

Report

A national approach to assuring
agricultural sustainability claims for
international markets

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on behalf of:

The Assuring Sustainability Claims Working Group

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NOTE ON CURRENCY OF INFORMATION

Regulatory settings, market expectations, industry and data initiatives have evolved significantly over the course of the project. The analysis in this report reflects the landscape as it was understood during the project through to report finalisation in November 2025.

CITATION

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Audience

The primary purpose of this project was to support and inform the Australian Agricultural Traceability Governance Group (AATGG) as they consider the implementation of the *National Agricultural Traceability Strategy 2023 to 2033*.

The outputs of the project also provide value to a broader set of stakeholders across agriculture, finance, technology, research and the community:

Primary audiences:

- Federal government agencies and industry bodies negotiating international trade and sustainability agreements;
- state and territory governments regulating and promoting agricultural sustainability, overseeing elements of agricultural traceability, and supporting market-facing sustainability initiatives;
- industry sustainability frameworks and supply chain participants that generate or rely on evidence to substantiate sustainability claims; and
- researchers and analysts working on sustainability indicators, metrics, methods and traceability approaches.

Secondary audiences – those for whom the outputs are relevant, but not the central focus:

- technology providers building systems that capture, manage and share evidence to underpin sustainability claims;
- financial institutions and buyers of environmental outcomes, who require credible evidence in green finance, carbon, biodiversity and other environmental, social and governance (ESG)-related markets; and
- standards, certification and assurance bodies that verify evidence and issue recognised credentials.

Executive Summary

Executive summary

Australia's competitive position in global agricultural markets increasingly depends on the credibility and consistency of the sustainability claims made by producers, processors and supply-chain partners, as well as the industry-to-industry and government-to-government assurances that support trade and market access. Over recent years, expectations around sustainability evidence have shifted rapidly across Australia's major export destinations. Regulations governing deforestation-free supply chains, emissions disclosures, due diligence, labour practices, green-claim substantiation and product-level environmental performance are expanding at pace. Large multinational buyers, retailers and financiers are embedding sustainability requirements into procurement and investment practices, often exceeding minimum national regulations.

In this environment, sustainability claims are no longer peripheral marketing statements. They are becoming central to market access. The ability to demonstrate that Australian agricultural products are produced and traded in ways consistent with international sustainability expectations is increasingly a precondition for export participation, particularly in high-value markets.

Yet despite strong performance, Australia's evidence systems are not organised in a way that allows sustainability claims to be made consistently, efficiently or at scale. Sustainability evidence is collected through multiple, disconnected programs that have evolved independently in response to commodity-specific demands, voluntary certification schemes, market pressures, state regulations and private supply-chain initiatives. As global requirements have intensified, these disparate systems have been asked to carry functions they were not designed for.

This report provides a comprehensive analysis of what is needed to strengthen Australia's sustainability claim environment. It does so by addressing three core objectives:

1. Identify the essential sustainability claims required for export markets.
2. Determine how consistent, reusable and interoperable data can support credible claims.
3. Define proportionate verification and assurance pathways that deliver trust while minimising burden.

The analysis draws on international regulatory and market review, system mapping, technical assessment of domestic credential and data ecosystems, and consultation across government, industry, technology and research domains. The work was undertaken during a period of significant regulatory change globally; several key frameworks, such as the European Union's Green Claims Directive, the Corporate Sustainability Reporting Directive and various due diligence laws, evolved materially during the life of this project. *The international section of this report should therefore be read as a snapshot in time.*

Across all evidence sources, eight common systemic challenges emerged. These challenges explain why sustainability claims remain hard to make, why evidence is often difficult to verify and why producers experience duplicated reporting burdens. They also highlight why Australia currently lacks a coherent national approach recognised and trusted internationally.

Why sustainability claims matter for Australia

Australia's reputation for safe, clean and responsible agricultural production provides a strong foundation. However, this reputation must increasingly be demonstrated through verifiable evidence rather than assumed.

International developments include:

- **European Union:** mandatory due diligence on deforestation, comprehensive sustainability reporting for large companies, strict rules on green claims and environmental product footprints, and growing application of animal welfare expectations to imports.
- **North America:** strengthened labour and human rights import controls, corporate-driven sustainability commitments and emerging carbon-intensity tariffs and preferential domestic sourcing policies.
- **East and Southeast Asia:** expanding organic, food safety and traceability standards and increasing alignment with global ESG frameworks.

Each of these developments directly affects Australia's export prospects. Producers and exporters are already being asked to demonstrate evidence of emissions performance, biodiversity outcomes animal welfare, chemical use, labour practices, water management and land-use change. These requirements vary by market, commodity and supply chain... and they are intensifying.

Australia's ability to meet these expectations efficiently and credibly will determine competitiveness in the decade ahead.

The essential sustainability claims

Analysis of international market and regulatory expectations and Australian sector priorities identified nine sustainability priorities that are often considered important and **six that consistently emerge as the most critical**. These are the areas where alignment is strongest and where credible, comparable credentials will be essential for underpinning sustainability claims across all of agriculture:

1. Greenhouse gas (GHG) emissions
2. Animal welfare
3. Water stewardship
4. Biodiversity and deforestation
5. Soil health
6. Labour rights and working conditions

While a common set of topics can be identified, there will be variability depending on relevance (e.g. market and sector) and intended use (e.g. regulatory compliance, market access etc.).

The sustainability claim ecosystem

Despite significant fields of excellence, Australia's sustainability claim ecosystem is characterised by:

- inconsistent definitions and use of key terms
- fragmented and duplicative data systems
- variable credibility of sustainability credentials
- multiple overlapping assurance requirements
- limited ability to re-use evidence across programs
- missing national governance connecting sectoral systems
- increasing producer burden without clear value
- difficulty presenting a coherent national position internationally.

At the same time, global expectations continue to move toward:

- interoperability of sustainability data
- harmonised evidence rules
- transparent verification systems
- credible, comparable sustainability credentials
- stronger oversight of claims
- clearer governance of assurance and certification
- risk-aligned, proportionate assurance pathways.

Australia is therefore at a strategic inflection point: either build a coherent, interoperable national approach now, or risk rising trade barriers, loss of competitiveness and growing administrative burden across the supply chain.

Pathway to a coordinated national approach

Eight challenges emerged consistently and represent the core impediments to building trusted sustainability claims. Addressing these challenges requires structural, not incremental, change. The analysis supports the development of a federated national model for sustainability claims, one that:

- preserves sectoral autonomy
- avoids one-size-fits-all regulation
- leverages existing systems rather than replacing them
- provides national consistency where it delivers value
- reduces burden and duplication
- strengthens international recognition
- embeds proportionate, risk-aligned verification pathways
- ensures Australia can negotiate from a position of strength in global rule-setting

This federated model would be supported by the proposed Agricultural Sustainability Australia (ASA) Alliance, a collaborative mechanism that enables government, industry and supply-chain partners to

coordinate sustainability evidence, data and assurance activities without displacing existing sectoral initiatives.

Under the ASA Alliance, the federated model would be delivered through three complementary components:

1. **The Australian Agricultural Sustainability Framework (AASF):** providing national sustainability principles and criteria that articulate what sustainability means in the Australian agricultural context.
2. **The AASF Data Ecosystem:** delivering indicators, metrics, methods and data standards so that evidence can be collected once and reused for multiple purposes.
3. **The National Sustainability Claims Coordination Program (Claims Program):** aligning evidence rules, verification pathways and credential recognition across sectors, enabling a coherent national approach to sustainability claims.

Together, these components form an integrated, federation-style approach that strengthens coherence and trust in sustainability claims while retaining flexibility across commodities, markets and production systems.

Addressing the challenges

Such a coordinated national approach can provide solutions to the eight challenges identified through this work as described below:

Challenge

Solution

1***Inconsistent and confused terminology***

The proposed Claims Program establishes national definitions for key terms such as *sustainability claim*, *evidence*, *verification* and *credential*. The AASF establishes national definitions for sustainability *principles and criteria*. The proposed AASF Data Ecosystem would establish *indicators, methods and metrics*. Collectively, this infrastructure provides a shared vocabulary across sectors and markets. These definitions create a transparent foundation to ensure claims and credentials are interpreted consistently both domestically and internationally. By clarifying language, comparability is enabled and one of the key sources of confusion undermining trust in Australian sustainability claims is removed.

2***Trust and credibility as foundations***

The Claims Program establishes a process for transparent and comparable sustainability credentials underpinned by trusted governance, providing clarity on what credentials exist, how/if they are verified and by whom.

3***The sustainability data ecosystem is anarchic***

The proposed AASF Data Ecosystem supports interoperability of data and information (by answering “what data?”) so that evidence can be collected once and re-used many times, reducing duplication and improving credibility. The Claims Program leverages this to make sustainability credentials more comparable, therefore providing greater assurance as to their credibility.

4***Unclear credibility of credential schemes***

The Claims Program creates coherence across the diverse landscape of sustainability credentialing programs without imposing a single model. It introduces a transparent reference system for credentials. This allows equivalence and credibility to be assessed consistently, enabling markets, producers and regulators to recognise appropriate programs while maintaining flexibility for sector-specific approaches.

Challenge

Solution

5***Producer
burden and
value***

The Claims Program helps producers understand which schemes and programs are recognised by their markets/customers and how their existing participation aligns with others, reducing the need to duplicate effort.

6***Fragmented
national
coordination***

The Claims Program establishes a coordinated national approach that makes visible how different sustainability credential programs fit together using consistent language. It provides a single reference point, underpinned by the AASF, by which sector initiatives, certification schemes and procurement requirements can be assessed. Through the AASF Data Ecosystem, evidence can be made comparable, reducing confusion for producers and enabling consistency and mutual recognition across supply chains. The Claims Program then clarifies what level of assurance supports each claim, ensuring transparency for markets and regulators.

7***National and
farm-scale
assurance***

The Claims Program recognises both farm-level and national/sectoral tiers of claims. It also provides market-sensitive differentiation, showing which assurance method is acceptable in which markets, so producers, supply chains and industry can choose the most appropriate and efficient pathway without duplicating effort.

8***Productivity and
competitiveness***

The Claims Program promotes standardisation so that evidence and verification requirements (where relevant) can be recognised across multiple schemes and markets. This reduces duplication and compliance costs, enabling the same data to serve many purposes. By allocating resources to on-farm improvement, assurance supports productivity and strengthens Australia's international competitiveness rather than becoming a drag on efficiency.

Implications for Government and Industry

A coordinated national approach built around the ASA Alliance, the AASF, the AASF Data Ecosystem and the Claims Program has important implications for both government and industry.

If effectively implemented, this approach would:

- Strengthen Australia’s ability to meet export requirements, including emerging regulatory, procurement and finance-sector expectations.
- Reduce cost and administrative burden across the supply chain by enabling evidence to be collected once and reused across multiple systems and reporting needs.
- Improve transparency and credibility of sustainability claims, clarifying what is being claimed, what evidence supports the claim and how that evidence is verified.
- Align Australia with global sustainability norms, particularly concerning data interoperability, evidence standards and verification expectations.
- Enable clearer and more confident international advocacy, with coordinated messaging and consistent evidence underpinning trade negotiations and standards discussions.
- Protect and enhance competitiveness in high-value markets, where credible sustainability claims increasingly define access.
- Support long-term sector resilience and viability, ensuring assurance systems strengthen productivity and competitiveness rather than imposing unnecessary burden.

Without such coordination, Australia risks rising trade friction, continued duplication of data and assurance requirements, and erosion of competitiveness as global sustainability expectations continue to evolve.

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1. Introduction

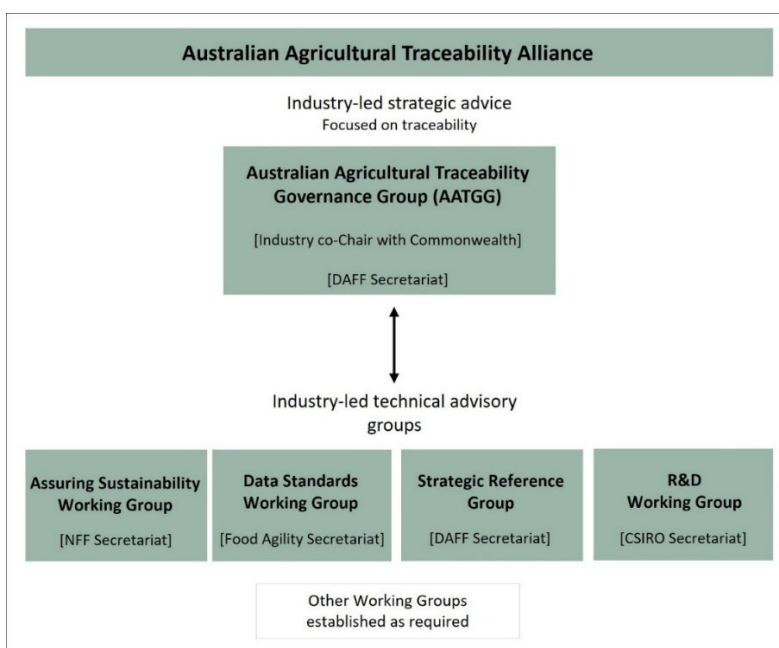
Background

The Australian Agricultural Traceability Alliance¹ (the Traceability Alliance) is a coalition of partners with an interest in enhancing national agricultural traceability. Partners include producers, value-adding businesses, employees, state and territory governments, logistics firms, data services providers, processors, exporters, researchers and retailers.

The Australian Agricultural Traceability Governance Group² (AATGG) was established by the Australian Government’s Department of Agriculture, Forestry and Fisheries (DAFF) as part of a broader governance framework for the Traceability Alliance to enable the development and implementation of the *National Agricultural Traceability Strategy 2023 to 2033* (the Traceability Strategy).

The Australian Agricultural Traceability Assuring Sustainability Claims Working Group³ (ASC Working Group) operates under a Terms of Reference endorsed by the AATGG. It is one of three Working Groups established to provide expert advice to the AATGG in relation to the implementation of the Traceability Strategy, as shown in Figure 1. Through this coordinated structure and defined Terms of Reference, the AATGG seeks to ensure effective, transparent and non-duplicative efforts when responding to agricultural traceability and sustainability priorities across Australia.

Figure 1 Governance framework of the Traceability Alliance



¹ <https://www.agriculture.gov.au/biosecurity-trade/market-access-trade/alliance>

² <https://www.agriculture.gov.au/biosecurity-trade/market-access-trade/alliance-2022/australian-agricultural-traceability-governance-group>

³ https://www.agriculture.gov.au/biosecurity-trade/market-access-trade/alliance-2022/australian-agricultural-traceability-governance-group#toc_2

Membership of the ASC Working Group comprises representatives from the Commonwealth Government, the private sector, industry, the research community and the wider community. It is co-chaired by the National Farmers' Federation (NFF) and the Commonwealth Scientific and Industrial Research Organisation (CSIRO), with the NFF providing secretariat services.

The ASC Working Group has been tasked with strengthening Australian agriculture's ability to make sustainability claims that are supported by credible evidence and recognised through sustainability credentials that build trust in international markets. Traceability is recognised as a critical enabler, ensuring that evidence can be linked and shared along supply chains to substantiate sustainability claims.

A key outcome of the considerations of the Traceability Alliance is trade and market access. Sustainability and its interaction with trade and market access is therefore the focus of the ASC Working Group rather than Environment, Social and Governance (ESG) reporting, which is a subset of topics, focused primarily on risk assessment for investor audiences.

A significant body of work on sustainability claims has been undertaken through government, industry and private initiatives. Much of this work served as the starting point for the ASC Working Group's work.

The other two working groups formed under the AATGG are the Australian Agricultural Traceability Data Standards Working Group (DSWG⁴) and the Australian Agricultural Traceability Research and Development Working Group (R&DWG⁵).

The DSWG is responsible for developing a data standards consultation paper to advise agricultural digital and data solutions and systems that promote data sharing and interoperability across supply chains.

The purpose of the R&DWG is to identify, prioritise, and review, as required, the research and development (R&D) requirements needed to deliver the Traceability Strategy and refer these priorities as advice to the AATGG.

Each AATGG Working Group has been tasked with preparing a discussion paper to inform the implementation of the Traceability Strategy and to engage broadly with stakeholders.

⁴ https://www.agriculture.gov.au/biosecurity-trade/market-access-trade/alliance-2022/australian-agricultural-traceability-governance-group#toc_1

⁵ https://www.agriculture.gov.au/biosecurity-trade/market-access-trade/alliance-2022/australian-agricultural-traceability-governance-group#toc_3

Objectives

This project was initiated to identify how Australian agriculture might make sustainability claims that are supported by credible, verifiable evidence and, where appropriate, recognised through formal credentials, in ways that meet export market requirements while reflecting the diversity of Australia's production systems.

In particular, the project focused on:

1. Understanding essential sustainability claims.
2. Identifying approaches to support data-driven claims.
3. Providing advice on mechanisms that support assuring claims for market access purposes.

Purpose

This project was intended to:

- Inform discussion concerning how to best ensure evidence-based sustainability claims for Australian agriculture enable:
 - Australian government and industry to meaningfully engage with global sustainability initiatives to articulate Australia's agricultural sustainability;
 - the promotion and support of international trade and market access at a Government to Government and Business to Business level; and
 - the creation of tangible benefits to the Australian economy and agriculture sector.
- Recommend methods and requirements to underpin evidence-based sustainability claims that:
 - are adaptable to emerging market requirements;
 - reflect Australia's unique and diverse operating environment;
 - leverage existing initiatives and data sets and identify gaps in these;
 - do not impose undue burden on farmers and other supply chain actors; and
 - consider interoperability of data within a traceability context.
- Inform continual improvement of national and industry sustainability initiatives.
- Where feasible, demonstrate how the proposed recommendations can be practically applied and outline the anticipated benefits, opportunities and requirements.

Ultimately the outputs of this work will inform implementation decisions relating to the Traceability Strategy via the AATGG through to DAFF.

Scope

This project focused on eight sectors. These were selected through an analysis of the:

- total export market value (Australian dollars) for the financial year 2022–23 to identify the highest value sectors;
- export market destinations for each commodity to ensure diversity of markets across all sectors; and
- differing levels of maturity in relation to sustainability regulation and requirements, both for the industry and for different export markets.

Based on this analysis, the sectors and markets within the scope of this project were:

- **Sectors:** wheat, beef, canola, cotton, wool, seafood, dairy and horticulture.
- **Markets:** European Union (EU), East and Southeast Asia, North America (United States (US)).

Guiding principles

To focus the project, the ASC Working Group identified guiding principles that can be summarised as:

- **Focus on evidence-based sustainability claims**
Ensure that Australian agricultural sustainability claims support export market and regulatory requirements, integrating both regulatory and non-regulatory approaches.
- **Build on existing efforts**
Build on existing national and sector-level sustainability initiatives, while evolving as new information and findings become available.
- **Industry-level focus with supply chain consideration**
The focus is on sustainability claims at the whole of industry level rather than individual farms, but it may consider the role of different actors across the supply chain, from farms to retailers.
- **Data and verification**
Emphasis is placed on using existing data to support sustainability claims and identifying gaps where data or information needs to be collected or otherwise synthesised. Verification methods, whether through standards or innovative approaches beyond typical audit-based certification, are critical for credibility.
- **Market access and regulatory compliance**
Sustainability claims are relevant for international trade, market access, the finance sector, and corporate sustainability reporting, and may differ for various audiences. The focus of this paper is on export market access and regulatory compliance.

- **Adaptability and relevance**

Proposed approaches must be relevant to Australia's unique agricultural environment while aligning with international trade rules and evidence-based decision-making systems and without imposing an undue burden on participants.

Project approach

The ASC Working Group engaged the authors, Angela Schuster (Schuster Consulting Group) and Dr David Lemon (CSIRO), to undertake the project in two phases.

Phase 1

Consultation and desktop research during Phase 1:

1. documented major current and emerging international market and regulatory requirements in relation to sustainability claims;
2. defined priority sustainability principles and criteria that respond to emerging international market and compliance requirements and are common to sustainability claims;
3. identified and assessed current and emerging approaches to demonstrating sustainability claims and their capacity to respond to international market requirements; and
4. assessed key data points or datasets that lend themselves to supporting the verification of sustainability claims.

A combination of desktop research and targeted interviews was used to release an initial Discussion Paper (DAFF 2024⁶) via DAFF's Have Your Say website for public consultation.

Desktop research

A range of documents were reviewed in the development of this report and the Discussion Paper. The Working Group initially suggested a list of documents to the authors. These were shortlisted for relevance to the in-scope markets and sectors. Additional documents were reviewed based on those found in the desktop research and stakeholder interviews. Materiality assessments and industry sustainability framework reports were also reviewed for the sectors in scope. All information was reviewed and analysed for trends and commonalities with the findings distilled and overlaid with the interview findings.

⁶ DAFF 2024, *Assuring agricultural sustainability claims: discussion paper*, prepared by Schuster Consulting Group and CSIRO on behalf of the Australian Agricultural Traceability Assuring Sustainability Claims Working Group, Department of Agriculture, Fisheries and Forestry, Canberra. CC BY 4.0.

Interviews

In consultation with Working Group co-chairs, 12 stakeholders from government, industry and supply chains were identified, based on their relevance to the markets and sectors within scope. Interviews were conducted online and structured around understanding:

- what sustainability outcomes markets/companies are currently being asked to demonstrate and against which requirements;
- what is driving these requests;
- the expectations for evidence;
- how that evidence is expected to be provided;
- what key subjects or topics are of particular focus; and
- what may be emerging in the future.

Interviews were analysed for trends and commonalities.

Public consultation

Findings from the desktop research and interviews were distilled and overlaid with the combined knowledge of the project team and Working Group. An initial Discussion Paper was prepared that outlined:

- International market and regulatory requirements in relation to:
 - current and emerging compliance requirements
 - key evidence expectations (both form and subject of evidence)
- Priority sustainability principles and criteria
 - material topics drawn from sector materiality assessments
 - topics considered critical to demonstrating sustainability claims by stakeholders
 - areas of alignment on priority topics

Questions were posed throughout the paper for stakeholders to consider and provide feedback about.

