability requirements, including through new and existing voluntary codes of practice.	Objective **1** Objective **2** Objective **4** Objective **6** Objective **7**
3: Increase traceability value-add while ensuring benefits are distributed across the supply chain to protect and enable agricultural exports and premium pricing and biosecurity.	**8.** Develop use cases and benefits (including cost benefits) analysis to highlight improved two-way producer-consumer information flow.	Objective **1** Objective **4** Objective **7**
	9. Establish mechanisms (and incentives) to support industry adopting and implementing interoperable, digitally mature systems.	Objective **1** Objective **4**
	10. Develop mechanisms to support industry to identify premium value creation and distribution opportunities and develop propositions for government.	Objective **1** Objective **5**
	11. Create a national interoperable digital infrastructure that integrates relevant data.	Objective **3** Objective **4** Objective **6**
	12. Establish the governance arrangements and operating model for the Agricultural Traceability Alliance, Traceability Hub.	Objective **7** Objective **8**
4: Create an enduring and motivated traceability alliance, with players across the whole traceability ecosystem to own and drive continued improvement and outcomes.	**13.** Create sustainable funding for traceability initiatives based on evidence of economic and societal costs and benefits.	Objective **1** Objective **6** Objective **8**
	14. Develop and implement a coordinated traceability communication and education campaign to strengthen public and political awareness and champion the importance of traceability.	Objective **6** Objective **7**
	15. Maintain and expand linkages and opportunities between stakeholders across all sectors to provide a nationally coordinated approach to enhancing traceability.	Objective **6** Objective **7** Objective **8**
	16. Set a flexible national traceability research and development agenda that strives for innovation and coordinates activities.	Objective **7**
	17. Promote the importance of traceability to regional neighbours and engage in related initiatives to build regulatory and other capacity internationally.	Objective **6**
	18. Influence the global agenda by active engagement and collaboration with other countries, multilateral organisations and forums.	Objective **6**