The *Sustainability Claims Discussion Paper* (DAFF 2024⁷) was provided to the Department of Agriculture, Fisheries and Forestry (DAFF) in October and released on their Have Your Say website for public comment on 4 December 2024.

Submissions closed on 3 March 2025 with final submissions provided to the project team on 19 March 2025.

Through necessity, submission references were deidentified and aggregated as some responses elected to remain confidential. Submissions with publication permission are available online:

<https://haveyoursay.agriculture.gov.au/sustainability-claims>

Insights Report

The *Insights Report: Assuring Agricultural Sustainability Claims Discussion Paper Consultation* (Schuster and Lemon, 2025⁸) was prepared for the ASC Working Group outlining key insights from stakeholders who submitted responses, as relevant to the scope of the project. This included a summary of cross-cutting themes before suggesting some foundational concepts for the next stage of the project.

In addition, the report provided an overview of stakeholder views on the role of Government in relation to assuring sustainability claims.

Phase 2

Phase 2 consolidated the findings of Phase 1, including insights from the stakeholder consultation on the Discussion Paper to:

1. conceptualise possible approaches to providing evidence-based sustainability claims and their application within Australian agriculture;
2. identify key issues that must be considered when determining the best approaches to providing evidence to support sustainability claims; and
3. identify and present options on issues that may be important to consider when determining an appropriate approach to operationalising a sustainability claim assurance system that is interoperable with existing and proposed department and industry traceability systems, and that supports the AATGG in its deliberations.

This report details the work from Phases 1 and 2.

⁷ DAFF (2024). *Assuring agricultural sustainability claims: discussion paper*, prepared by Schuster Consulting Group and CSIRO on behalf of the Australian Agricultural Traceability Assuring Sustainability Claims Working Group, Department of Agriculture, Fisheries and Forestry, Canberra. December. CC BY 4.0.

⁸ Schuster A and Lemon D (2025). *Insights Report - Assuring Agricultural Sustainability Claims Discussion Paper Consultation*. Prepared for the Assuring Sustainability Claims Working Group. June

Defining key terms

Throughout this work, there was considerable confusion about the meaning and use of terms such as **sustainability claim**, **evidence**, **verification**, **sustainability credential** and **assurance**. In some cases, these terms were used interchangeably; in others, they were interpreted differently by different stakeholders. To support clarity and consistency, the following section provides a definition of these terms, as they are used in this document and explains how they relate to each other.

Sustainability claim

A sustainability claim is an **outward-facing statement** made by a producer, exporter or brand about the environmental, social and/or governance-related performance of a product, process or organisation.

It communicates to stakeholders, such as customers, investors, retailers or regulators, that certain practices or outcomes are being undertaken or achieved in:

- the production of the product
- the undertaking of processing of the product; or
- by the organisation making the claim.

Examples of claims include:

- “This cotton was grown using 30% less water than the regional average.”
- “Deforestation-free beef.”
- “Carbon-neutral certified”
- “Our supply chain has reduced emissions by 20% since 2020.”
- “This grain was grown without synthetic pesticides.”

Sustainability claims can be made at different scales:

- Farm scale (e.g. animal welfare practices like “non-mulesed”)
- Product scale (e.g. carbon intensity per kg)
- Supply chain or sector/commodity scale (e.g. no forced labour in processing)
- National/industry scale (e.g. Australian agriculture has reduced its GHG emission by at least 6% since 2005)

Sustainability claims may be:

- **Consumer-facing**
Sustainability claims are used to influence consumer perception and purchasing decisions through product packaging, marketing and branding.
- **Business-to-business and supply chain facing**
Claims support commercial relationships and market access by meeting buyer requirements, aligning with procurement standards and demonstrating traceability and assurance.
- **Investor, banking and finance-related**
Claims inform financial risk assessments, ESG compliance, and access to sustainability-linked funding, that is increasingly shaping capital flows into agriculture.
- **Government and regulatory-related**
Sustainability claims are provided as evidence for regulatory processes, trade compliance and public frameworks to meet domestic and international policy expectations.

Further examples of these are provided in Appendix 3.

Evidence

Evidence is the foundation that underpins a sustainability claim. It demonstrates whether a claim can be substantiated.

Evidence is **any information, data or material that is used to support, justify or refute a claim**. In the context of agricultural sustainability claims, evidence generally refers to any verifiable information or documentation (usually provided by the claimant) that supports the assertion that a product, practice or system meets certain sustainability criteria.

Evidence may be raw (e.g. datasets) or structured (e.g. reports, declarations). Evidence can be generated directly at the farm or supply chain level, aggregated by sector or whole-of-industry initiatives. Its credibility depends on quality, transparency and whether it is collected and used in a way that is consistent with and proportionate to the risk of the claim being made.

Evidence can have variable quality. Evidence that is of high quality is:

- **Transparent:** Clearly documented sources and methods.
- **Objective:** Free from bias and subjective assessment.
- **Relevant:** Directly related to the sustainability claim.
- **Verifiable:** Can be verified or reproduced.
- **Contextualised:** Interpreted within the appropriate environmental, social and economic context.

Importantly evidence at this point is not verified; however, to rely on it as a credential to underpin a claim, it must be verifiable.

Verification

Verification refers to the **processes, mechanisms or determination techniques by which evidence is validated**. These main techniques include assessment, auditing, evaluation, examination, inspection and testing⁹.

Sustainability credential

The term ‘credential’ is one of many in agriculture that can be used for multiple and, in some cases, contradictory purposes. Strictly speaking a ‘credential’, usually provided in the form of a certificate, accreditation, or similar, is provided by a third-party. It is trust in the provider of the credential that gives it legitimacy.

However, in agriculture and beyond, the term ‘credential’ has come to mean **any form of verifiable evidence**. Thus, a self-declaration about the sustainability of a product might be considered a credential, in some contexts.

A sustainability credential may be simply the existence of verifiable evidence or may be the outcome of a third-party assurance process (i.e. a certificate).

Unlike a claim, which is outward-facing, **a sustainability credential may not be visible to the end consumer**. However, it must be available on request or when required (e.g. during audits or regulatory reviews).

It is important to note that the existence of regulation does not constitute a credential. A credential means there must be evidence (of some form) that can be verified (in some way) that some practice or process has been/is being undertaken or an outcome achieved.

Assurance

Assurance refers to the **confidence** that a claim can be trusted and therefore relied upon. An assurance mechanism is the process by which this confidence is developed.

For this project three levels of assurance are defined:

- **First-party assurance (or attestation)** relates to evidence generated directly by suppliers, producers or companies (e.g. carbon calculator outputs, codes of conduct), with limited external oversight, self-declarations are the most common form of first-party assurance. This is likened to saying “Trust me because I told you”.
- **Second-party assurance (or attestation)** relates to evidence assured by an entity that has an interest in the organisation, such as an industry body, buyer or supply-chain partner. This provides structured checks and aggregated credibility, but governance and decision-making remain within an associated or interested entity.

⁹ ISO/CASCO. *Conformity assessment tools*. <https://casco.iso.org/techniques-and-schemes.html>

Second-party assurance may result in the issuance of a certificate. This is likened to saying “Trust me because an organisation I am associated with has checked”.

- **Third-party assurance (or attestation)** relates to independent assurance provided by a body that has no vested interest in the organisation or outcome and operates under independent governance and decision-making arrangements. It is internationally recognised as the most robust form of assurance and typically results in the issuance of a formal certificate or statement of conformity. This is likened to saying “Trust me because an independent body has checked”.

How they relate

Element	What it is	Purpose	Who it's for	Examples
Sustainability claim	Outward-facing statement about the sustainability performance of a product, process or organisation.	Communicate sustainability practices or outcomes.	Consumers Buyers Regulators Investors	“This beef is deforestation-free”. “Our farm reduced emissions by 20% since 2020”. Related logo or Mark.
Evidence	The information, data or material that underpins a claim	Demonstrate or substantiate a claim.	Buyers Auditors Regulators Investors	Farm records, emissions data, water use data, satellite imagery, LCA results, audit reports.
Verification	The process or mechanism by which evidence is validated.	Confirm accuracy, robustness and reliability of evidence.	Producers Industry Frameworks Auditors Regulators Buyers	Data validation processes, methodological checks, audits, on-site inspections, digital data verification or tool etc..
Sustainability credential	Any form of verifiable evidence.	Provide recognised proof of a verifiable claim and signal how and by whom a claim has been assured	Buyers Regulators Auditors Supply Chains	Certificates of conformity, verified digital records, registry entries, certification Marks.
Assurance	The degree of confidence that a claim can be trusted, derived from the verification of its supporting evidence and who and how the evidence was verified.	Provide trust, credibility and comparability across markets, reduce risk of greenwashing or trade barriers etc.	Markets Regulators Investors Consumers	First-party: self-declaration by producer. Second-party: within an industry or buyer program. Third-party: independent certification by an accredited body

Definitions for related terms

The terms **indicators**, **metrics** and **methods** were also found to be used inconsistently and variably across this work. Further, the **purpose** and **context** of use are critical in determining whether indicators, metrics and methods are fit-for-purpose.

These terms have been defined through the work of Lemon *et al* (2025¹⁰) as part of the Australian Agricultural Sustainability Framework (AASF) Data Ecosystem Project and adopted under this project.

Indicators

Variables (qualitative or quantitative) that provide information about complex sustainability criteria. Indicators act as *proxies* for broader goals; they provide meaning to stakeholders within a context; they are selected based on relevance, feasibility and reliability; and they may be individual or composite.

Examples: Soil erosion rate as an indicator of land degradation; crop diversity as an indicator of agroecosystem resilience; farmer income stability as an indicator of economic sustainability; freedom from pain, injury or disease as an indicator of animal welfare.

Metrics

The quantitative expressions of indicators. Metrics *quantify* indicators, enable benchmarking and must be measurable, cost-effective and adaptable.

Examples: Tonnes of soil lost per hectare per year; number of crop species per farm; annual net farm income in AUD; percentage of animals vaccinated; number of reported workplace injuries.

Methods

The *systematic approaches or procedures* used to collect, analyse and interpret data related to metrics. Methods guide the selection and application of indicators and metrics; may be qualitative, quantitative or mixed; must be scientifically valid and/or widely accepted; and must be cost-effective for users.

Examples: Soil sampling and lab analysis to measure soil organic carbon; annual species surveys; review of ATO income records; farmer surveys on vaccination rates; review of training and transport logs.

¹⁰ Lemon D, Kostanski L, Lythall A, and Dominik S (2025). *Recommendations for Initial Implementation: AASF Data Ecosystem Design Project – Final Report*. CSIRO, Australia. (In preparation)

Purpose and context

- **Purpose:** What an indicator and metric is being used for, and by whom.
- **Context:** The circumstances in which the indicator or metric is being used.

The choice of indicator and metric therefore depends on whether the use is for aspects such as market access, compliance reporting, sector benchmarking or producer decision-making (i.e. context and purpose). For example:

- In livestock industries, the indicator “freedom from pain, injury or disease” may be widely accepted, but the purpose determines which metric is appropriate: a buyer might want evidence of pain relief use (compliance), while a farmer may track mortality rates (management). The context (chickens versus sheep) further determines which metrics and methods are valid.
- For GHGs, regulators may require reporting of total emissions for compliance purposes, while producers may monitor emissions intensity per unit of output for management decisions. The context of different commodities means (for example) nitrogen dioxide is material in one system, while methane dominates in another.

The same indicator or metric can serve multiple purposes, but only if designed and collected using methods that enable consistency, interoperability and trust across supply chains.

Insight

A persistent challenge throughout this project and across the wider sustainability landscape is the absence of a common vocabulary.

This lack of shared language makes it difficult to compare approaches, assess risk or determine whether a claim has been genuinely substantiated. It also fragments communication between sectors, markets and regulators, weakening Australia's ability to present clear, trusted sustainability claims in international contexts.

2. International market and regulatory drivers

Overview

Australia's agricultural exports are increasingly influenced by regulatory, policy, and corporate sustainability requirements in major markets. These requirements do not arise from any single driver such as consumer demand, but from a combination of regulatory action, corporate responsibility strategies, finance sector disclosure rules and, in some cases, activist and civil society pressure.

For Australian producers and exporters, this means that sustainability claims are no longer optional marketing tools. Rather, they are emerging as a precondition for participation in international markets. Evidence to support these claims is increasingly becoming a key factor in negotiations about market access at the government-to-government, industry-to-government and business-to-business levels.

At the government level, different markets have implemented their own domestic regulations, often driven by environmental goals, climate change mitigation strategies and ethical considerations. In particular, the EU is leading the drive for transparency and accountability in sustainability claims. The result is enhanced reporting requirements for supply chain participants about the sustainability of their operations. Other major markets such as the United States, East Asia and increasingly, Southeast Asia, are following suit.

However, the approaches used are not uniform. It remains uncertain whether international requirements will converge or fragment further, leaving exporters to navigate varied compliance landscapes. This divergence was highlighted in early 2024, when the US Securities Exchange Commission (SEC) ruled that companies only need to report Scope 3 emissions if they are material to investors or part of specific reduction targets. This ruling highlights the different regulatory priorities where the US seeks a balance between transparency and compliance burden, while the EU emphasises comprehensive corporate responsibility and aligning business practices with climate goals.

Alongside regulation, an increasing number of global corporations are adopting sustainable sourcing policies or equivalent standards. These may reflect local regulatory obligations, shareholder pressure, business imperatives such as social licence and reputation management, and/or corporate social and environmental responsibility initiatives.

Whatever the reason for the increasing focus and emphasis on sustainability and the source of the changing expectations, Australian agricultural producers and processors must understand these changing requirements and ensure that they can provide the necessary evidence to meet them, if they wish to continue to export their goods.

Free trade agreements

An analysis of several free trade agreements (FTAs) to which Australia is a signatory and that are relevant to the markets in scope for this review, revealed that agricultural sustainability is often not a primary focus in these agreements nor do they directly impose expectations of assurance. Many of these agreements do however, include provisions related to environmental sustainability that indirectly include the agriculture sector. While often broad and aspirational, they reflect a general commitment to fostering sustainability across many industry sectors.

In many cases, these agreements contain general environmental commitments that signal a desire to collaborate on sustainability initiatives, without setting specific targets. For example, the Singapore-Australia Free Trade Agreement (SAFTA)¹¹ does not directly address agricultural sustainability. However, this is covered under the Singapore-Australia Green Economy Agreement (GEA)¹². The GEA promotes the use of sustainable agricultural practices aimed at enhancing food security, limiting climate change impacts and reducing the environmental footprint of agriculture. Key principles from the GEA include supporting investment in sustainable agri-food systems and implementing practices that adapt to climate change while reducing greenhouse gas (GHG) emissions.

Other FTAs and related bilateral commitments emphasise cooperation on sustainability related topics such as management of natural resources, land use and biodiversity conservation, which could affect agricultural practices in Australia. While these commitments are often aspirational, they lay the groundwork for future cooperation on sustainable agricultural development which may result in more specific direction to industry in the future.

Australia does not yet have an FTA with the EU. However, the current disposition from the EU indicates that any future agreement will likely include strong commitments about agricultural sustainability, reflecting the EU's emphasis on strong environmental standards. The specific nature of these commitments remains unclear at present.

¹¹ <https://www.dfat.gov.au/trade/agreements/in-force/safta/singapore-australia-fta>

¹² <https://www.dfat.gov.au/geo/singapore/singapore-australia-green-economy-agreement>

European Union requirements and drivers

The EU's Farm to Fork Strategy¹³, a key component of the European Green Deal¹⁴, aims to transition towards a more sustainable and fairer food system. The Green Deal provides the overarching framework for achieving EU-wide climate neutrality by 2050. The Farm to Fork Strategy specifically emphasises the reduction of pesticide use, improvement of animal welfare and the promotion of organic farming.

Similarly, the Regulation on Deforestation-free Products (EUDR)¹⁵ seeks to tackle global deforestation by banning the import into, and export from, the EU of specific products that have been produced on land deemed to have suffered deforestation since December 2020. A benchmarking system will classify countries into three risk categories according to the risk of producing commodities that are not deforestation-free.

EUDR was due to come into effect December 2024 but during this paper's development, a delay was announced until 30 December 2025¹⁶ for large companies with phased implementation for smaller firms thereafter. A further 12-month delay at the time of this paper had also been proposed shifting these timeframes further to December 2026 for large companies and June 2027 for small enterprises. Industry and producer groups continue to lobby for further delays. Indonesia for instance, has proposed postponing compliance until 2028, citing compliance barriers and challenges faced by small landholders.

The Carbon Border Adjustment Mechanism (CBAM)¹⁷, due to start in 2026, will impose taxes on carbon-intensive imports. While agriculture is currently excluded from the CBAM, it is possible that agriculture could be included post-2030, after the initial 2026 to 2034 transition period. This would likely affect agricultural products with high GHG footprints.

The Corporate Sustainability Reporting Directive (CSRD)¹⁸ broadens the scope of corporate sustainability reporting to cover more companies, introduces more detailed disclosure standards aligned with EU sustainability goals, and requires external audits to ensure accuracy. Australian companies may be impacted due to their presence in the EU market or because they supply to EU companies. The Corporate Sustainability Due Diligence Directive (CSDDD)¹⁹ requires companies to address human rights and environmental impacts across their supply chains.

The Green Claims Directive²⁰ introduces strict substantiation requirements for environmental claims and limits the use of 'unverified sustainability labels'. In this context, the phrase 'unverified

¹³ <https://eur-lex.europa.eu/EN/legal-content/summary/farm-to-fork-strategy-for-a-fair-healthy-and-environmentally-friendly-food-system.html>

¹⁴ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52019DC0640>

¹⁵ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32023R1115>

¹⁶ <https://www.consilium.europa.eu/en/press/press-releases/2024/12/18/eu-deforestation-law-council-formally-adopts-its-one-year-postponement>

¹⁷ <https://eur-lex.europa.eu/eli/reg/2023/956/oj/eng>

¹⁸ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32022L2464>

¹⁹ <https://eur-lex.europa.eu/eli/dir/2024/1760/oj/eng>

²⁰ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52023PC0166>

sustainability labels' refers to logos, marks or claims that are self-declared or not backed by recognised third-party verification and transparent governance.

The CSRD, CSDD and the Green Claims Directive, in particular, focus on 'initiative integrity' aspects such as how initiatives that support claims have considered governance transparency, standards-setting procedures, claims oversight and third-party verification and public accountability.

The EU Regulation 2024/399²¹ prohibits the use of antimicrobials reserved for human medicine and bans antimicrobials being used for growth promotion or yield increase in products entering the EU. From 3 September 2026 these rules will apply to Australian beef, dairy and sheep products. Other relevant instruments include the Packaging and Packaging Waste Regulation (PPWR)²² which influences sustainability requirements for packaging.

Certifications such as the Marine Stewardship Council (MSC)²³, Global G.A.P.²⁴, SAI Platform²⁵, the International Sustainability and Carbon Certification (ISCC)²⁶ program, and compliance with the EU's strong animal welfare and environmental protection standards, are becoming expected for market access. Animal welfare reform in the EU (covering stocking densities, painful husbandry procedures and cage phase-outs) further signals that this subject will be treated as a core sustainability requirement in trade.

Importantly, while the EU is not the largest market for Australian agricultural exports, the EU's regulatory influence is profound and increasingly shaping global trade practices. This is occurring for two reasons:

1. Domestic farmer sentiment

Farmers in the EU are increasingly pushing back against strong domestic sustainability requirements, arguing that these regulations place them at a competitive disadvantage unless similar standards are applied to imported agricultural products. They contend that, unless imports are held to the same standards, cheaper goods from regions with less rigorous environmental and social requirements could flood the EU market, undermining their efforts and profitability. Equally, there is also a strong farmer narrative that the cost of providing such information falls to farmers and they argue there is insufficient subsidy to cover this burden.

As a result, there has been pressure from EU agricultural groups for the European Commission to enforce stricter sustainability requirements on imports, ensuring that foreign producers meet the same high standards as domestic farmers. This push aims to level the playing field and protect EU farmers from unfair competition while also promoting global environmental and ethical farming practices. By setting these standards for imports, the EU

²¹ https://eur-lex.europa.eu/eli/reg_impl/2024/399/oj/eng

²² <https://eur-lex.europa.eu/eli/reg/2025/40/oj/eng>

²³ <https://www.msc.org/standards-and-certification/the-msc-standards>

²⁴ <https://www.globalgap.org/>

²⁵ <https://saiplatform.org/>

²⁶ <https://www.iscc-system.org/>

effectively extends its regulatory influence beyond its borders, shaping global trade practices and compelling foreign producers to meet its criteria to access the EU market.

2. Trade relations

Many of Australia's export markets, such as Japan, South Korea and China, are either aligning with or taking inspiration from EU sustainability standards. This alignment is driven by a combination of factors, including the desire to strengthen trade relations with the EU and bilateral agreements. Another driver may be simply efficiency in that it may be more efficient to set expectations at the highest level if it addresses the broadest range of expectations.

Implications for Australia

For Australian agriculture, alignment of export markets with EU influenced standards has significant implications. Even if Australian products are not directly entering the EU, they may need to meet EU-style requirements in aligned regions.

A growing concern is the cumulative impact these regulations may have on agricultural exporters, especially small and medium enterprises. A key risk identified through this project is that the administrative and evidentiary burden may shift disproportionately to producers, despite their limited influence over supply chain data. Additional complexity arises from country-specific interpretation and implementation of EU directives by major retailers and customers. Confounding this is a lack of facts that industry and government can use to demonstrate the different production landscapes and systems in Australia compared with other regions, particularly the EU.

Commodity-specific regulatory and methodological challenges also shape how EU requirements affect recognition of Australian claims. For example:

- Wine producers face stringent and divergent pesticide residue limits that create technical trade barriers when Australian practices do not align with EU concerns about soil and residues.
- In the wool and cotton sectors, the application of the EU's Product Environmental Footprint (PEF)²⁷ methodology risks biasing outcomes against natural fibres by failing to assess biological and synthetic fibres consistently, highlighting the need for robust, Australian-specific datasets on production inputs, land use, water and energy use, and lifecycle emissions to ensure accurate representation in international assessments.
- In the grains sector, emerging requirements for Scope 3 emissions assurance pose risks where generic methodologies (such as Tier-1 emission factors) overstate emissions and fail to capture sequestration activities, potentially disadvantaging Australian exports.
- For the seafood sector, certification under the MSC is essential for access to UK and EU markets.

²⁷ https://green-forum.ec.europa.eu/green-business/environmental-footprint-methods/pef-method_en

North America – United States requirements and drivers

For Australian food and fibre exports to the US, sustainability expectations are increasingly shaped by a combination of US corporate standards, state-level regulation and evolving federal policy. While the current US administration has rolled back many climate-focused initiatives, this does not remove sustainability from trade. Instead, it shifts the weight of requirements towards corporate buyers and creates new risks through trade protectionism.

Corporate and state-level drivers

Many US retailers and food companies continue to pursue ambitious sustainability targets regardless of federal deregulation. These include commitments to regenerative agriculture, lower emissions and biodiversity protection across their supply chains. Large FMCG companies and major retailers are requiring suppliers, including international suppliers, to demonstrate progress against these targets. State-level laws, particularly in California, also maintain strict requirements for supply chain transparency and labour practices.

Federal deregulation (impacting US farmers more than imports)

The current US administration has reduced or removed several climate and conservation programs, withdrawn from the Paris Agreement and softened mandatory ESG reporting (e.g. SEC Scope 3 emissions). The US Environmental Protection Agency (EPA) has proposed to rescind the 2009 "endangerment finding", a keystone of federal climate authority under the *Clean Air Act*. This proposed rollback, announced in July 2025 with public consultation finalised in August 2025 still faces significant challenges before it is finalised. If finalised, this rollback would significantly weaken the federal regulatory baseline for GHGs.

These policy reversals lower compliance obligations for US producers and corporations without directly impacting imports. For exporters to the US, the key consequence is that federal climate policy no longer sets the national benchmark for sustainability; instead, expectations are increasingly determined by state governments and corporate buyers.

Trade and import-relevant measures

The Renewable Fuel Standard (RFS)²⁸ continues to shape demand for biofuel feedstocks in the US. While blending targets remain high, EPA proposals halve the value of renewable identification numbers (RINs) for imported feedstocks compared to domestic alternatives, placing Australian canola and similar exports at a disadvantage.

The backlog of small refinery exemptions has been resolved, reshaping biofuel credit markets and potentially reducing demand for imported inputs.

²⁸ <https://www.epa.gov/renewable-fuel-standard/overview-renewable-fuel-standard-program>

The administration has signalled further use of tariffs and preferential treatment for domestic supply chains. The proposed *Foreign Pollution Fee Act*²⁹ would apply carbon-intensity-based tariffs to imports, creating uncertainty for emissions-intensive commodities.

Labour and supply chain transparency measures, such as the *Uyghur Forced Labor Prevention Act*³⁰ (UFLPA), remain in place and continue to apply to imports, regardless of deregulation elsewhere.

Implications for Australia

While US federal deregulation reduces the likelihood of broad climate-related import standards in the short term, exporters face a dual challenge:

1. Market-driven compliance with corporate and state sustainability requirements remain in place.
2. Trade protectionism in the form of preferential treatment for US producers, tariffs or non-tariff barriers.

For Australian exporters, the US therefore presents a more fragmented landscape: fewer direct federal sustainability rules, but strong buyer requirements and higher risk of trade measures that privilege domestic over imported products.

²⁹ <https://www.congress.gov/bill/119th-congress/senate-bill/1325/text/is>

³⁰ <https://www.cbp.gov/trade/forced-labor/UFLPA>

East and Southeast Asian requirements and drivers

Formal sustainability requirements remain less defined across many Asian countries. Expectations are rising however, particularly among multinational buyers operating in the region who require suppliers to meet group-wide ESG standards.

In such cases, compliance with global standards may be required, even when local regulatory frameworks are still developing.

Japan and South Korea: Leading premium market demands

Japan's focus on organic certification through the Japanese Agricultural Standards (JAS)³¹ mirrors the EU's emphasis on organic production standards. The country continues to strengthen certification requirements, reflecting growing consumer awareness of sustainability issues.

South Korea's premium buyers are placing greater emphasis on traceability, animal welfare and environmental impact, particularly for imported meat and dairy products. The growth of regenerative agriculture initiatives and digital transparency tools in retail supply chains is directly influencing procurement policy design across the market.

China: Regulatory evolution and corporate alignment

China, Australia's largest agricultural market, is progressively strengthening environmental regulations through its Sustainability and Green Trade Standards, particularly relating to GHG emissions and food safety. Though initially driven by domestic concerns, such as air quality and food safety assurance rather than climate goals, the country's policies show growing alignment with international frameworks.

For cereals and vegetables, the Green Food Standard³² in China is a certification system that focuses on promoting agricultural products that are produced sustainably, with minimal environmental impact. It emphasises the use of safe agricultural practices, particularly concerning the responsible use of fertilisers, pesticides and water, to ensure that products are environmentally friendly and safe for consumers.

There is increasing interest in deforestation-free sourcing protocols that align with global supply chain expectations. Emerging initiatives such as the Taskforce on Green Value Chains for China³³ promote corporate adoption of deforestation-free supply chains, especially for commodities including soy, beef, palm oil and timber.

³¹ https://www.maff.go.jp/e/policies/standard/specific/organic_JAS.html

³² <https://standardsmap.org/en/factsheet/154/overview>

³³ <https://www.weforum.org/press/2023/06/businesses-to-drive-green-transition-of-china-s-beef-palm-oil-and-soy-supply-chains/>

These initiatives signal growing expectations that imported products demonstrate alignment with environmental and social responsibility benchmarks, particularly those addressing land use change and ecological impact.

Certifications such as MSC are important for seafood exports although for some East and Southeast Asian markets, the demand for Australian product outstrips expectations around evidence-based sustainability claims.

Implications for Australia

Australia's reputation for clean and safe production continues to provide strong market entry advantages across many product categories in Asia, particularly seafood, wine and horticulture. However, this market position is becoming increasingly contingent on the ability to demonstrate alignment with recognised sustainability standards and to provide verifiable evidence to support claims.

This shift is most pronounced in competitive and high-value export segments, where sustainability claims are becoming essential requirements rather than optional differentiators.

Finance and investment sector drivers

While the scope of this project is international market access and trade regulations, the finance sector is rapidly embedding sustainability expectations into lending and investment decisions. Several international initiatives are shaping these requirements:

- The IFRS Foundation's S2 Climate-related Disclosures Standard³⁴ (that builds on Taskforce on Climate-related Financial Disclosures (TCFD) recommendations³⁵) and the Taskforce on Nature-related Financial Disclosures (TNFD)³⁶ are being adopted by global financial institutions, with mandatory disclosure regimes emerging in multiple jurisdictions. These frameworks require that companies report on climate and nature-related risks, driving demand for transparent, consistent data from agricultural supply chains.
- The Science-Based Targets initiative (SBTi)³⁷ and the Accountability Framework initiative (AFi)³⁸ extend market and investor pressures into commodity supply chains. Companies making SBTi commitments increasingly require agricultural suppliers to provide credible, auditable data on emissions and land use to demonstrate that production is deforestation-free, while AFi embeds expectations for deforestation- and conversion-free sourcing.

Implications for Australia

These initiatives influence both supply chain buyers and financiers, meaning Australian producers may be asked to supply evidence to support a commodity declaration, an export transaction or a sustainability-linked loan.

Finance sector requirements, therefore, cannot be treated separately from trade requirements. Harmonised data and verification approaches are needed to ensure the same evidence can underpin claims across regulatory compliance, supply chain buyer requirements and financial disclosure obligations.

³⁴ <https://www.ifrs.org/issued-standards/ifrs-sustainability-standards-navigator/ifrs-s2-climate-related-disclosures>

³⁵ <https://tnfd.global/recommendations>

³⁶ <https://tnfd.global/>

³⁷ <https://sciencebasedtargets.org/standards-and-guidance>

³⁸ <https://accountability-framework.org/the-accountability-framework/core-principles>

3. Essential sustainability claims

Sustainability topics international markets and regulators are identifying as critical

For market and regulatory purposes, expectations for **sustainability topics** that require evidence to underpin claims were found to be most commonly:

1. carbon emissions and climate impacts;
2. animal welfare (for animal-based sectors)
3. water use and impacts;
4. biodiversity and ecosystem health;
5. labour rights and working conditions;
6. supply chain transparency and traceability;
7. soil health and land management;
8. chemical use and residues; and
9. resource efficiency and circular economy

These are typically “hard” regulatory or quasi-regulatory expectations and expected to be measurable, verifiable and often tied to trade access or legal risk.

Even for animal-based sectors, topics such as carbon, water, biodiversity and social factors were raised as higher priorities requiring evidence to support a sustainability claim. Animal welfare is very specific to each animal-based commodity and, in many cases, appears to be factored into supply chain transparency where information on either farming practices (e.g. organic, ‘non-mulesed’) or the fact animals can be traced, is used as a proxy for welfare outcomes.

Food safety was a more significant concern in some markets and sectors than other sustainability related topics. Over the course of the project regenerative agriculture was identified as being of increasing interest, although it was noted there is currently no clear definition of what constitutes “regenerative agriculture”. Policies and management systems were cited as critical “topics”. However, these function primarily as forms of evidence to support other sustainability topics.

Each sustainability topic is supported by a set of **evidence focus areas**, which outline the kinds of information expected to be available to substantiate performance.

The following sections describe evidence focus areas, noting that this may be what is expected to underpin claims (or may be emerging as expected) rather than what is requested. For example, in most certification programs, supply chain participants are unlikely to request evidence specifically but rather rely on the certification process to verify that evidence exists (e.g. the certificate is the evidence). Further, certification schemes do not necessarily mandate measures and the collection of associated metrics but rather are focused on practice change or sustainability outcomes being achieved.

Carbon emissions and climate impact

One of the most significant evidence focus areas for all international markets is the carbon footprint of agricultural production. This includes:

- **Measurement of on-farm emissions:** Evidence to show the emissions generated by agricultural activities, including livestock management, crop cultivation and energy use are known. This could also include quantifying emissions from fuel usage, fertiliser application and machinery operation.
- **Lifecycle carbon footprint:** Evidence of the total greenhouse gas emissions produced across all stages of a product's life, from raw material extraction to processing, packaging, transport, and delivery to the final consumer.
- **GHG emissions inventory:** Evidence of accounting for direct (Scope 1), indirect energy (Scope 2) and other supply chain-related (Scope 3) greenhouse gas emissions.
- **Emissions reduction measures:** Evidence of practices that actively reduce or offset emissions. This can include maintaining records on renewable energy use, reductions in the use of fossil fuels, improved agricultural practices such as reduced tillage, precision farming and reforestation projects that sequester carbon.

Animal welfare

Animal welfare is a prominent requirement in international markets for animal-based sectors, often carrying equal importance as to GHG emissions. Buyers and regulators increasingly prohibit certain animal management practices and mandating welfare standards as conditions of market access.

Evidence focus areas include:

- **Treatment practices:** Compliance with restrictions or bans on certain procedures (e.g. surgical mulesing, routine tail docking, on-farm euthanasia).
- **Use of pain relief:** Records demonstrating that pain relief is used during necessary painful husbandry procedures.
- **Access to shade and shelter:** Evidence that animals have access to environments that support welfare outcomes.
- **Mortality and health records:** Data on survival rates, disease prevalence and interventions.

Importantly, international markets increasingly view animal welfare as interconnected with other sustainability topics. Weakness in welfare assurance can undermine the credibility of broader sustainability claims. Animal welfare links directly with:

- **GHG emissions and climate impact:** Through feed efficiency, herd health and mortality rates.
- **Water use and impacts:** Via stock access to water and, in intensive industries, effluent management.
- **Biodiversity and ecosystem health:** Through grazing management, shelter and habitat condition.
- **Labour rights and working conditions:** Animal health and welfare depends on skilled, competent labour for animal handling.
- **Supply chain transparency and traceability:** Since many welfare claims (e.g. free-range, non-mulesed, antibiotic-free etc.) rely on traceability and labelling.
- **Chemical use and residues:** With antimicrobial and pesticide stewardship both a welfare and public health requirement.

Water use and impacts

Evidence demonstrating efficient use of water and sustainable water management practices is often required to gain market access. Evidence focus areas typically include:

- **Water use data:** Quantifying the total water used in agricultural production, from irrigation to processing, showing that usage is within sustainable limits and that water is being used efficiently and responsibly.
- **Water-saving and efficiency practices:** Evidence that water is being used efficiently and responsibly, such as records showing reduced consumption, improved output efficiency, or recycling and reuse of water within production systems.
- **Water quality:** Some markets may request impact assessments to demonstrate that agricultural activities do not harm local aquatic ecosystems. This can involve measuring the quality of water discharge and showing that pollution from runoff or chemicals is being effectively managed.

Biodiversity and ecosystem health

International markets are increasingly demanding evidence that agricultural production does not harm local ecosystems, contribute to deforestation or result in habitat destruction. Evidence focus areas include:

- **Land use information:** Providing information on how land is used for agricultural production, including evidence that natural ecosystems such as forests and wetlands are protected. This may also include records showing that farming practices do not contribute to soil degradation or erosion.
- **Wildlife and habitat conservation:** Evidence that agricultural practices support local biodiversity, rather than harming it. This can include records on efforts to maintain wildlife corridors, protect endangered species or implement practices that enhance biodiversity, such as regenerative agriculture.
- **No deforestation:** For the EU, and likely to apply to those markets seeking to align with the EU, evidence that agricultural products are not sourced from deforested areas is becoming critical.

Labour rights and working conditions

International markets increasingly requiring assurance that agricultural products are not linked to forced labour, unsafe conditions or other labour rights violations. Modern slavery and due diligence laws in the EU and US extend across supply chains, with expectations that producers demonstrate alignment with recognised international standards. Evidence focus areas include:

- **Fair wages and conditions:** Records showing workers are paid in accordance with legal entitlements and industry awards.
- **Safe workplaces:** Evidence of compliance with occupational health and safety obligations, including training records and incident reporting.
- **Ethical treatment:** Documentation that workers are treated fairly, free from coercion or exploitation.
- **Alignment with international standards:** Where possible, mapping compliance with Australian labour laws (e.g. Fair Work Act, Modern Slavery Act, WHS legislation) to international benchmarks (e.g. International Labour Organization (ILO) conventions, UN Guiding Principles) to demonstrate equivalence in global markets.

It should be noted that the need to demonstrate that Australian regulation is recognised as meeting international expectations creates two risks for Australia:

- **Equivalence gap:** Australia's strong domestic laws may not automatically be recognised as equivalent by trading partners or may not be equivalent to international standards (e.g. ILO

conventions that set minimum age of employment as 15, whereas Australian state and territory regulations set younger age limits).

- **Framing gap:** Exporters may need to translate compliance with Australian regulation into evidence that aligns with international standards, to ensure credibility and recognition in global markets.

Supply chain transparency and traceability

Increasingly companies, particularly in the US, require greater transparency across supply chains. Evidence focus areas include:

- **Origins and legality:** Records of country/region of origin.
- **Traceability:** Documented chain-of-custody/lot identification along the supply chain.
- **Disclosure and due diligence:** Supplier declarations and risk screening aligned with applicable laws.

Soil health and land management

Many international markets require evidence that agricultural practices maintain or improve soil health. Evidence focus areas include:

- **Soil organic matter and carbon sequestration:** Evidence of efforts to increase soil organic matter and carbon content is increasingly important for markets focused on climate change mitigation. This can involve soil testing results showing improvement in soil fertility and carbon storage over time.
- **Erosion control and sustainable farming practices:** Demonstration that soil is managed sustainably to prevent erosion and degradation. Evidence can include records about cover cropping, reduced tillage or other conservation practices that maintain soil structure and prevent erosion.
- **Nutrient management:** Many markets require evidence that fertilisers are used efficiently and sustainably, with minimal environmental impact. This can involve providing records on nutrient application rates, runoff prevention and soil nutrient monitoring.
- **Regenerative practices:** There is increasing demand for products that adhere to 'regenerative' agricultural principles, noting that this term lacks a clear definition.

Chemical use and residues

Chemical stewardship is increasingly subject to strict regulation, particularly in the EU where pesticide use and residues are tightly controlled. Evidence is required to demonstrate both

compliance with market thresholds and responsible management of chemical inputs. Evidence focus areas include:

- **Residue compliance:** Testing showing products meet maximum residue limits (MRLs) in export markets.
- **Hazardous chemical restrictions:** Evidence of phase-out or substitution of chemicals subject to regulatory bans or limits.
- **Integrated pest and weed management:** Records of practices that reduce reliance on chemical controls, such as crop rotations, resistant varieties or biological alternatives.
- **Safe handling and storage:** Documentation of chemical storage, application, disposal and training practices consistent with regulatory standards.
- **Antimicrobial use (livestock sectors):** Data on quantities and classes of antimicrobials used, including compliance with bans on growth-promoting claims.

Resource efficiency and circular economy

International markets are increasingly interested in evidence that producers are using resources efficiently and adopting circular economy principles. This involves minimising waste, reusing materials and ensuring that by-products are repurposed. Evidence focus areas include:

- **Waste reduction data:** Providing information on how much waste is generated during production and processing and what percentage of that waste is recycled, composted or reused. Evidence of reduced food waste, especially in the supply chain, is particularly important for markets focused on sustainable consumption.
- **Resource input efficiency:** Markets require records showing that inputs like energy, water and raw materials are being used efficiently. This can include energy audits, evidence of renewable energy use or data on input-output ratios in production processes.
- **Recycling and by-product utilisation:** Evidence that by-products from agricultural production (e.g. crop residues, animal manure) are being repurposed, either for energy generation, soil improvement or other productive uses, is increasingly required.

Policies and management systems

In some cases, the expectation for evidence relates to the existence of policies relating to labour practices, environmental protection, as well as the conversion of these policies into day-to-day management practices. This is a risk-based approach to evidence which considers if an organisation has appropriate management practices and the controls in place to ensure these practices occur. These expectations are cross-cutting and apply across topics (e.g. water, labour, chemical use), focusing on whether an organisation has policies, procedures and controls that are implemented and verifiable.

Sustainability topics Australia’s agricultural sectors and industry are identifying as critical

Sustainability in agriculture is a multifaceted issue that involves balancing environmental, economic, and social factors. To create credible and impactful sustainability claims, Australian agriculture has identified a set of priority sustainability topics that address international market demands and reflect Australia’s unique environmental and farming conditions.

Much of this work has been done sector by sector with the introduction of Australian-based sectoral sustainability frameworks, including those listed in Table 1.

More recently, the identification of priority sustainability topics has been approached from a whole of industry perspective through the development of the AASF. It is recognised that this prioritisation also occurs privately by some post-farm gate actors in the supply chain defining corporate sustainability targets or commitments.

Table 1 Australian-based agricultural sustainability frameworks

Sectors in scope ^a	Australian-based sustainability framework
Beef	Australia Beef Sustainability Framework (ABSF) ³⁹
Canola	Australian Grain Industry Sustainability Framework (AGSF) ⁴⁰
Cotton	PADDOCK:PEOPLE:PLANET – the Australian Cotton Sustainability Framework (ACSF) ⁴¹
Dairy products	Australian Dairy Sustainability Framework (ADSF) ⁴²
Horticulture	Australian-grown Horticulture Sustainability Framework (AHSF) ⁴³
Wheat	Australian Grains Industry Sustainability Framework (AGSF)
Wool	Australian Sheep Sustainability Framework (ASSF) ⁴⁴
All of agriculture	Australian Agricultural Sustainability Framework (AASF) ⁴⁵

a The Australian seafood industry does not have a sustainability framework, like other sectors, instead relying on the MSC.

Prioritisation of sustainability topics varies sector-to-sector and across enterprises. Sectors and some organisations undertake regular materiality assessments to help identify which sustainability topics

³⁹ <https://www.sustainableaustralianbeef.com.au/>

⁴⁰ <https://www.graingrowers.com.au/news/australian-grains-industry-sustainability-framework>

⁴¹ <https://australiancotton.com.au/planet-people-paddock>

⁴² <https://australiandairyfarmers.com.au/adsf/>

⁴³ <https://www.horticulture.com.au/hort-innovation/our-work/horticulture-sustainability-framework>

⁴⁴ <https://www.sheepsustainabilityframework.com.au/>

⁴⁵ <https://aasf.org.au/>

are most material (typically rated: highly material, material and important) to their sector or business so that principles and criteria can be established for monitoring and measuring performance and reporting, and to develop strategies and plans for change.

A review of materiality assessments undertaken by sectors in scope shows the shared topics that are most commonly ranked as material (Table 2). This is not to say other topics that appear to be gaps are not material, only that those sectors materiality assessments did not have these in their top 10 most highly material topics. It is also important to note that materiality assessments are not uniform; organisations apply different approaches, including single, double and other sector-specific forms, and these variations influence how material topics are identified and prioritised.

Table 2: Most common material topics across sectors and industry

	Beef	Canola	Cotton	Dairy	Hort	Wheat	Wool	All
1. GHG emissions	✓		✓	✓			✓	✓
2. Animal wellbeing and husbandry	✓	N/A	N/A	✓	N/A	N/A	✓	✓
3. Biodiversity, ecosystems and deforestation	✓	✓	✓		✓	✓	✓	✓
4. Water, security, access and use	✓	✓	✓	✓	✓	✓	✓	✓
5. Soil health and management	✓	✓	✓		✓	✓	✓	
6. Biosecurity	✓	✓		✓	✓	✓	✓	✓
7. Worker health, safety and wellbeing		✓	✓	✓		✓	✓	✓
8. Food / product safety and quality				✓	✓		✓	✓
9. Climate change adaptation / resilience		✓		✓		✓		✓

Alignment of priorities

An analysis of the material topics identified through sectoral sustainability materiality reports, and the priority topics of international markets and regulations show both alignment and differences in prioritisation.

Aligned topics

- **GHG emissions:** indicating a shared recognition of the importance of addressing climate impact as a critical element of sustainability.
- **Animal welfare:** reflecting its importance in sectors involving animal production.
- **Biodiversity and deforestation:** shared recognition, although markets/regulators emphasise deforestation-free sourcing, while sectors stress ecosystem stewardship.
- **Water use and security:** identified as essential from both perspectives, although markets/regulators tend to frame this more narrowly (i.e. resource efficiency).

Topics where sectors place a higher priority than markets/regulators

- **Chemical use:** industry places a greater emphasis on avoiding chemical residues, likely due to market access concerns over environmental and human health impacts.
- **Soil health:** indicating its importance in the agriculture industry's view of sustainability but suggesting that markets/regulators might prioritise other environmental impacts over this aspect.
- **Biosecurity:** reflecting its importance to sectors vulnerable to diseases and pests but suggesting that markets/regulators may see it as less central to sustainability claims or potentially, indicating an implicit expectation of trading with Australia given its historical and enduring focus on biosecurity as an island nation.
- **Worker health, safety and wellbeing:** reflecting a difference between ensuring a safe and healthy workplace environment compared with a broader concern with ethical labour practices, such as preventing exploitation and ensuring fair treatment (markets/regulators).
- **Climate change adaptation and resilience:** representing a focus by industry on preparing for and adapting to climate impacts, whereas markets/regulators focus more on emissions reduction.

Topics that markets/regulators prioritise higher than sectors

- **Chemical use:** markets/regulators place a significant emphasis explicitly on reducing chemical inputs, as opposed to avoiding chemical residues.
- **Labour and human rights:** reflecting a difference between ensuring a safe and healthy workplace environment (industry) compared with a broader concern with ethical labour practices, such as preventing exploitation and ensuring fair treatment (markets/regulators).

This analysis indicates that industry tends to focus on self-reporting, sector-level governance while markets/regulators focus on initiative integrity such as double materiality assessments, independent oversight and third-party verification against standards.

Implications for Australia

The shared focus on GHG emissions, animal welfare, water use, biodiversity and deforestation indicates strong alignment between industry and markets/regulators on key environmental and ethical concerns. This suggests these topics may be central to whole-of-industry sustainability reporting and claims of compliance with global market expectations.

Soil health, biosecurity and climate resilience and adaption may be highly material for Australia, but if they are not prioritised in market requirements or regulations, leveraging them as primary sustainability claims will be problematic.

Priorities of markets/regulators not considered as highly material (e.g. chemical use, labour rights etc.) by industry risk becoming non-tariff trade barriers. This may also apply where markets/regulators expect integrity initiatives such as independent oversight and third-party assurance against standards, and these activities are not undertaken by industry organisations.

Priority sustainability topics

Analysis of international market and regulatory expectations and Australian sector priorities identified nine sustainability priorities that are considered important and six that consistently emerge as the most critical. These are the areas where alignment is strongest and where credible, comparable credentials will be essential for underpinning sustainability claims across all of agriculture:

1. GHG emissions
2. Animal welfare
3. Water stewardship
4. Biodiversity and deforestation
5. Soil health
6. Labour rights and working conditions

Other topics, such as chemical use and residues, resource efficiency, and circular economy and supply chain transparency, remain important, but are best treated as cross-cutting enablers or emerging issues rather than core priorities.

To make this prioritisation meaningful, two perspectives need to be applied:

- **Where they matter most:** the markets and sectors in which each topic is most relevant, reflecting both regulatory expectations and commercial drivers.
- **How they are used:** the different ways in which they could be used (e.g. regulatory compliance, market access, sector benchmarking, producer decision-making).

The sustainability topics where Australian agriculture should focus its effort on credentials required to underpin sustainability claims are highlighted in Table 3. These also demonstrate that, while a common set of topics can be identified, there will be variability depending on relevance and intended use. These priorities reflect market-led expectations observed to date but are not exhaustive nor definitive. A transparent, structured and rigorous process is needed to determine key indicators and metrics that are fit-for-purpose for Australian agriculture, internationally credible, and supported by both industry and government.

Such a process should build on the work underway through the AASF, a National Farmers' Federation (NFF)-led project, funded by DAFF, that provides a national reference point for aligning sustainability efforts across Australian agriculture. A key component of the AASF, the AASF Data Ecosystem, has been proposed to support consistent, credible and trusted indicators and metrics. Incorporating the recommendations from *AASF Data Ecosystem Design – Final Report* (Kostanski et al 2025⁴⁶) will help ensure these indicators and metrics are context-specific, comparable and evidence based and that any sustainability claims aligned to them are credible and trusted.

⁴⁶ Kostanski L, Lemon D, and Lythall A (2025). From Anarchy to Order: AASF Data Ecosystem Design Project – Final Report. CSIRO, Australia. <http://hdl.handle.net/102.100.100/701548?index=1>

Table 3: Priority sustainability topics, markets, sectors and example uses

Topic	Example markets where priority may be highest	Sectors in scope most affected	Uses			
			Regulatory compliance	Market access	Sector benchmarking	Producer decision-making
GHG emissions	<ul style="list-style-type: none"> • EU, US, Asia • Domestic 	Beef, dairy, grains (wheat, canola), cotton, horticulture, wool, seafood	EU CSRD/CBAM/US climate disclosure, domestic reporting alignment	Meeting buyer Scope 3 targets, net zero supply chain policies (EU retailers, US food companies, Asian importers)	Reported in ABSF, AASF, ACSF ADSF, AGSF	Efficiency tracking, mitigation planning (feed, fertiliser, energy use), sustainability linked loans
Animal welfare	<ul style="list-style-type: none"> • EU, US • Premium Asian markets 	Beef, sheep, wool, dairy, seafood (welfare and bycatch practices)	EU bans on mulesing/tail docking; antimicrobial restrictions	Buyer/retailer standards (e.g. “non-mulesed,” RSPCA Approved, US/Asian retailer codes); seafood welfare/bycatch requirements	Reported in ABSF, ASSF, ADSF	Herd/flock health; aquaculture welfare; reduce losses; improve outcomes
Water stewardship	<ul style="list-style-type: none"> • EU, US, • Premium Asian markets • Domestic 	Cotton, dairy, horticulture, grains, seafood (aquaculture water use and discharge)	Domestic water entitlements/licensing; discharge limits for farms and aquaculture	Buyer requirements (water foot printing in EU/US; efficiency standards in Asia)	Reported in ADSF, ACSF, AHSF, AGSF	Irrigation scheduling; water budgeting; aquaculture water quality management
Biodiversity & deforestation	<ul style="list-style-type: none"> • EU, US, Asia 	Beef, grains (esp. canola), horticulture, cotton, seafood (ecosystem/biodiversity impacts)	EU EUDR (geolocation proof); US due diligence laws; marine protection rules	Retailer zero-deforestation commitments (EU/Asia); seafood biodiversity/MSC requirements	Reported in ABSF, ACSF, AGSF, AHSF, AASF	Vegetation management; biodiversity corridors; aquaculture ecosystem stewardship
Soil health	<ul style="list-style-type: none"> • EU, US • Domestic 	Grains, beef, cotton, dairy, horticulture	Domestic soil/land conservation rules; nutrient runoff limits	Buyers seeking regenerative ag credentials (EU/US retailers, premium Asia), US soil carbon initiatives	Reported in ABSF, ASSF, ACSF, AGSF, AHSF, AASF	Soil testing; nutrient budgeting; regenerative practices
Labour rights & working conditions	<ul style="list-style-type: none"> • EU, US • Domestic 	Horticulture, beef, cotton, beef, dairy, seafood (processing and harvesting)	Fair Work, WHS, Modern Slavery Act; EU CSDDD; US UFLPA	Retailer/brand codes of conduct; compliance for access to EU/US; seafood labour rules	Reported in ABSF, ASSF, ADSF, ACSF, AHSF, AASF	WHS systems; workforce planning; evidence of fair work practices

4. Current approaches to assuring claims

Forms of evidence expected to underpin claims

Expectations about what forms of evidence are appropriate to support sustainability claims vary between stakeholders, markets and commodities. Generally they can be classified based on the different methods of assurance identified previously, each with its own set of benefits and inadequacies. These are summarised in Table 4. Overall typical evidence expectations relate to:

1. First-party assurance

“Trust me because I told you.”

- **Declarations, templates and tools**

In some sectors, self-declarations or templates are used to provide evidence of compliance, for example:

- Carbon calculators (e.g. Cool Farm Tool, industry-specific GHG calculators) used to generate emission declarations.
- Supplier codes of conduct required by global retailers and FMCG companies.
- Lifecycle assessment tools developed by Australian Wool Innovation (AWI) to provide data into the EU Product Environmental Footprint.
- Agriculture Innovation Australia’s (AIA’s) Environmental Accounting Platform (EAP), designed to standardise farm-level environmental accounts and provide consistent declarations across commodities.

- **Demonstration of regulatory alignment**

In some cases, evidence of compliance with Australian regulation (e.g. modern slavery, health and safety laws) is presented, for example:

- Modern Slavery Act 2018 compliance statements lodged by Australian agrifood companies.
- Chemical stewardship evidence through APVMA’s regulatory approvals system for pesticides.
- Work health and safety legislation demonstrated through safety awards, training records or incident reporting.
- Fair Work Act compliance evidenced by payroll records and employment contracts.

2. Second-party assurance

“Trust me because an organisation I am associated with has checked.”

- **Private programs**

Similar to third-party assurance programs but a level of governance and control is

exerted by an entity that has an interest in the organisation (e.g. an industry body, buyer or supply chain partner). A certificate can also be an output of the assurance process. Examples include:

- Cotton industry’s myBMP program.
- Private processor certification programs.
- **Sector-based sustainability frameworks and reports**
Sector-level frameworks (e.g. ABSF, ASSF, ADSF, ACSF etc.) provide structured reporting on material topics and demonstrate sector commitment to sustainability, noting that in many cases these were not considered as evidence by supply chain stakeholders but rather informative in nature (refer examples in Table 1).
- **Customer audits**
Supply chain actors conduct their own audits, in addition to the use of certification, for example:
 - Retailer-led audits (e.g. Coles or Woolworths farm audits, UK supermarket ethical audits).
 - Sedex Members Ethical Trade Audit (SMETA) for suppliers into European food retailers.
 - Private buyer audits in wine and cotton supply chains to check sustainability practices beyond certification.

3. Third-party assurance

“Trust me because an independent body has checked.”

The most recognised form of assurance across markets, with supply chain participants often requiring third-party certification. Here confidence in a claim is derived through having confidence in the third-party assurer and their processes.

These programs are generally specific to a commodity, for example:

- MSC Certified Sustainable Seafood program (seafood)
- GLOBAL G.A.P. (plant based)
- Australian Wool Sustainability Scheme (AWSS) (wool)
- ISCC program (principally for canola)
- Leading Harvest
- Green Food certification (China)(plant based)
- Fair Trade
- Regenagri
- Organic certification (Australian Certified Organic, JAS, USDA Organic, etc.)

In this case, the form of evidence supporting a claim is a certificate or statement of conformity issued by the third-party.

Technology-enabled assurance

Increasingly, technology is being relied upon to support assurance mechanisms. Examples include:

- **Traceability and data systems**

Robust traceability or data systems are considered key to supporting sustainability claims, for example:

- NLIS (National Livestock Identification System) for livestock traceability (currently for food safety, biosecurity and market access purposes).
- Cotton sector data platform (under development) designed to integrate on-farm data and sustainability reporting.
- Wool traceability system being advanced to enhance fibre-to-garment provenance.
- Seafood Traceability Protocols under the National Agricultural Traceability Strategy.

A note on blockchain

Blockchain technology was widely promoted a few years ago as a potential solution for traceability and verification in agriculture. Use of the technology has not become commonplace but is sometimes used as a tamper-evident log in high-value or tightly governed chains. It does not solve interoperability nor value return on its own, and in many cases is seen as too costly, too complex and, due to its high energy consumption, having questionable sustainability credentials.

- **Satellite imagery, remote sensing and geolocation**

For example of crop cover to verify deforestation-free claims in grains and oilseeds. Required under the EU Deforestation Regulation.

- **IoT sensors and farm equipment data**

Used to validate resource use (e.g. water, fertiliser application).

Table 4: Forms of evidence currently relied upon to support sustainability claims

Method of assurance	Form of evidence relied upon	Benefits	Current inadequacies
First-party assurance	<ul style="list-style-type: none"> • Declarations, templates and tools • Demonstration of regulatory alignment 	<ul style="list-style-type: none"> • Low-cost and simple to implement. • Useful as a first step for engaging producers. • Can standardise information collection within a supply chain. • Australia’s regulatory baseline is well-established. 	<ul style="list-style-type: none"> • Low trust method of verification. • Data inconsistency (different tools produce different results). • Not interoperable or comparable across supply chains. • Perceived as “box-ticking” by regulators and markets. • Regulatory compliance often assumed domestically but not communicated, so appears absent to overseas buyers. • Exporters may still need additional certifications to prove compliance already ensured by law.
Second-party assurance	<ul style="list-style-type: none"> • Sector programs • Sector-based sustainability frameworks and reports • Customer audits 	<ul style="list-style-type: none"> • Helpful for sector-specific narrative and reputational positioning. • Useful as aggregated, baseline evidence to negotiate market access. 	<ul style="list-style-type: none"> • Low trust method of verification in some cases. • Data not granular enough for supply chain verification. • Often self-reported, raising credibility concerns. • Highly duplicative (“audit fatigue” for suppliers with multiple buyers). • Audit results siloed, not shared or interoperable. • Focuses on compliance snapshots, not continual improvement.
Third-party assurance	<ul style="list-style-type: none"> • Certificate or statement of conformity • Examples: <ul style="list-style-type: none"> ○ MSC ○ GLOBALG.A.P. ○ AWSS ○ ISCC ○ Leading Harvest ○ Green Food ○ Fair Trade ○ Regenagri ○ Organic certification 	<ul style="list-style-type: none"> • Widely recognised by markets and regulators; accepted “passport” for access. • Typically provides structured standards that are relatively well-understood. 	<ul style="list-style-type: none"> • Data opacity: underlying evidence is often not visible, only the certificate. • Certificates not always interoperable with traceability or other systems. • Schemes vary in credibility (practice- vs outcome-based). • Cross-commodity producers face duplication with multiple certifications. • Certification fatigue due to proliferation of schemes. • Regulatory, sector or national-scale datasets not generally accept as evidence, relies on farm-scale. • Inconsistent requirements when looking for cross-sectorial or national comparability between schemes.

Insights

Certification does not automatically confer trust

Certification remains the most widely recognised and expected form of evidence when it comes to demonstrating sustainability claims, particularly for exports to Europe, North America and East and Southeast Asia. It provides assurance that claims have been verified against a defined standard and, in many markets, is treated as the minimum requirement for access.

At the same time, certification alone does not guarantee trust. Concerns have emerged about the independence and rigour of some certification schemes, particularly those governed and controlled by industries or supply chain actors (referred to here as second party assurance). This leads to greater scrutiny, not only of the standards and claims, but of the governance arrangements that underpin them. This trend is shifting the certification landscape towards more independent, third-party based models. Two recent developments illustrate this shift:

- The EU Corporate Sustainability Due Diligence Directive (CSDDD) raises expectations for how companies demonstrate due diligence by strengthening requirements for transparency and effectively pushing supply chains towards independent and credible assurance mechanisms, even though it does not prescribe specific verification models.
- The ISEAL Codes of Good Practice and Credibility Principles (ISEAL Code)⁴⁷ set clear benchmarks for the governance and integrity of sustainability standards systems, covering independence, transparency, assurance models and stakeholder engagement. These provide a reference point for credible certification.

These developments and shifting attitudes highlight that trust in, and credibility of, sustainability claims depend not only on evidence, but on the assurance mechanism used and, critically, on the independence, transparency and governance (referred to as 'integrity initiatives') of the assurance mechanism.

⁴⁷ <https://isealliance.org/what-we-do/credible-practice/iseal-code-good-practice-sustainability-systems>

Value versus burden

Producers are managing increasing demands for evidence, often across multiple sustainability credentialing programs, while also operating in an environment of tight margins, limited time and constrained capital. Against this backdrop, engagement with sustainability credentialing programs by producers will only occur if they provide a clear return on effort. That is, producers are unlikely to engage with such programs unless they clearly deliver commercial, market, regulatory or reputational value, and that value must offset the cost of compliance. In many cases, producers are looking for value in the form of a price premium, returned to them.

Across the broader system, there is increasing proliferation of sustainability credentialing programs of variable rigour. Some are robust, transparent and internationally recognised; others are opaque, duplicative or lack credible verification. For producers, this diversity translates into growing demands for evidence across multiple schemes, often with overlapping or inconsistent requirements but uncertain commercial return. The result is confusion among buyers and producers alike about what genuinely underpins a sustainability claim and frustration where the effort to demonstrate compliance outweighs the perceived value. Yet, despite this fragmentation, there appears to be limited appetite for a single, mandatory scheme across all of agriculture.

The proliferation of requirements risks compounding administrative burden, diverting time and resources away from production and undermining both productivity, competitiveness and ultimately viability. Ensuring that assurance mechanisms reduce duplication and deliver tangible value, rather than adding unsustainable overheads, is central to producer engagement and long-term sector competitiveness.

There is a danger in assuming price premiums will arise as a tangible value. In many markets, financial rewards for producers are not guaranteed, and in most cases do not materialise, while compliance costs can be significant.

While a deep analysis was not within the scope of this project, a general assessment of the programs and initiatives in section 4 and their return of premiums to producers (as those who have to implement the requirements) found that farm-gate premiums are the exception, not the rule:

- **Beef:** Farm-gate premiums are possible in organic supply chains and some private processor/brand programs (e.g. grass-fed, “Never Ever”). In restricted channels such as the European Union Cattle Accreditation Scheme (EUCAS), small incentives may apply. Frameworks (e.g. ABSF) function as market access or narrative tools and do not deliver direct producer premiums.
- **Wool:** Organic schemes can deliver retail-side premiums and the Responsible Wool Standard (RWS), though business-to-business rather than consumer-facing, has delivered farm-gate premiums in Australia. However, these remain variable and not guaranteed. Sustainability credentialing programs without a consumer-facing label (e.g. AWSS) generally do not create farm-gate price lifts, and framework-type schemes (e.g. ASSF) do not include a mechanism for farm-direct premiums.

- **Wine and horticulture:** GLOBALG.A.P./SMETA are baseline requirements to trade. In some markets (e.g. Nordic countries, UK), sustainability credentials are necessary for market eligibility. However, they function as access conditions rather than providing a farm-gate price lift.
- **Cotton:** myBMP-certified growers can generate Better Cotton Credits (BCCUs), which may be sold in addition to lint, but these are traded separately and do not deliver a consistent farm-gate price lift. Organic cotton can deliver farm-gate premiums where identity-preserved fibre is required. More recent regenerative schemes such as RegenAgri are attracting premiums, supported by impact data and digital traceability.
- **Grains (wheat/canola):** ISCC is essential for EU biofuel markets sometimes improving basis or enabling eligibility. However, in broadacre food channels, the value of participating in a sustainability credentialing programs is typically market access rather than farm-gate price uplift.
- **Seafood:** MSC supports retail premiums, but these tend not to flow consistently back to producers. At the vessel/farm gate, premiums are inconsistent; the reliable value lies in market access and category placement.

Where premiums do occur, it is generally considered that they are usually:

1. retail-side rather than passed through the supply chain;
2. tied to consumer-facing labels; or
3. indirect via access to premium markets, such as ISCC enabling entry into EU biofuel channels.

For most sustainability credentialing programs, the value lies in market access, risk management and buyer acceptance rather than consistent producer premiums. Traceability and sustainability are increasingly prerequisites for trade, not differentiators that deliver higher value.

Appendix 2 provides a summary assessment although more work should be carried out to determine the true cost of compliance with sustainability credentialing programs (in particular third-party certification schemes and supply chain led verification initiatives) and quantify the value, if any, provided directly back to all participants as well as the industry more broadly.

In this context the value of sustainability credentialing programs lies in securing market access, reducing compliance risks, improving efficiency and reinforcing Australia's reputation for sustainable production. While these are noble aspirations, the value proposition of these is harder to sell to a producer than a price premium at the farm gate.

Fragmented assurance landscape

The ecosystem of assurance processes supporting sustainability claims in Australia is currently anarchic, fragmented and ad hoc. Over time, sectors, supply chains and jurisdictions have each developed their own credentialling or verification mechanisms in response to specific market demands, regulatory pressures or customer expectations. While many of these programs are credible and effective within their intended scope, their collective evolution has produced a patchwork system with overlapping requirements and limited interoperability.

Without a shared framework for recognising or aligning these initiatives, assurance efforts often operate in isolation, duplicating audits, generating inconsistent evidence and confusing both domestic and international audiences about what constitutes a credible claim. Producers experience this as compliance fatigue and rising costs, while buyers and regulators encounter opaque credentials and variable standards of rigour.

Further it is difficult to compare Australian sustainability claims against global benchmarks or to demonstrate equivalence with foreign standards. This weakens Australia's position in trade and policy negotiations and risks eroding trust in the integrity of its claims.

5. Emerging approaches to assuring credentials

Registry-based assurance approaches

While traditional certification remains a central requirement for access to many markets, it is not the only pathway to credibility. Increasing compliance costs, data duplication and shifting regulatory expectations are driving interest in registry-based approaches that can combine elements of certification, verification and traceability. Such approaches focus less on certifying every farm and more on creating transparent, trusted reference points about methodologies, datasets and comparability.

The potential of these approaches lies in reducing audit fatigue, enabling evidence to be collected once and applied many times, and making claims more coherent across commodities and markets. However, flexibility must not come at the cost of integrity. Without strong governance, these approaches risk being dismissed as insufficient or even greenwashing. Ensuring credibility requires:

- a nationally coordinated approach to provide consistency, transparency and shared reference points;
- independent oversight, assessment, or benchmarking without defaulting to full certification; and
- demonstration of alignment with international regulatory expectations.

The following examples illustrate how these approaches are already being applied noting these examples are used solely to illustrate how registry-based assurance model's function. Registry systems differ significantly in robustness, governance, funding, credibility and reliability, and the examples cited are not presented as best practice.

International

- **ITC Standards Map (International Trade Centre, UN/WTO)⁴⁸**

An online platform that maps and compares 300+ sustainability standards and certification schemes across topics and sectors. Provides transparency on scope, governance and assurance requirements without replacing the schemes themselves, helping to clarify what exists and how it compares.

- **SAI Platform's Farm Sustainability Assessment (FSA) Benchmarking⁴⁹**

Functions as a meta-framework that benchmarks different schemes against a common set of sustainability criteria, allowing recognition as equivalent without collapsing them into one system. Reinforces the concept of methodology comparability.

⁴⁸ <https://standardsmap.org/en/home>

⁴⁹ <https://saiplatform.org/fsa/>

- **ISEAL Credibility Principles⁵⁰ and Code of Good Practice for Sustainability Systems⁵¹**
A set of benchmarks for governance and integrity of sustainability standards systems, verifying whether schemes themselves follow good practice in governance, transparency, standards setting, assurance and stakeholder engagement. Indicates the process of auditing methodologies within a register, rather than auditing the producer.
- **EU Product Environmental Footprint (PEF) Database⁵²**
A harmonised set of lifecycle assessment methods and datasets. Multiple schemes can draw on these datasets, creating consistency of methodology even if assurance is decentralised.
- **Textile Exchange Preferred Fiber & Materials Matrix (PFMM)⁵³**
A comparative registry of different fibre sustainability schemes and methodologies, benchmarking them against environmental and social criteria. This allows buyers to understand what each scheme covers, where it is strong or weak and how it compares to others. The function is designed to provide a transparent reference point that does not replace schemes, but ensures comparability, credibility and clarity across them.
- **EU Digital Product Passport (DPP)⁵⁴**
Being rolled out across textiles and electronics, linking product-level sustainability attributes to a centralised digital registry accessible across supply chains.
- **Forest Stewardship Council (FSC) “Transaction Verification System”⁵⁵**
Matches claims across supply chain actors in a registry to detect discrepancies and prevent double-counting of certified volumes.
- **RSPO PalmTrace⁵⁶**
A registry that combines mass-balance chain of custody certification with real-time transaction tracking and verification of sustainable palm oil production claims.

National

- **APVMA Public Chemical Registration Information System Search (PubCRIS)⁵⁷**
A central register listing approved chemicals, uses, and permissible residue limits. Provides clarity on what chemicals can be used on farm that are valid and legally recognised, without certifying farms to this scope specifically.

⁵⁰ <https://isealalliance.org/what-we-do/credible-practice/iseal-credibility-principles>

⁵¹ <https://isealalliance.org/what-we-do/credible-practice/iseal-code-good-practice-sustainability-systems>

⁵² <https://eplca.jrc.ec.europa.eu/EnvironmentalFootprint.html>

⁵³ <https://textileexchange.org>

⁵⁴ <https://data.europa.eu/en/news-events/news/eus-digital-product-passport-advancing-transparency-and-sustainability>

⁵⁵ <https://africa.fsc.org/en-cd/supply-chains/transaction-verification>

⁵⁶ <https://rspo.org/palmtrace>

⁵⁷ <https://portal.apvma.gov.au/pubcris>

- **National Residue Survey (NRS)⁵⁸**

Provides a dataset that underpins multiple market claims about chemical safety. Functions as a shared evidence source reused across commodities and markets.

These examples highlight that credibility and trust can come from connecting strong standards, methodologies, registries and datasets.

⁵⁸ <https://www.agriculture.gov.au/agriculture-land/farm-food-drought/food/nrs>

6. Supporting assurance for market access

General considerations in assuring claims

Through this project, a number of considerations have been identified when examining the mechanisms that support how Australia assures agricultural sustainability claims for international markets. These include:

- Prescription vs outcomes-based
- Certification pathways do not always confer trust
- Compliance is assumed, not 'credentialised'
- Disconnect between national and farm-scale assurance
- Value versus burden
- Traceability and sustainability
- Priority data gaps and needs

This next section addresses these considerations.

Prescription vs outcomes

Sustainability topics are often multifaceted and viewed differently by regulators, markets, industry and producers.

Markets and regulators often articulate expectations in **prescriptive terms**, specifying the practices, policies, and/or evidence required rather than leaving the path to achieving desired outcomes open. For example, rules may prohibit certain animal husbandry procedures, mandate the provision of shade, or require producers to demonstrate legal water entitlements.

By contrast, industry-led initiatives more often emphasise **outcomes** such as reduced emissions, improved biodiversity or enhanced soil health. This approach allows producers flexibility in how they achieve desired results, while still demonstrating progress against sustainability priorities.

Good practice in international standardisation (as defined by the International Organization for Standardization (ISO)), prefers a focus on achieving outcomes so that individuals or organisation can demonstrate conformity in a manner appropriate to their context.

Outcomes together with indicators, metrics and methods provide the scaffolding for credible sustainability claims. **Outcomes** set the direction of performance, **indicators** are used to assess performance, **metrics** provide quantification (measurement) of the indicator and **methods** ensure the measurement process is valid and trusted. Where these elements produce verifiable evidence they can be used to underpin sustainability **credentials**, providing **assurance** to markets and regulators about **sustainability claims**.

Proportionality and pathways of assurance

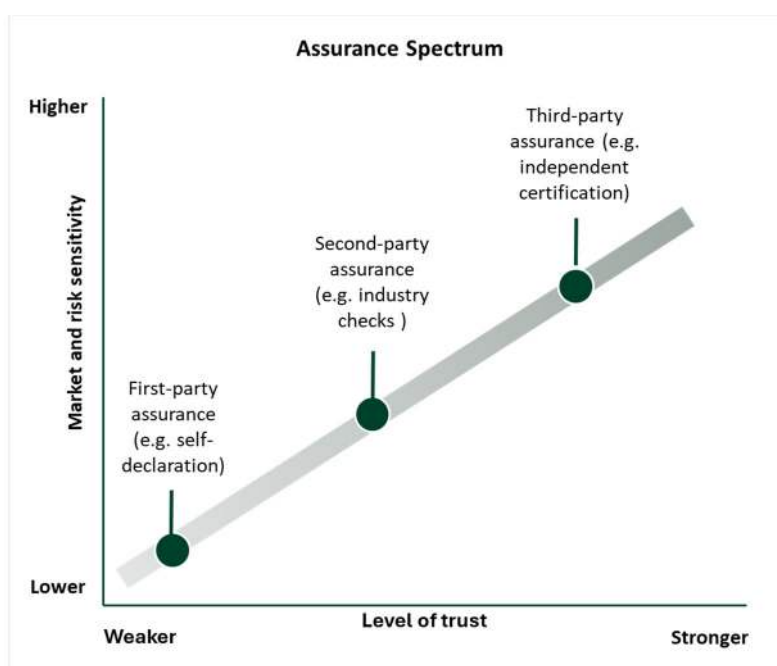
Assurance requirements differ by market context and risk sensitivity. Some markets consider some claims to be of higher risk (e.g. deforestation, labour rights, antimicrobial use) which demand a higher level of trust and therefore a higher degree of assurance (e.g. through independent third-party assurance mechanisms). Lower-risk or low-sensitivity claims can often be substantiated through lower degrees of assurance such as self-declaration.

This principle of proportionality recognises that:

- **First-party assurance** (*Trust me because I told you*) is low-cost and useful for engaging producers but carries low trust internationally.
- **Second-party assurance** (*Trust me because an organisation I am associate with has checked*) provides aggregated sector credibility but risks duplication and audit fatigue and is also unlikely to be trusted in international markets.
- **Third-party assurance** (*Trust me because an independent body has checked*) remains the most widely recognised pathway, particularly in Europe, North America and East and Southeast Asia.

In practice, these approaches can be understood along a spectrum, for example from self-declarations through to independent certification. Each step increases the level of trust and credibility but also adds cost and complexity. The appropriate point on this spectrum depends on the sensitivity of the market and the expectations of the claim combined with the corresponding assurance necessary (Figure 2). High-risk claims such as those related to deforestation or labour rights may require stronger assurance in some markets than lower-risk or routine claims.

Figure 2: Spectrum of assurance approaches



Different markets will accept different points along this spectrum but inconsistent expectations and terminology across jurisdictions make proportionality difficult to apply in practice. A shared vocabulary or reference model for levels of assurance and their application would help reduce duplication and increase recognition.

Risks of weak assurance

Where assurance is inconsistent or perceived to be weak, two risks arise:

- Trade barriers: importing markets may impose additional requirements or reject consignments if claims or credentials are not considered appropriate for that market's risk sensitivity and required levels of trust.
- Greenwashing (or 'welfare-washing') accusations (or similar): misleading claims undermine trust in Australian agriculture's sustainability claims more broadly. This can damage industry or sector reputation, erode consumer and investor confidence, and invite stricter regulatory oversight.

At the same time, the influence of consumer-facing "green labels" is weakening in some markets. Buyers and regulators are increasingly prioritising internal ESG metrics and compliance with formal reporting requirements over trust marks. This shift underscores the need for robust, credible assurance approaches that can withstand regulatory as well as consumer scrutiny.

Compliance is assumed, not 'credentialised'

In Australia, compliance with regulatory obligations such as work health and safety, food safety or biosecurity is generally assumed unless noncompliance is detected. Compliance systems are geared to detecting breaches (e.g. fines for workplace incidents, penalties for drink driving) rather than providing, direct evidence of regulatory compliance.

Sustainability claims must be supported by credible, verifiable evidence, which in most cases is verified to demonstrate that the claim can be trusted. The existence of regulation alone cannot be treated as sufficient evidence to support a claim: the absence of noncompliance does not equate to verifiable evidence upon which a claim can be made.

When compliance may be sufficient

While Australian sustainability initiatives often assume compliance with regulation (Schuster 2022⁵⁹), many of our export markets do not. They require positive proof that regulatory expectations have been met. In these contexts, regulatory outputs such as phytosanitary certificates, export permits and food safety inspection reports suffice as evidence.

⁵⁹ Schuster A (2022). *Industry Program evaluation, verification and benchmarking – final report*. Schuster Consulting Group.

These documents are issued by a recognised third party and hence they are accepted by importing countries as adequate assurance, no further credential is required. It is noted that there are currently no such regulatory outputs that would suffice for some sustainability topics such as work health and safety, labour laws etc.

When a credential is required

For claims that require a higher level of trust in the assurance mechanism, such as deforestation-free production under the EUDR, or emissions reporting under the SBTi, regulatory compliance alone is not enough. In these instances, markets and financiers expect more robust credentials, for example: evidence independently verified by a third party operating under appropriate governance.

Why the distinction matters

Assuming regulatory compliance is equivalent to a verified credential risks confusion for markets, inefficiency for producers and reduced credibility for Australian agriculture. International buyers and regulators may reject “compliance” as insufficient where a verified credential is expected. Clear separation ensures compliance evidence can be recognised as a verified credential.

Traceability and sustainability

Traceability and sustainability are closely intertwined but distinct.

Effective sustainability assurance depends on robust traceability systems, yet the fact that something can be traced does not ensure sustainability performance, it does provide the mechanism by which evidence underpinning a sustainability claims can be accessed.

There are varying traceability and chain-of-custody models:

- Mass balance for bulk commodities that are traded interchangeably (such as grains).
- Segregation where partial separation is feasible (e.g. cotton, dairy).
- Identity-preserved systems where high assurance or premium markets require it.

These define how product attributes move through supply chains and provide a basis for differing levels of traceability based on risk and proportionate to the commodity and market context, as shown in Table 5.

Table 5: Traceability and chain-of-custody models

Model	Description	Typical application
Mass balance	Sustainability attributes are tracked at a system or facility level, not at the level of individual consignments. Inputs and outputs must balance over a defined period.	Bulk commodities traded interchangeably (e.g. grains, oilseeds, sugar).
Segregation	Certified and non-certified product streams are kept physically separate through the supply chain but not uniquely tagged to individual farms.	Commodities with differentiated markets where separation is feasible (e.g. cotton, dairy).
Identity preserved	Each unit of product is uniquely linked back to its origin and managed separately throughout the chain. Provides the highest level of traceability.	Premium or high-assurance markets (e.g. organic products, specialty foods, branded beef).

Table 6 illustrates how these traceability models and sustainability assurance operate together to underpin credible claims. Increasing traceability precision, from mass balance to full identity preservation, enables greater specificity in what can be claimed, while escalating assurance, from first- to third-party, strengthens confidence that both the product's origin and its sustainability performance are verified.

Table 6: Interaction between traceability models and the Assurance Spectrum

Traceability			Sustainability assurance		
Model	Examples of these models	How sustainability is enabled	First-party	Second-party)	Third-party)
Mass balance	ISCC (EU canola for biofuels), myBMP + BCI for cotton MSC Chain of Custody (processing)	Tracks certified and non-certified inputs to ensure overall sustainability volumes are balanced over time. Enables aggregated or program-level claims (e.g. “X % of this product sourced from certified farms”).	Producer records input/output balance and self-reports sustainability metrics (e.g. emissions, water use) using approved calculators.	Supply-chain or industry program checks mass-balance data and reviews producer sustainability records for consistency with program criteria.	Independent auditor certifies mass-balance accounting and verifies sustainability performance indicators through data and site audit.
Segregation	NLIS Sheep (mob-based), GLOBAL.GAP MSC Chain of Custody	Maintains physical separation of certified and non-certified product, enabling traceable flows and specific sustainability claims (e.g. “produced under accredited environmental and animal-welfare standards”).	Producer maintains records showing certified product kept separate and self-assesses compliance with sustainability practices.	Processor, brand or industry program verifies segregation points and reviews producer data or site practices against sustainability requirements.	Accredited certification body audits full chain-of-custody controls and verifies on-farm environmental, social and animal-welfare performance.
Identity preserved	NLIS Cattle and Sheep (EID), AWEX eBale for wool, MSC Chain of Custody (niche), Oritain testing (beef, cotton, wool, wine, dairy)	Links each unit directly to its source, enabling product or enterprise-specific sustainability claims (e.g. “This wine is from Farm X certified carbon-neutral and biodiversity-positive”).	Farm or brand maintains digital identity records and publishes measured sustainability outcomes (e.g. GHG, biodiversity).	Retailer or brand program verifies traceability data and assesses supplier performance against sustainability KPIs.	Independent certification or forensic provenance testing validates full traceability chain and confirms sustainability claims through verified metrics and audits.

Priority data needs and gaps

Evidence is the foundation of any credible sustainability claim as it provides the link between a claim and the reality it describes. Certificates, audit reports and declarations can give confidence in practices or outcomes but their strength depends on the quality, transparency and consistency of the underlying data. Where data is accessible, verifiable and comparable, claims are robust. Conversely, when data is fragmented or opaque, claims risk being dismissed. Trusted data systems are central to verification as they provide evidence that can be checked, compared and re-used, and transformed into credentials.

Australia's agricultural sustainability data systems are fragmented and anarchic (Kostanski et al 2024). Evidence, where it is gathered, is collected in different formats, often multiple times for different purposes. Strong regulatory compliance provides assurance in many areas, but because this is not always visible or accepted internationally, it is often overlooked in global markets.

Several initiatives, such as the Australian Agricultural Traceability Protocol (AATP)⁶⁰ and the Australian AgriFood Data Exchange (AADX)⁶¹ as well as emerging initiatives from sector-specific traceability pilots, are meaningful steps toward greater connectivity. However, there is not a nationally adopted, cross-sector sustainability-focused approach that ensures evidence is coherent, comparable and re-usable across commodities and markets. Addressing this fragmentation requires bringing together disparate systems under a more coherent national approach.

Current systems struggle to deliver on many of the sustainability priority topics because of:

- lack of accepted standards;
- low trust in how data will be used; and
- insufficient governance to ensure independence and transparency.

Addressing these challenges requires:

- interoperable data standards that enable evidence to be collected once and used for multiple purposes;
- harmonised, low-burden data capture approaches that leverage existing systems and regulatory datasets (e.g. assurance and compliance programs); and
- trustworthy, benchmarked data that can be repurposed for compliance, finance, reporting and market access.

⁶⁰ <https://www.agtraceaus.com.au/aatp>

⁶¹ <https://www.ausagdx.com.au/>

Insight

National and farm-scale assurance disconnect

There is a persistent gap between the types of evidence required at national, regional or sector scale and those demanded at farm or enterprise scale in relation to sustainability. Governments and industry bodies increasingly seek aggregated and comparable information to support policy reporting, national sustainability indicators and disclosures. By contrast, markets, buyers and certification schemes rely on farm- or supply-chain-level evidence to substantiate product-specific sustainability claims.

Without a mechanism to connect these two levels, assurance across the system becomes fragmented. Farm-level programs can produce detailed, credible evidence of practice and performance, but unless this evidence aligns with national indicators or recognised datasets, it cannot contribute meaningfully to broader sector or national claims. Conversely, national frameworks provide valuable benchmarks and context but they cannot replace on-farm evidence where markets or financiers require direct demonstration of practice.

As a result, the two evidence systems operate in parallel rather than as parts of an integrated assurance chain. Data collected to satisfy one requirement rarely flows efficiently into another, creating duplication, inconsistency and lost opportunity for mutual recognition.

7. Common challenges emerging

Several consistent challenges emerge in considering how to assure sustainability claims of Australian agriculture.

1

Inconsistent and confused terminology

Stakeholders and markets interpret “sustainability claim,” “evidence,” “verification,” and “credential” differently, leading to confusion about what is being demonstrated and how trust is established. This lack of shared language undermines comparability, transparency and credibility, making it difficult to align Australia’s sustainability claims with international expectations.

2

Trust and credibility as foundations

Credible sustainability claims depend on transparent governance, independent oversight and reliable assurance mechanisms. In their absence, claims risk being dismissed as weak or misleading. This exposes producers and exporters to accusations of greenwashing, stricter import conditions and reputational harm. The challenge is that without trusted foundations, no national approach to assuring sustainability claims will carry weight in markets.

3

The sustainability data ecosystem is anarchic

Australia’s sustainability data ecosystem is fragmented and inconsistent. Sustainability data is currently collected, stored and shared through an anarchic system of siloed databases, proprietary platforms and uncoordinated reporting frameworks. There are no common standards, identifiers or interoperability protocols linking farm-level data with national or market-facing evidence, and producers often face duplicate requests without clear value in return. This lack of structure undermines the ability to support data-driven sustainability claims and creates duplication, data fatigue and poor traceability of claims between farm, sector and national levels.

4

Unclear credibility of credential schemes

The market is proliferated with credentialing programs of variable rigour. Some are robust and internationally recognised; others are opaque, duplicative or of limited credibility. This leads to confusion about what truly supports a sustainability claims. At the same time, there is little appetite for imposing a single, overarching credentialing program across all of agriculture. The challenge is to create coherence across this diversity to enable comparability and an assessment of credibility, without displacing legitimate individual approaches.

5

Producer burden and value

Producers are facing rising demands for evidence in a time of tight margins, limited labour availability and increasing complexity. Without coordination, compliance diverts time and resources away from production and undermines productivity and viability. The challenge is to ensure assurance mechanisms reduce duplication and generate tangible value, rather than adding unsustainable overheads.

6

Fragmented national coordination

Australia lacks a coherent, cross-sector mechanism to coordinate sustainability assurance activities and represent national sustainability interests internationally. The current patchwork means Australia's sustainability assurance landscape is chaotic, with sectors, programs and jurisdictions developing independent credentialing programs in response to different market or regulatory drivers. While this diversity reflects legitimate differences in production systems and markets, the absence of a coordinating mechanism means there is no single, coherent way to demonstrate or compare claims at a national level. International partners encounter inconsistent messaging, variable data formats and opaque credentials. This fragmentation diminishes trust in Australian sustainability claims, complicates mutual recognition with overseas standards, and limits Australia's ability to advocate for its production realities in global rule-setting forums.

7 *National and farm-scale assurance*

There is a persistent disconnect between the aggregated evidence needed at national or industry level and the detailed data required at farm level. International markets, regulators, credentialing programs and supply chains each demand comparable data at different scales, yet these demands frequently overlap or even depend on one another. A scheme designed to satisfy a buyer's on-farm verification requirement may also feed into a national dataset used to demonstrate compliance with a trade agreement, while government-level reporting can, in turn, drive new on-farm evidence requests. Without a way to connect these two scales, producers are left to navigate inconsistent requirements and duplicated data collection. This limits capacity to translate local evidence into credible sector or national datasets.

8 *Productivity and competitiveness*

Multiple overlapping credentialing program requirements increase compliance costs, reduce efficiency and discourage participation. Producers face repeated audits for similar sustainability topics under different programs. This erodes farm productivity and undermines sector competitiveness. By contrast, standardised approaches can reduce duplication, enable data to be used for multiple purposes and free resources for on-farm improvement. The challenge is to ensure that assurance strengthens Australia's competitiveness rather than becoming a drag on efficiency.

8. Towards a national model of assurance

The basis for a federated model

A sustainability claim is an outward-facing statement. To be credible, a claim must be backed by **verifiable evidence**. Whether the claim is accepted by a ‘purchaser’ varies according to the contextual risk of the purchaser (whoever takes on the risk). A key aspect of that decision is the assurance mechanism that is being used (i.e. the process by which the evidence has been verified and by whom).

Such assurance may be first-, second- or third-party assurance. Where the tolerance of risk by a purchaser is high (they’re willing to take greater risk), first party assurance may be acceptable; where risk tolerance is medium, second party assurance may be acceptable; and where risk tolerance is very low, only third-party assurance will be acceptable.

A sustainability credential may be simply the existence of verifiable evidence, or it may be the outcome of a third-party assurance process (i.e. a certificate). In practice, this simple sequence is complicated by a diversity of sustainability schemes, frameworks and credentialing programs, each with different requirements, levels of recognition, and levels of verification, that exist within Australia’s agricultural industry. This diversity reflects the realities of different commodities, market expectations and production systems. It also reflects a general inability to collaborate across sectors. This creates complexity, duplication and inconsistency. Furthermore, not all schemes and programs provide the same level of credibility or market recognition.

Due to this diversity, a mandatory certification scheme is likely to be unworkable and add cost without commensurate value.

A coordination mechanism is needed that integrates the different approaches together under a single national standard as a reference point for alignment. This would make the identification of the programs, schemes and initiatives that produce credible credentials, and which fall short, transparent.

A “collect and verify once, use many times” principle is central to this approach. It does not however, require a single, centralised platform. Rather, a federated model, that encourages sector-specific sustainability credentialing programs to be interoperable while maintaining a coherent national backbone will reduce duplication, create efficiency and strengthen trust in sustainability claims.

Several concepts may provide the foundation for a national model of assurance:

1. Transparency and comparability of sustainability credentials

A nationally coordinated approach would provide clarity about which sustainability schemes and programs exist, the types of credentials they produce, the topics they cover, and how they are governed and assured. The intention is to reduce confusion, improve trust and transparency, and enable recognition across markets while respecting the autonomy of sector-specific initiatives. This transparency depends on shared governance arrangements that respect sectoral and program data ownership while ensuring confidence about how evidence is collected, verified and used.

2. Alignment with market expectations

A structured approach will show how different schemes, programs and credentials align with the expectations of diverse stakeholders across domestic and international markets. This includes customers, supply chain actors, regulators, financiers, and communities. Clear guidance on recognition, levels of verification and communication ensures that credentials are understood consistently and can be positioned with confidence in multiple contexts.

3. A single national standard aligned to international standards (within reason)

To maintain global competitiveness, any nationally coordinated approach for sustainability claims must have a single national standard as the reference point for alignment.

Such a standard would be aligned with international standards in a manner that recognises Australia's diversity in environment and production systems.

This would provide a mechanism to assess how the various schemes and credentials used within Australian agriculture (whether industry-, sector- or privately- developed or internationally recognised) compare (or could be mutually recognised) with evolving requirements in key markets, as well as other regions that influence our key markets. For clarity, such a standard would not be a production or practice standard and would not determine what constitutes "sustainable" agriculture. Instead, it would provide a consistent, cross-sector baseline for how sustainability claims are constructed, evidenced, verified and communicated.

Benchmarking in this way highlights strengths and gaps, supports mutual recognition and helps ensure the claims made (as well as the credentials relied upon in Australia to make such claims) remain defensible and credible in international markets.

4. Governance and accountability

The strength of a nationally coordinated approach depends on governance that is transparent, independent and representative across sectors. Its role would not be to endorse individual claims but to ensure that the processes for comparing and classifying schemes and credentials are robust, current, and internationally defensible. This requires ongoing review to reflect evolving global standards, clear rules on recognition and verification, and accountability through independent oversight.

Strong governance of this kind is essential to maintain confidence in the processes by which schemes and credentials are assessed and to ensure the coordinated approach retains credibility in international markets. Without it, there is a high risk of market confusion, accusations of greenwashing and erosion of trust in Australia's agricultural sustainability claims.

In practice, this governance must also steward a federated data architecture, connecting systems through consistent rules and shared reference points rather than through a single centralised database.

5. Value at the farm gate

For a nationally coordinated approach to be accepted, it must deliver tangible benefits to producers and not add compliance costs.

Producers participate in sustainability credentialling programs by providing data, meeting standards and undergoing audits, even if the resulting claims are made further along the value chain. The value of participation must be framed more broadly than the expectation of price premiums. While premiums may occasionally arise in specific markets, more consistent benefits come from:

- reduced duplication of audits and reporting;
- streamlined compliance processes;
- recognition of the same credential across multiple supply chains and markets;
- securing new or maintaining access to markets;
- eligibility for finance and insurance; and
- strengthening industry reputation and resilience.

Reframing value in this way makes participation in sustainability credentialling programs less about chasing premiums and more about supporting long-term viability, competitiveness and trust. It is therefore essential that sustainability claims, supported by credible evidence or recognised credentials, translate into real commercial opportunities, such as improved market access, preferential procurement or eligibility for finance.

6. Integration with the ASA Alliance and the AASF Data Ecosystem

Any national approach to assuring sustainability must be underpinned by a coherent and trusted evidence base. While the assurance mechanism would not itself collect or manage data, it must rely on consistent and credible data systems.

The AASF Data Ecosystem, managed by the proposed ASA Alliance, has been designed to provide the necessary building blocks for trusted sustainability data: governance arrangements and processes to establish which indicators, methods and datasets are recognised as nationally trusted reference points.

These building blocks are preconditions for any national approach to comparing and classifying sustainability credentials to assure claims. Without them, it is not possible to deliver comparability across sectors, demonstrate alignment with international requirements or reduce the duplication that producers currently face.

Together, the AASF (defining what should be measured) and the AASF Data Ecosystem (defining what and how data should be collected, shared and compared) form the

operational core of a federated model. The ASA Alliance would provide overarching stewardship, ensuring consistency, permissioned data exchange and international credibility.

These elements collectively point to a ***National Sustainability Claims Coordination Program***: a mechanism that brings coherence to claims and credentials, respects sector and market diversity and ensures Australia's sustainability claims remain trusted at home and abroad.

Operationalising a National Sustainability Claims Coordination Program

Australia's agriculture sectors are currently investing heavily in sustainability frameworks, certifications and reporting systems. Without national coordination however, these efforts risk fragmentation, duplication and inconsistent recognition in international markets.

A **National Sustainability Claims Coordination Program (Claims Program)** provides structure to align these efforts. Integrated with the proposed ASA Alliance and its AASF Data Ecosystem, the Program would create a coherent national approach that:

- improves transparency and comparability across diverse claims and credentials;
- empowers Australia to define its own standard for agricultural sustainability claims;
- supports alignment with international regulatory and market requirements;
- reduces duplication and compliance costs through shared tools and benchmarks;
- strengthens Australia's influence in international standard-setting and trade; and
- enables sector specific approaches and private programs to continue.

The Program is not proposed to collect or store data. Its role is to support interoperability across existing systems, ensuring that evidence collected once can be recognised and re-used many times for different purposes. This avoids duplication, reduces compliance burden and avoids the creation of a centralised data repository.

The following subsections describe the core components of the Claims Program, its integration with the AASF Data Ecosystem and how it would operate in practice.

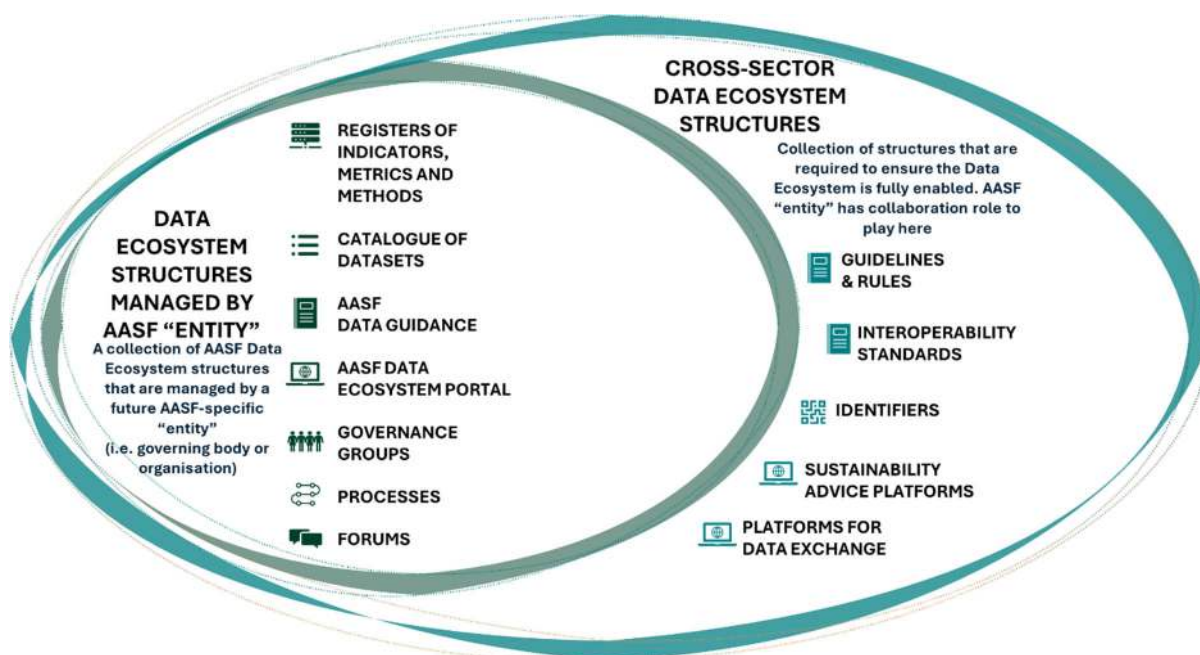
The role of the AASF Data Ecosystem

Any national model seeking to assure sustainability claims relies on a trusted evidence base. The proposed AASF Data Ecosystem provides this foundation by establishing a nationally recognised register of indicators, metrics and methods and catalogue of datasets, enabling stakeholders in agricultural sustainability to know what data should be collected and can be requested for specific purposes and within defined contexts related to agricultural sustainability. Cross sector efforts on the development and adoption of data interoperability standards and creation of data exchanges will ensure data is comparable, interoperable and re-usable. The Claims Program then builds on this base, ensuring evidence associated with claims is transparent, consistent and internationally defensible.

Components under the AASF Data Ecosystem

The AASF Data Ecosystem Design (Kostanski *et al* 2024 and Lemon *et al* 2025) identifies the building blocks of a data ecosystem, shown in Figure 3. It also defines industry wide structures that are required to ensure the AASF Data Ecosystem is fully enabled.

Figure 3: AASF Data Ecosystem building blocks and components required to enable the AASF Data Ecosystem



AASF Data Ecosystem building blocks

These key enabling components include:

- **Governance groups and processes**

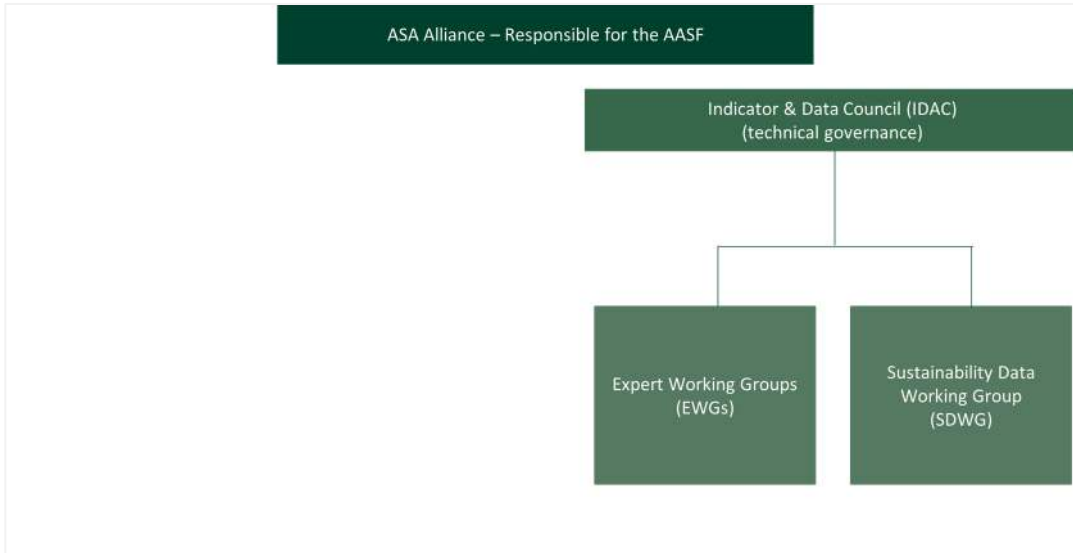
Governance is the backbone of a credible data ecosystem. Independent decision-making groups and clear processes are required to decide which indicators, metrics, methods and datasets are recognised as nationally trusted reference points for defined purposes and within specified contexts. Without such governance, the transparency and legitimacy needed to build trust cannot be established.

The AASF Data Ecosystem concept has proposed a set of governance groups under the ASA Alliance which, if implemented, would provide this backbone (Figure 4). These include:

- An Indicator and Data Advisory Council (IDAC): responsible for endorsing nationally trusted indicators, metrics and methods, and advising on alignment with international frameworks.
- A Sustainability Data Working Group (SDWG): responsible for operational advice on datasets and interoperability.

- Expert Working Groups: convened as needed to recommend indicators, metrics and methods for registration.

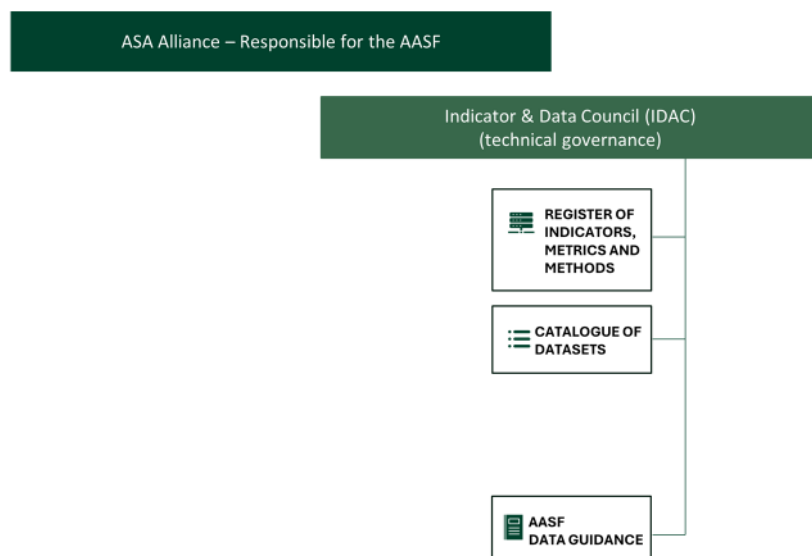
Figure 4: Proposed AASF Data Ecosystem Governance Groups



Together, these governance groups would ensure that the registers and catalogues of the AASF Data Ecosystem are managed transparently, updated as requirements evolve and trusted as the national reference points for sustainability. They also provide the mechanism for Australia to speak with authority in international fora, embedding domestic realities into emerging global standards.

The IDAC in particular, provides technical governance over the registers of indicators, methods and metrics, the catalogue of datasets, and AASF data guidance (Figure 5).

Figure 5: Role of the IDAC



- **Registers of indicators, metrics and methods**

A nationally agreed register of indicators provides the reference points for what should be measured in terms of agricultural sustainability. Indicators make clear which aspects of sustainability are being addressed (for example emissions, biodiversity, welfare or labour) and ensure that claims are aligned with recognised measures rather than bespoke or inconsistent definitions. Without an indicator register, it is impossible to demonstrate a coherent national approach.

Indicators must be underpinned by robust and consistent metrics (what is being measured to quantify the indicator) and methods (the process by which the metric is being measured). Registers of approved metrics and methods, such as emissions calculators, LCA approaches etc., ensures that evidence is generated in transparent, credible and internationally defensible manner. This avoids situations where different schemes measure the same indicator using incomparable methods.

- **Catalogue of datasets**

Rather than holding datasets itself, the AASF Data Ecosystem provides a catalogue of recognised, trusted datasets and reference sources that can be drawn upon to support claims. Examples include residue testing results, land-use maps, labour statistics or antimicrobial use data. By cataloguing rather than centralising, the AASF Data Ecosystem enables visibility of available data, reduces duplication and provides confidence in quality and comparability.

- **AASF data guidance**

To enable usability of the AASF Data Ecosystem, clear documentation is required that explains how indicators, methods and datasets should be applied in practice, ensuring users interpret and use data consistently.

- **AASF Data Ecosystem portal**

A digital interface would allow users access to the registers, catalogues and supporting guidance, creating a single point of entry for trusted sustainability evidence.

- **Forums**

Structured engagement mechanisms would be provided where stakeholders can contribute to governance decisions, provide feedback on methods and ensure continual improvement.

Components required to enable the AASF Data Ecosystem

Components required more broadly than just for sustainability purposes include:

- **Guidelines and rules for data**

Agreed principles would be required in the form of guidelines, policies and rules that define how data is collected, managed and shared, providing consistency and safeguarding integrity across sectors.

- **Interoperability standards**

Data interoperability is recognised as one of the most significant gaps in the current agricultural data landscape. At present, datasets and systems across industries are developed independently, with little consistency in how information is structured or exchanged. This results in duplication, incompatibility and inefficiency; producers are asked to provide the same data multiple times in different formats, while supply chains and regulators struggle to aggregate evidence across commodities.

Interoperability standards provide the solution. These are technical specifications and protocols that ensure different datasets, platforms and systems can “talk to each other.” By adopting common standards, data can be collected once and re-used many times.

- **Identifiers**

Unique identifiers (i.e. labels or names for parties, places, products and processes) are essential for ensuring traceability and linkage across the system. Identifiers are required to enable the AASF Data Ecosystem and traceability in general.

- **Platforms for data exchange**

The infrastructure needed for permissioned sharing of data between producers, supply chains, regulators and markets, allowing evidence to flow securely without centralising it.

- **Sustainability advice platform**

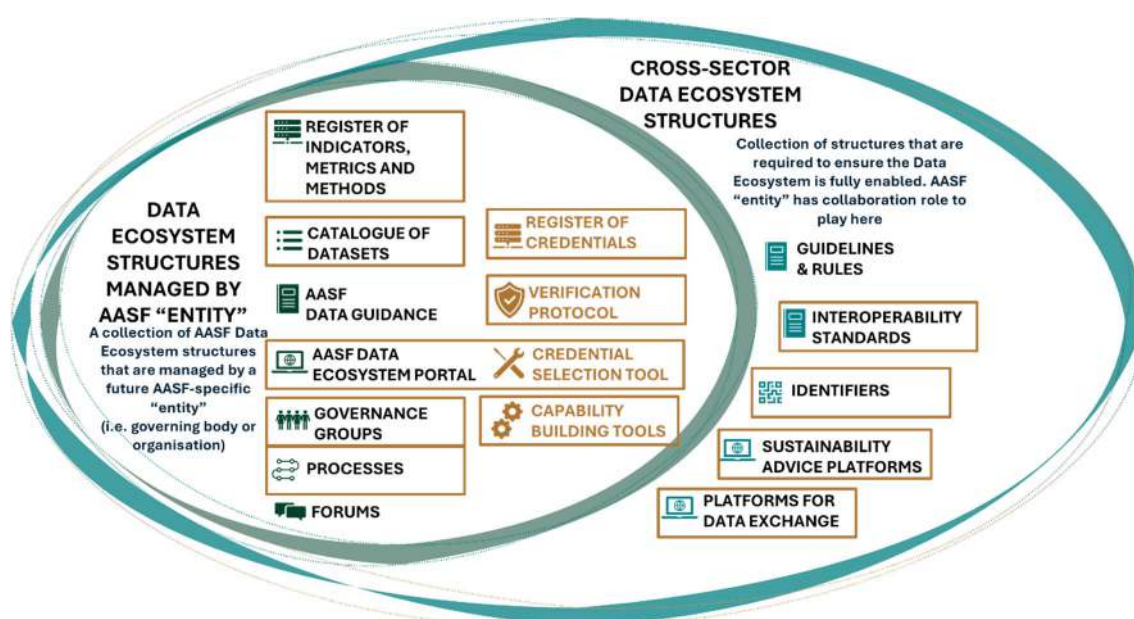
User-facing resources to help producers, supply chains and other stakeholders understand how to use the ecosystem, navigate requirements and build capability.

Core components of a Claims Program

The AASF Data Ecosystem design provides the governance and technical foundations required for trusted sustainability evidence. Building on these foundations, the Claims Program would serve as an application layer to connect evidence to the diverse range of claims and credentials used across agriculture. Additional components would need to be added to the AASF Data Ecosystem to include within its scope assuring sustainability claims.

Figure 6 shows which components of the AASF Data Ecosystem and broader ecosystem structures can be leveraged by the Claims Program and which are required specifically for the Program.

Figure 6: Components of the AASF Data Ecosystem leveraged by the National Sustainability Claims Coordination Program and additional components required

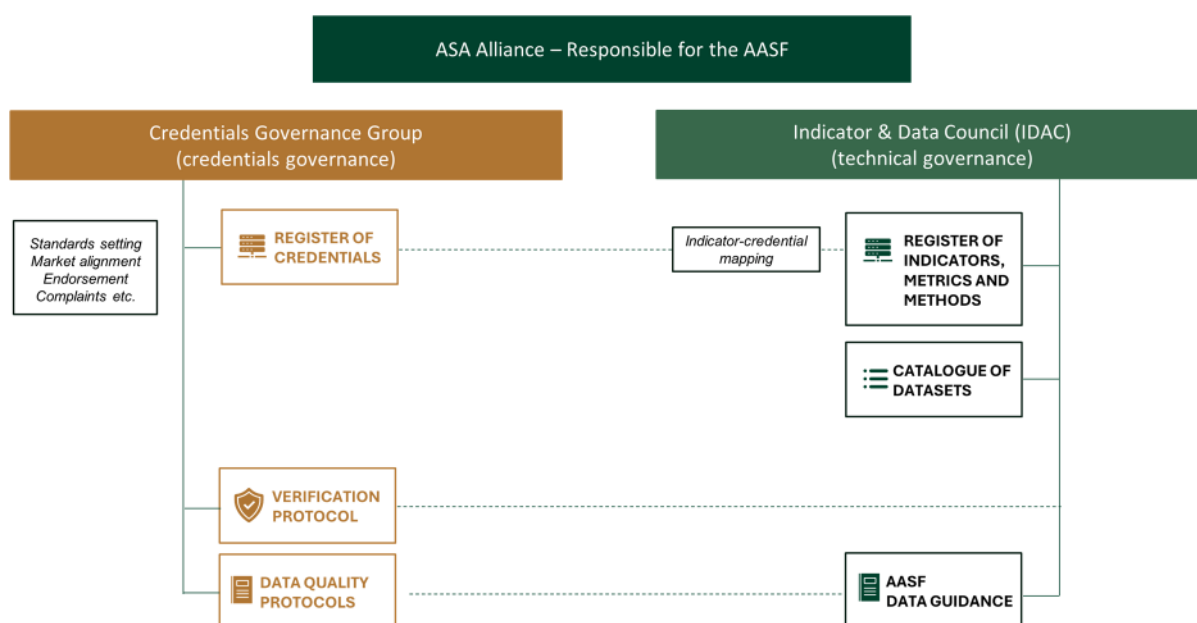


AASF Data Ecosystem building blocks leveraged by the Claims Program

- **Governance groups and processes**

The IDAC, SDWG and Expert Working Groups will continue to manage the evidence foundations of the AASF Data Ecosystem (e.g. indicators, metrics, methods, and datasets). The Claims Program will establish a dedicated *Claims Governance Group* (CGG) that will work alongside these existing structures (Figure 7). Its role will be to oversee the integrity of the register of credentials, the verification protocol and data quality protocols, drawing on the technical advice of the SDWG while providing clear accountability for how credentials are recognised, classified and maintained. As part of this, the CGG would be responsible for setting a national standard for sustainability and horizon scanning to adapt or respond to emerging requirements. This ensures that the Program has governance tailored to credentials, while remaining integrated with the broader AASF Data Ecosystem.

Figure 7: The Claims Governance Group and its interaction with IDAC



- **Registers of Indicators and Metrics**

The Claims Program would draw directly on the nationally agreed Registers of Indicators and Metrics to structure how credentials are described. By mapping credentials to indicators (for example emissions, biodiversity, welfare etc.), the register makes clear what each credential actually measures and enables comparability across sectors. Without an indicator register, different credentials and claims cannot be compared or aggregated, and it is very difficult to demonstrate a coherent national approach.

- **Register of Methods**

The Claims Program would require credentials to reference approved methods from the catalogue. This provides the rules for how evidence is generated and avoids situations where different schemes measure the same indicator in incompatible ways. For credentialing, this allows buyers and regulators to see that different credentials, even if designed for different commodities, rely on comparable methodologies.

- **Catalogue of datasets**

The Claims Program would use the catalogue to demonstrate the evidence base supporting each credential. By referencing trusted datasets (for example residue testing results, land-use maps, antimicrobial use data), the register clarifies what evidence underpins a credential and reduces the need for producers to provide the same information multiple times. This supports the “collect once, use many times” principle while ensuring the credibility of claims in international markets.

Additional structures specific to the Claims Program

A number of additional structures will be required to build on the AASF Data Ecosystem in relation to the Claims Program:

- **Register of Credentials**

A register of credentials functions as a transparent, well-governed reference point that sets out:

- what credentials exist across agriculture;
- what scale the credentials apply to (farm-, sector- or national-scale);
- what AASF Principles and Criteria topics they cover (for example emissions, biodiversity, welfare or labour);
- how they are governed and verified; and
- who recognises them in domestic and international markets, and at what scale.

The purpose of the register is not to replace or duplicate existing sustainability credentialing programs, but to provide visibility and comparability across them. By registering credentials side by side, the Register reduces confusion, supports mutual recognition and creates a coherent national picture.

- **Verification Protocol**

A key feature of the register would be an embedded verification protocol, which assesses the assurance mechanism underpinning each credential.

Its purpose is to make clear whether a credential can be relied upon; are the rules and methods sound, are the processes transparent and can markets depend upon it? In practice, this creates a clear but flexible system that is:

- **Risk-proportionate:** higher levels of verification are applied to higher-risk claims, markets or commodities (for example deforestation or labour rights), while lower-risk claims can be substantiated through sector reporting, regulation, traceability or first-party evidence.
- **Market-driven:** recognising that some buyers or regions require third-party verified credentials, while others accept first-, or second- party assurances.
- **Multipurpose:** ensuring that evidence collected once can be re-used across compliance, finance, reporting and trade.

This approach makes visible, not just what a credential claims to cover, but how dependable it is, providing a clear signal to producers, buyers and regulators about which credentials can be used with confidence to underpin claims.

- **Data Quality Protocol**

A further component of the Claims Program is a Data Quality Protocol. While the AASF Data Ecosystem defines which indicators, metrics, methods and datasets are nationally trusted reference points, the Claims Program requires a mechanism to ensure that the data relied upon as the basis for a credential, meets agreed quality standards in practice.

The data quality protocol sets out the criteria for assessing whether data underpinning a credential is accurate, complete, timely and traceable. It provides the governance framework for testing the reliability of datasets as they are applied to claims, giving markets and regulators confidence that the evidence behind a credential is fit for purpose. By doing so, the protocol ensures that comparability across credentials is not undermined by variations in data integrity.

Relationship with the Verification Protocol

The Verification Protocol and Data Quality Protocol are complementary. The Verification Protocol focuses on the verification and assurance procedures applied to a credential. The Data Quality Protocol, by contrast, focuses on the integrity of the evidence that sits beneath that assurance. Together, they enable the Register of Credentials to signal both:

- how a credential has been verified; and
- whether the evidence underpinning it is of sufficient quality to be relied upon.

This dual approach provides a more robust basis for market recognition. It ensures that a credential is not only verified and assured at the right level for its risk context but also built on data that meets nationally agreed standards for quality.

- **Credential Selection Tool**

To assist producers, exporters and buyers to identify which credentials are most appropriate for their claim, commodity or target market, a practical decision support tool is required to enable users to identify which sustainability credentialing program is most appropriate for their purpose(s) and context.

- **Capability Building Tools**

Extension and digital readiness support will be required to enable effective participation in the Claims Program. These tools ensure that participation is viable and that the Claims Program creates value rather than additional compliance.

By integrating these elements, the Claims Program extends the AASF Data Ecosystem; the ecosystem builds the foundation of evidence and the Claims Program provides the coordination needed to ensure that sustainability credentials and claims are transparent, comparable and internationally recognised.

Components required to enable the AASF Data Ecosystem also required for the Claims Program

In addition to the core registers, catalogues and governance structures of the AASF Data Ecosystem, a number of enabling components, identified by CSIRO, are also essential for the Claims Program. These provide the operational supports that allow the Register of Credentials and its associated protocols to function effectively:

- **Interoperability standards**

Interoperability standards will be required to ensure that data supporting a credential can move seamlessly between farm systems, sector databases, supply chain platforms and aggregate from farm to sector to industry scale. This is critical for achieving the goal of “collect and verify once, use many times” and for reducing the data burden on producers.

- **Identifiers**

Identifiers are critical for linking a credential to the entity or supply chain it applies to, without duplication or ambiguity. They allow markets and regulators to trust that a claim is genuinely associated with the right actor or product, and they enable credentials to be traced, compared and recognised across different systems.

- **Guidelines and rules for data**

Define how data must be collected, managed and shared if it is to be used to support a credential. These rules provide assurance that evidence flowing into the Claims Program meets minimum integrity requirements.

- **Platforms for data exchange**

Enable permissioned sharing of evidence between producers, supply chains actors, regulators and markets. For the Claims Program, this ensures that data underpinning credentials can be verified and re-used without requiring centralisation or repeated data collection/entry.

- **Sustainability advice platform**

Provides producers and supply chain actors with guidance on how to use the Claims Program, select appropriate credentials, and build capability. This ensures that the Program reduces burden and supports adoption.

How a Claims Program might work in practice

The Claims Program is a layer that sits over other programs and initiatives. It does not collect or store raw evidence; instead, it makes visible which credentials exist, what topics and methods they cover, what level of verification they carry and where they're recognised (e.g. buyers, regulators, finance).

Evidence remains in sector or commercial systems; the Claims Program relies on nationally trusted indicators, metrics and methods defined through the AASF Data Ecosystem and applies common verification and data-quality protocols to classify credentials in a transparent, risk-proportionate way.

Onboarding and classification (how an initiative participates)

When a sustainability credentialing program seeks Claims Program recognition, it follows a standard path:

1. Credential descriptor submitted to the register

- Name, issuer/owner, scope (farm/product/batch/sector), intended use (market/regulatory/finance) and recognition targets (e.g., EU importer due diligence; retailer program).
- Topics mapped to both the AASF (Principles and Criteria) and the AASF Data Ecosystem Register of Indicators (e.g., emissions, biodiversity, welfare) to ensure comparability.
- Metrics and Methods cited from the AASF Data Ecosystem Registers of Metrics and Methods (calculators, LCA, biodiversity metrics) and datasets cited from the Catalogue of Datasets (e.g., NLIS, land-use maps, residue results).

2. Verification protocol applied (risk-proportionate)

- The Claims Program classifies the credential's assurance method as well as integrity initiatives (e.g. governance etc.) in line with risk, market sensitivity and claim type.

3. Data-quality protocol applied

- The issuer demonstrates the evidence used for the credential meets integrity thresholds (e.g. accurate, complete, timely, traceable) appropriate to the claim and market.

4. Register entry published (visibility, not a database/lake/warehouse etc)

- The register shows: what the credential covers, its verification and assurance method, integrity initiatives, data-quality status, recognition status (markets/regulators/finance), and how it maps to indicators/metrics/methods/datasets.

5. Lifecycle and recognition updates

- Renewal cadence, surveillance (if any), change-management and updates to recognition by markets/regulators are reflected in the register over time. Governance is handled by the Credentials Governance Group, working alongside IDAC/SDWG under the ASA Alliance governance structures.

Worked examples

The practical operation of the Claims Program can be illustrated by applying its logic to a range of existing and emerging initiatives across Australian agriculture. These case studies demonstrate how the Claims Program could make visible what credentials exist, how they are verified, what evidence supports them, and where they are recognised in markets, regulatory systems and finance.

The purpose here is not to replace or duplicate these initiatives, but to provide a trusted national layer of recognition and comparability. The Claims Program would enable visibility of the nature of a credential, the verification and assurance behind it, how it aligns with national indicators and what additional steps may be required for its use.

Table 7 below provides a summary of case study examples. It covers both established schemes and initiatives that were identified through the course of this project (such as MSC, myBMP, ISCC, GLOBALG.A.P., regenagri® and Leading Harvest), and pilots and innovation projects (such as AgTrace, AWSS, SEAOAK, Dairy and Horticulture pilots). Full case studies, including register entries and detailed analysis of verification, data quality, and onboarding requirements, are provided in Appendix 5.

Table 7: Case study examples showing application of the Claims Program

Initiative	Credential (Illustrative)	Issuer/Owner	Scope	Existing schemes and initiatives			
				Topics (mapped to national indicator register)	Verification	Assurance	Recognition Pathway
AWSS (Wool)	AWSS Certified Wool Bale/Lot	AWEX	Bale/Lot/Shipment	GHG, soil, water, biodiversity, animal welfare	Onsite audit eBale data reconciliation	Third-party	Textile Exchange, eco-labelling, wool buyers
GLOBALG.A.P.	GLOBALG.A.P. Certified Farm/Product	GLOBALG.A.P. c/o FoodPLUS GmbH	Farm	Food safety, pesticide, water, soil, labour	Onsite audit Document review GLOBALG.A.P Database	Third-party	Retailer and buyer acceptance worldwide
ISCC (Canola/Biomass)	ISCC Certified Sustainable Canola	ISCC GmbH	Farm → consignment	Land-use change, GHG, biodiversity, soil	Documented mass-balance audit Chain of custody audit Periodic on-site farm checks	Third-party	EU RED compliance, biofuel markets
Leading Harvest	Leading Harvest Certified Operation	Leading Harvest (US scheme)	Farm	Soil, biodiversity, water, GHG, worker/community	Onsite audit Desktop review	Third-party	Growing buyer/investor acceptance
MSC (Seafood)	MSC Certified Sustainable Seafood	MSC	Fishery	Biodiversity, ecosystem, fish stocks, resource management	Onsite audits Document reviews Traceability checks	Third-party	Global buyers, EU, US, Asia
myBMP (Cotton)	myBMP Certified Cotton Farm	Cotton Australia	Farm	Water, chemical stewardship, soil, biodiversity, labour	Self-assessment validated through CA-appointed auditor site visits	Second-party	BCI equivalence, textile markets

Existing schemes and initiatives							
Initiative	Credential (Illustrative)	Issuer/Owner	Scope	Topics (mapped to national indicator register)	Verification	Assurance	Recognition Pathway
regenagri®	regenagri Certified Farm/System	Control Union	Farm	Soil health, biodiversity, water, carbon, nutrients	Self-assessment Periodic onsite audits of data and outcome metrics	Third-party	EU/UK fibre markets
SWA (Wine)	SWA Certified Vineyard/ Winery	Australian Grape & Wine / Freshcare	Enterprise/ site	GHG, water, biodiversity, labour, community	Onsite audits Winery records	Third-party	Retailer and monopoly acceptance (EU, UK, Scandinavia)

9. Overcoming challenges

The challenges identified through this work reveal systemic weaknesses that limit Australia’s ability to make credible, consistent and internationally recognised sustainability claims. They reflect a combination of structural, linguistic and institutional gaps across the evidence, data and assurance landscape. Overcoming them requires coordinated responses through the AASF, its Data Ecosystem and the proposed Claims Program. Together, these mechanisms provide the governance, data architecture and operational processes needed to strengthen credibility, reduce duplication and support market confidence.

1 ***Inconsistent and confused terminology***



The Claims Program establishes national definitions for key terms such as *sustainability claim, evidence, verification* and *credential*. The AASF establishes national definitions for sustainability *principles and criteria*. The AASF Data Ecosystem would establish *indicators, methods and metrics*. Collectively, this infrastructure provides a shared vocabulary across sectors and markets. These definitions create a transparent foundation to ensure claims and credentials are interpreted consistently both domestically and internationally. By clarifying language, comparability is enabled and one of the key sources of confusion undermining trust in Australian sustainability claims is removed.

2 ***Trust and credibility as foundations***



The Claims Program establishes a process for transparent and comparable sustainability credentials underpinned by trusted governance, providing clarity on what credentials exist, how/if they are verified and by whom.

3 ***The sustainability data ecosystem is anarchic***



The proposed AASF Data Ecosystem supports interoperability of data and information (by answering “what data?”) so that evidence can be collected once and re-used many times, reducing duplication and improving credibility. The Claims Program leverages this to make sustainability credentials more comparable, therefore providing greater assurance as to their credibility.

4 ***Unclear credibility of credential schemes***



The Claims Program creates coherence across the diverse landscape of sustainability credentialing programs without imposing a single model. It introduces a transparent reference system for credentials. This allows equivalence and credibility to be assessed consistently, enabling markets, producers and regulators to recognise appropriate programs while maintaining flexibility for sector-specific approaches.

5

***Producer
burden and
value***



The Claims Program helps producers understand which schemes and programs are recognised by their markets/customers and how their existing participation aligns with others, reducing the need to duplicate effort.

6

***Fragmented
national
coordination***



The Claims Program establishes a coordinated national approach that makes visible how different sustainability credential programs fit together using consistent language. It provides a single reference point, underpinned by the AASF, by which sector initiatives, certification schemes and procurement requirements can be assessed. Through the AASF Data Ecosystem, evidence can be made comparable, reducing confusion for producers and enabling consistency and mutual recognition across supply chains. The Claims Program then clarifies what level of assurance supports each claim, ensuring transparency for markets and regulators.

7

***National and
farm-scale
assurance***



The Claims Program recognises both farm-level and national/sectoral tiers of claims. It also provides market-sensitive differentiation, showing which assurance method is acceptable in which markets, so producers, supply chains and industry can choose the most appropriate and efficient pathway without duplicating effort.

8

***Productivity and
competitiveness***



The Claims Program promotes standardisation so that evidence and verification requirements (where relevant) can be recognised across multiple schemes and markets. This reduces duplication and compliance costs, enabling the same data to serve many purposes. By allocating resources to on-farm improvement, assurance supports productivity and strengthens Australia's international competitiveness rather than becoming a drag on efficiency.

Considerations for Government and Industry

Strengthening Australia's sustainability claim environment will require coordination across government, industry, supply chains and the broader agricultural ecosystem. No single organisation or sector can address the challenges alone; each holds part of the capability, data and influence needed to build a coherent national approach.

Government and industry may therefore wish to consider the following:

- **Aligning national and sectoral efforts**

Greater alignment between national-level sustainability initiatives and sector-specific frameworks would reduce duplication and enable more consistent messaging domestically and internationally. Government and industry bodies can work together to identify areas of commonality, such as definitions, topics, indicators, contexts, metrics, measures and evidence expectations, while preserving sectoral diversity where necessary.

- **Support for data interoperability**

Producers, supply chains and policy-makers all benefit from evidence that is collected once and used many times. Investing jointly in interoperable data foundations, common identifiers, shared reference datasets and permissioned data-sharing protocols, would reduce burden and improve the credibility of claims across markets.

- **Risks of inaction**

If government and industry do not support coordination or infrastructure investment, Australia risks:

- fragmented responses, with overlapping private schemes creating confusion and higher costs for producers and other supply chain actors;
- international markets defaulting to EU or other overseas standards that do not reflect Australian production realities;
- sustainability claims being seen as less credible, heightening the risk of greenwashing accusations or stricter import conditions;
- missed opportunities to leverage Australia's strong regulatory baseline as a competitive advantage; and
- erosion of productivity, as producers and other supply chain actors face growing demands to supply the same data multiple times in different formats.

- **Leveraging existing regulatory strengths**

Australia's strong domestic regulatory base, including the APVMA's risk-based chemical approvals, biosecurity laws, food safety and welfare regulation already provides many safeguards required of markets and investors. These should be actively promoted and

recognised as part of the evidence base for sustainability claims in trade diplomacy and equivalence negotiations. Without this, Australia risks losing the ability to differentiate itself internationally and forfeiting a major market advantage.

- **International alignment**

With the rapid evolution of frameworks such as EU CSRD, CSDDD, Green Claims Directive, EUDR, and CBAM, there is a growing need for government and industry to support coordinated mechanisms that enable horizon scanning, negotiating and advocacy to ensure Australia's unique conditions are recognised in global settings.

This includes embedding Australia's regulatory and industry frameworks within equivalence or mutual recognition arrangements so that credible Australian evidence and credentials are accepted internationally, minimising the risk of double compliance.

The AASF and the Agricultural Sustainability Australia Alliance (ASA Alliance) (which is proposed to continue and expand the AASF's coordination function) can play a complementary role by coordinating sector-led sustainability credentials, coordinating technical input from across agriculture, and providing government with coherent, credible evidence to underpin trade negotiations and regulatory recognition.

- **Supporting foundational coordination mechanisms**

National initiatives such as the AASF and the ASA Alliance lay the foundation for credible sustainability assurance by providing consistency across sectors, supporting mutual recognition and aligning domestic initiatives with international expectations. These mechanisms do not replace or override sector-specific approaches but amplify them and provide the coherence needed for sustainability claims to be recognised in global markets. Government and industry support of such initiatives is essential to ensure they are adequately resourced and trusted as part of Australia's long-term trade and sustainability strategy.

- **Standards and international influence**

Without coordinated investment and accountability, international markets will likely default to EU or other overseas standards that do not reflect Australian production realities. Currently, no single body is responsible nor accountable for setting or stewarding agricultural sustainability standards domestically; responsibility is fragmented across sectors and private initiatives. This weakens Australia's ability to influence the development of global standards and creates exposure to costly misalignment.

Initiatives such as the AASF, ASA Alliance and Standards Australia's Data Driven Agrifood Systems Committee (the national mirror to ISO TC 347) demonstrate how this accountability gap can be addressed but stronger government and industry backing is required. A dedicated centralised mechanism for agricultural standardisation would ensure Australian perspectives are embedded in international rule-setting, protecting market access and competitiveness.

This set of considerations is intended to inform joint strategic planning rather than prescribe any specific course of action. A coordinated, collaborative approach would allow government and industry to respond flexibly as global sustainability expectations continue to evolve.

10. Gaps and next steps

Basis of the project

This project was initiated to identify how Australian agriculture's sustainability claims can be assured such that they support export market requirements while reflecting the diversity of the Australian industry and Australia's unique natural, social and legislative environment.

The intended outcomes were to:

1. Inform a national discussion on ensuring evidence-based sustainability claims that enable:
 - a. meaningful engagement with global sustainability initiatives;
 - b. promotion of international trade and market access; and
 - c. creation of tangible benefits to the economy and agriculture sector.
2. Recommend methods and requirements to underpin claims that are adaptable, context-relevant, leverage existing initiatives and datasets, avoid undue burden, and enable interoperability through traceability.
3. Inform continual improvement within national and industry sustainability initiatives.
4. Demonstrate how recommendations can be practically applied and outline the anticipated benefits.

The research, Discussion Paper, consultation process, Insights Report and this report along with the outputs from the AASF Data Ecosystem Design project, all contribute towards these objectives:

- **The research, Discussion Paper and consultation process** frames the importance of credible, evidence-based sustainability claims and identifies broad stakeholder consensus on key issues.
- **The Insights Report** distils these perspectives, confirming strong alignment with the project's objectives and clarifies where coherence, comparability and trust are most needed.
- **AASF Data Ecosystem Design Reports** demonstrate how nationally coordinated data infrastructure and governance can provide the enabling environment for sustainability claims, creating the governance processes that ensure evidence can be consistently discovered, shared and used across commodities and supply chains.
- **This report** builds on the work above by consolidating findings into a forward-looking set of concepts, structures and governance considerations, outlining how evidence, verification, credentials, claims and assurance can be enabled under the proposed ASA Alliance, leveraging the AASF Data Ecosystem.

Together, these documents provide a strong foundation. However, several gaps remain that must be addressed in the next stage to fully meet the intent.

Gaps identified

1. Tangible benefits for producers and the economy

- There is little evidence demonstrating that credentialing programs reduce costs for producers or create value at the farm gate.
- Cross-sectoral research about the farm gate value from credentialing programs is required.
- Piloting of the Claims Program to test value return to farm gate through improved efficiencies and productivity gains as well as potential premiums is required.

2. Practical application and demonstration

- This project has set principles but is conceptual at this stage.
- Stakeholders need clear examples with prototypes and pilots showing how evidence, verification, credentials, claims and assurance can work in practice across commodities.

3. Assessment of benefits or counterfactual

- Opportunities such as greater coherence, reduced duplication and stronger international recognition are identified, however articulating a traditional cost–benefit analysis is not feasible given the diversity of production systems and markets. Therefore, a counterfactual approach assessment is required that examines the risks and foregone opportunities if national coordination is not established.
- Without action, producers and supply chains face growing compliance burdens, fragmented requirements and trade barriers, while Australia risks reputational damage and diminished competitiveness. This report highlights these dynamics, but further work is required to set out the counterfactual clearly to underpin government and industry investment decisions.

Next steps

• **Prototype and pilot**

Prototype development and conceptual testing of parts of the Claims Program and piloting the Claims Program, delivered under the AASF Data Ecosystem via the ASA Alliance. Select three commodities as case studies to test the full approach, from gathering evidence, to making sustainability claims, to underpinning those claims with credentials, to assuring them in ways that meet market and regulatory expectations. These pilots should demonstrate how the Claims Program can reduce burden, enhance credibility and deliver value while providing proof-of-concept for national rollout.

- **Feedback loops**

Define mechanisms for national coordination (via ASA Alliance) to support sector frameworks, enable continual improvement and avoid duplication.

- **Counterfactual analysis**

Articulate the risks of inaction, including fragmented requirements, rising compliance costs, reputational risks and potential trade impacts. Use this counterfactual framing to demonstrate the necessity of coordinated action and justify investment by government and industry.

- **Premiums assessment**

Initiative research into quantifying farm gate premiums and industry value for participation in credentialling programs.

APPENDICES

Appendix 1: Categories of sustainability claim use

Consumer-facing materials	Business-to-business and supply chain materials	Investor, banking and finance-related contexts	Government and regulatory-related
<ul style="list-style-type: none"> • Product labels or packaging. • Certification logos or trust marks. • Marketing materials (advertisements, websites, brochures, etc.). • Point-of-sale displays and shelf labels. • Social media or brand communications. • Product environmental footprint information. • Public ESG or sustainability reports (corporate or brand-specific). 	<ul style="list-style-type: none"> • Reporting documentation to buyers or retailers. • Supply chain assurance or traceability systems (e.g. NLIS, mass balance systems). • Sustainability data submissions to buyer platforms (e.g. Sedex, SAI, retailer supplier portals). • Supplier self-assessments or attestations. • Procurement documentation (e.g. tenders, RFPs, supplier onboarding forms). • GHG or environmental impact calculators integrated into trade documentation. • Evidence submitted to meet retailer-specific codes of conduct or audit programs (e.g. SMETA, BRCGS). • Sustainability certifications required in contracts (e.g. for export tenders or supermarket supply). • Verified third-party audit reports (e.g. ISCC, RSPCA Approved, SWA). 	<ul style="list-style-type: none"> • ESG risk assessments for investment or lending decisions. • Sustainability-linked loans (e.g. claims used to trigger interest rate discounts or loan terms). • Green bond or sustainable finance instruments. • Corporate sustainability or integrated reporting (aligned with standards like TCFD, ISSB, CSRD). • Data for Scope 3 emissions reporting by banks or corporate buyers. • Claims used to meet sustainability thresholds in investment portfolios or indexes. • Sustainability metrics or certifications required for project or agribusiness funding. • Disclosures in IPO, merger, or acquisition documentation. • Evidence provided to insurance companies for underwriting or premium decisions. 	<ul style="list-style-type: none"> • Trade and export compliance declarations. • Data or evidence submitted to support biosecurity or food safety claims. • Evidence submitted for carbon crediting or biodiversity stewardship schemes.

Appendix 2: Analysis of sustainability credentialing programs and their return of producer-facing premiums

Note this analysis is general in nature, based on publicly available information taken at face value and stakeholder feedback. A deeper assessment of this should be considered.

Program	Typical sector(s)	Is there a consistent farm-gate premium?	What value is conveyed to be delivered instead
MSC (Marine Stewardship Council)	Seafood	Mixed, mostly retail-side: multiple studies find retail price premiums for MSC-labelled products; dockside/ex-vessel premiums are limited or inconsistent.	Market access (EU/UK/NA retailers), brand protection, supply-chain acceptance. MSC's own synthesis also emphasises market access and stability over consistent dockside gains.
GLOBALG.A.P.	Horticulture/plant-based	Generally, no: widely treated as a retailer entry requirement, not a price-premium mechanism (evidence from bananas/tea/horticulture supply chains).	Access to major retailers; compliance signalling; reduced buyer audit duplication.
SAI Platform – FSA (benchmarking)	Dairy/plant-based	No: it's a benchmarking/equivalence tool, not a price label.	Recognition across buyers; "once-assessed, many-accepted" efficiencies via equivalence/benchmarks.
AWSS (Australian Wool Sustainability Scheme)	Wool	No evidence of systematic premiums.	Industry narrative, reporting coherence; potential to smooth buyer due diligence, not a price instrument.
ISCC (canola → biofuels)	Grains (canola)	Sometimes/conditional: premiums can arise when ISCC unlocks EU biodiesel demand; documented in industry guidance (varies with policy and market conditions).	Market eligibility (EU RED channels), offtake security; potentially better basis differentials when fuel demand is strong.
Sedex/SMETA	Horticulture, wine, multi-sector	No: not a pricing tool, an audit/assessment used in B2B due diligence.	Buyer acceptance, consolidated social/labour audits; reduced audit duplication.

Program	Typical sector(s)	Is there a consistent farm-gate premium?	What value is conveyed to be delivered instead
myBMP / Better Cotton	Cotton	In Australia, growers can sell Better Cotton credits (BCCUs), some have negotiated credit premiums (separate from lint price).	Market access with global brands; potential credit-market revenue (BCCUs); capacity-building support.
Leading Harvest	Grains/row crops/forestry (landholders, managers)	No: designed for stewardship assurance valued by investors and buyers, not a per-tonne premium.	Access to capital/buyers with ESG screens; portfolio risk management signal.
Green Food (China)	Plant-based	Context-dependent: studies show premiums/WTP, especially in online channels, but effects vary by product and market.	Signal for safety/"clean" production in China; access to certain distribution channels.
Fairtrade	Bananas, coffee, cocoa; some wine/cotton	Yes (structured): Fairtrade Minimum Price + Premium is built into the standard (paid in addition to price when applicable).	Price floor + community/producer Premium; verified transfers; strong story for buyers. fairtrade.net
Regenagri	Mixed (regen systems)	No consistent evidence of farm-gate premiums; benefits reported tend to be buyer preference/relationships rather than fixed price uplifts.	Potential supplier preference and storytelling; agronomic co-benefits (long-term).
Organic certification	Beef, wine, horticulture, grains, cotton (some)	Yes (retail, often); farm-gate depends on supply chain. Robust evidence of retail premiums, with size varying by product; farm-gate pass-through varies.	Access to organic channels; brand differentiation; sometimes contract terms that share value upstream.

Appendix 3: Case study application of the Claims Program

Current schemes and initiatives

Australian Wool Sustainability Scheme (AWSS)

The Australian Wool Exchange (AWEX) has developed the Australian Wool Sustainability Scheme (AWSS) to provide a recognised sustainability credential for wool. The scheme is underpinned by a sustainability standard and enabled by the mandatory use of the eBale system, which assigns a unique RFID/QR identifier to every bale of wool. On-farm practice data is captured via WoolClip and verified through audits, with links to bale identifiers.

Register entry (illustrative):

- **Credential:** “AWSS Certified Wool Bale/Lot”
- **Issuer/Owner:** Australian Wool Exchange (AWEX)
- **Scope:** Bale/Lot/Shipment, tied to eBale identifiers
- **Topics (Indicators):** GHG emissions, soil health, water use, biodiversity, animal welfare — mapped to the national indicator register
- **Methods:** AWSS sustainability metrics and audit protocols, referenced in the national methods catalogue
- **Datasets:** On-farm practice data via WoolClip, eBale event records, certification audit artefacts — cited in the datasets catalogue
- **Verification**
- **Assurance:** Third-party audit of farm practices, supported by technology-enabled traceability via eBale
- **Data-quality status:** Assessed for accuracy, timeliness, and traceability integrity through eBale scanning and audit checks
- **Recognition:** Textile Exchange, global wool buyers, and international eco-labelling programs; visible in the Register as a market-recognised sustainability credential
- **Evidence access:** Permissioned access through AWEX/WoolClip systems; eBale provides the non-repudiable identifier but evidence is not stored in the Register
- **Integrity initiatives:** Standard is owned by AWEX and maintained under the guidance of an independent expert panel, audits are undertaken by third parties.

Identifiers and interoperability:

Each bale has a QR/RFID eBale identifier that acts as the digital anchor. The Program requires these identifiers to be shared to resolve consistently across systems, ensuring credentials can be validated and re-used by buyers, regulators, and financiers.

GLOBALG.A.P.

GLOBALG.A.P. is an international farm assurance program that sets voluntary standards for the certification of agricultural products worldwide, especially fruit, vegetables, and horticulture. It covers food safety, environmental management, workers' health and safety, and animal welfare for livestock. Many international retailers require GLOBALG.A.P. certification for suppliers.

Register entry (illustrative):

- **Credential:** "GLOBALG.A.P. Certified Farm/Product"
- **Issuer/Owner:** GLOBALG.A.P. c/o FoodPLUS GmbH (scheme owner)
- **Scope:** Farm/enterprise level; product-level claims linked through certification rules
- **Topics (Indicators):** Food safety, pesticide/chemical management, water, soil health, labour practices — mapped to national indicator register
- **Methods:** GLOBALG.A.P. standards and audit protocols — referenced in methods catalogue
- **Datasets:** Farm assurance records, pesticide/water use data, audit evidence — cited in datasets catalogue
- **Verification**
- **Assurance:** Third-party certification through accredited auditors
- **Data-quality status:** Evidence assessed through independent audits; classified accordingly by the Program
- **Recognition:** Widespread retailer and buyer acceptance in Europe, Asia and beyond; Register shows which markets formally recognise GLOBALG.A.P.
- **Evidence access:** Via GLOBALG.A.P. certification systems; not stored in Register
- **Integrity initiatives:** Standard is owned by FoodPLUS GmbH and maintained under the governance arrangements including standards committees etc., audits are undertaken by third parties approved for auditing and certification.

Identifiers and interoperability:

Farm IDs, product-level GS1 identifiers, certification IDs; Program expects alignment with identifiers/interoperability standards.

ISCC (International Sustainability and Carbon Certification)

The International Sustainability and Carbon Certification (ISCC) system is one of the most widely used global schemes for sustainable biomass, biofuels, and food/feed crops, including Australian canola. It provides assurance that production meets greenhouse gas savings, land-use, and traceability requirements under the EU Renewable Energy Directive (RED) and other regulatory frameworks.

Register entry (illustrative):

- **Credential:** “ISCC Certified Sustainable Canola”
- **Issuer/Owner:** ISCC System GmbH (international scheme owner)
- **Scope:** Farm/enterprise through to supply chain consignment
- **Topics (Indicators):** Land-use change, GHG emissions, biodiversity, soil health — mapped to the national indicator register
- **Methods:** ISCC system documents and audit protocols — referenced in the methods catalogue
- **Datasets:** Farm records, land-use/geolocation data, emissions calculators, chain-of-custody records — cited in datasets catalogue
- **Verification**
- **Assurance:** Third-party certification (compliance audits at farm and supply chain levels)
- **Data-quality status:** Evidence assessed through audit reports and calculator verification; Program classifies assurance accordingly
- **Recognition:** EU Renewable Energy Directive (RED) compliance, supply-chain buyer recognition; Register lists recognition by EU regulators and international biofuel markets
- **Evidence access:** Via ISCC certification systems; evidence not stored in Register
- **Integrity initiatives:** Owned by ISCC System GmbH with governance by a multi-stakeholder Technical Committee; audits are conducted by accredited, independent certification bodies.

Identifiers and interoperability:

Farm property IDs, consignment IDs, GS1 identifiers for traceability; Program requires conformance with interoperability standards.

Leading Harvest

Leading Harvest is a relatively new sustainability assurance program, originating in US agriculture and forestry, now expanding into Australia through pilot projects. It applies a universal farmland management standard, verified by independent audits, to demonstrate outcomes across environmental stewardship, community, and productivity.

Register entry (illustrative):

- **Credential:** “Leading Harvest Certified Operation”
- **Issuer/Owner:** Leading Harvest (scheme owner, US-based with Australian pilots)
- **Scope:** Enterprise/farm management unit, applicable to multiple commodities
- **Topics (Indicators):** Soil health, biodiversity, water use, GHG, worker/community wellbeing — mapped to national indicator register
- **Methods:** Leading Harvest Standard and verification framework — referenced in methods catalogue
- **Datasets:** Farm practice data, management plans, audit records — cited in datasets catalogue
- **Verification**
- **Assurance:** Third-party certification via accredited auditors
- **Data-quality status:** Evidence assessed through audits and management reviews; Program classifies assurance accordingly
- **Recognition:** Growing buyer and investor acceptance in US and global markets; register would note recognition status and equivalence mapping to Australian commodities
- **Evidence access:** Via Leading Harvest systems; not stored in Register
- **Integrity initiatives:** Standard is governed by the Leading Harvest Board with stakeholder representation; certification audits are undertaken by accredited independent auditors.

Identifiers and interoperability:

Farm IDs, enterprise IDs, and GS1 product IDs where applicable; Program requires conformance with interoperability standards.

Marine Stewardship Council (MSC)

The Marine Stewardship Council (MSC) is a globally recognised certification program for sustainable seafood. It applies science-based standards to fisheries, with third-party audits verifying compliance. MSC certification underpins eco-labelling in major international markets and is widely required by seafood buyers.

Register entry (illustrative):

- **Credential:** “MSC Certified Sustainable Seafood”
- **Issuer/Owner:** Marine Stewardship Council (MSC)
- **Scope:** Fishery/enterprise level, applicable to seafood products bearing the MSC eco-label
- **Topics (Indicators):** Biodiversity protection, ecosystem health, fish stock sustainability, resource management — mapped to the national indicator register
- **Methods:** MSC Fisheries Standard, third-party audit protocols — referenced in the methods catalogue
- **Datasets:** Fishery catch records, ecosystem impact studies, audit reports — cited in the datasets catalogue
- **Verification**
- **Assurance:** Third-party certification with independent audit
- **Data-quality status:** Assessed via audit artefacts; Program classifies assurance level accordingly
- **Recognition:** Major seafood buyers, EU, US and Asian markets; register lists global acceptance of MSC credentials
- **Evidence access:** Via MSC audit and certification systems; not stored in the register
- **Integrity initiatives:** MSC is governed by a Board and Technical Advisory Board with scientific oversight; audits are conducted by accredited certification bodies against MSC standards

Identifiers and interoperability:

Fishery identifiers and product-level GS1 IDs; aligned to Program interoperability standards for traceability.

myBMP (Cotton Australia)

myBMP is the Australian cotton industry's on-farm assurance program. It benchmarks growers against best practice standards covering water, pesticide use, soil, biodiversity and workplace safety. Growers who achieve certification under myBMP can access international recognition, including equivalence with the Better Cotton Initiative (BCI).

Register entry (illustrative):

- **Credential:** "myBMP Certified Cotton Farm"
- **Issuer/Owner:** Cotton Australia
- **Scope:** Farm/enterprise level, applicable to cotton fibre produced under certification
- **Topics (Indicators):** Water use efficiency, pesticide/chemical stewardship, soil health, biodiversity, labour and safety — mapped to the national indicator register
- **Methods:** myBMP practice standards and audit protocols — referenced in the methods catalogue
- **Datasets:** Farm practice records, pesticide use logs, water efficiency data, audit reports — cited in the datasets catalogue
- **Verification**
- **Assurance:** Third-party certification with on-farm audits
- **Data-quality status:** Evidence assessed via audit records; Program classifies assurance level accordingly
- **Recognition:** International recognition through BCI equivalence; Register lists acceptance in key textile supply chains
- **Evidence access:** Via cotton data platform; not stored in the Register
- **Integrity initiatives:** Program is owned by Cotton Australia; audits are engaged and paid directly by Cotton Australia to conduct farm assessments against myBMP standards

Identifiers and interoperability:

Farm IDs, cotton bale IDs (aligned with GS1 identifiers); interoperable across myBMP, ginning and export systems.

regenagri®

regenagri® is an international regenerative agriculture certification scheme covering cropping, livestock and fibre. It verifies regenerative practices through a mix of self-assessment, on-farm audits and outcome-based metrics (such as soil organic matter). Australian producers and brands are beginning to use regenagri to demonstrate regenerative claims in both domestic and export markets.

Register entry (illustrative):

- **Credential:** “regenagri® Certified Farm/System”
- **Issuer/Owner:** Control Union / regenagri® program
- **Scope:** Enterprise/farm level, applicable to commodities produced under certification
- **Topics (Indicators):** Soil health, biodiversity, water use, carbon storage, nutrient management — mapped to the national indicator register
- **Methods:** regenagri regenerative practice metrics and audit protocols — referenced in the methods catalogue
- **Datasets:** Farm-level practice records, soil testing results, biodiversity monitoring — cited in the datasets catalogue
- **Verification**
- **Assurance:** Combination of self-assessment, third-party audits, and outcome monitoring
- **Data-quality status:** Program protocols applied to ensure credibility of soil and biodiversity outcome data
- **Recognition:** Growing buyer acceptance, especially in EU and UK textile and fibre markets; visible in the register as a regenerative credential
- **Evidence access:** Via regenagri assurance systems; evidence not stored in the register
- **Integrity initiatives:** Owned by Control Union with oversight through program governance structures; audits conducted by Control Union’s own auditing teams.

Identifiers and interoperability:

Farm IDs and GS1 product identifiers for commodities; Program expects alignment with interoperability standards.

Sustainable Winegrowing Australia (SWA)

Sustainable Winegrowing Australia (SWA) is the national sustainability program for the wine sector, jointly delivered by Australian Grape & Wine and Freshcare. Certification under SWA has grown rapidly in response to retailer and buyer requirements, with over 65% of vineyard area now covered. The program verifies environmental, social and community practices through audits, resulting in a recognised credential increasingly required in supply agreements and tenders.

Register entry (illustrative):

- **Credential:** “SWA Certified Vineyard/Winery”
- **Issuer/Owner:** Australian Grape & Wine / Freshcare
- **Scope:** Enterprise/site level, applicable to products via certification rules
- **Topics (Indicators):** GHG, water, biodiversity, labour, community — mapped to indicator register
- **Methods:** SWA audit protocols — referenced in methods catalogue
- **Datasets:** Vineyard management data, audit records — cited in datasets catalogue
- **Verification**
- **Assurance:** Third-party certification (audit-based)
- **Data-quality status:** Assessed through audit evidence; Program classifies assurance level accordingly
- **Recognition:** Retailer and buyer recognition; Register shows acceptance in Scandinavian monopolies, UK retailers, etc.
- **Evidence access:** Via SWA systems; evidence not stored in Register
- **Integrity initiatives:** Jointly owned by Australian Grape & Wine and Freshcare, with program oversight through an industry governance committee; audits are conducted by auditors accredited under the Freshcare system and engaged through Freshcare processes.

Identifiers and interoperability:

Vineyard/winery IDs, linked to GS1 identifiers for products in trade.

Appendix 4: Acronyms

Term	Definition
AADX	Australian AgriFood Data Exchange
AASF	Australian Agricultural Sustainability Framework
AATGG	Australian Agricultural Traceability Governance Group
AATP	Australian Agricultural Traceability Protocol
ABS	Australian Bureau of Statistics
ABSF	Australian Beef Sustainability Framework
ACSF	Australian Cotton Sustainability Framework (PADDOCK:PEOPLE:PLANET)
ADSF	Australian Dairy Sustainability Framework
AFi	Accountability Framework initiative
AGSF	Australian Grains Industry Sustainability Framework
AHSF	Australian-grown Horticulture Sustainability Framework
AIA	Agriculture Innovation Australia
APVMA	Australian Pesticides and Veterinary Medicines Authority
ASA Alliance	Agricultural Sustainability Australia Alliance
ASFI	Australian Sustainable Finance Institute
ASCWG	Assuring Sustainability Claims Working Group
ASSF	Australian Sheep Sustainability Framework
ATO	Australian Taxation Office
AWEX	Australian Wool Exchange
AWI	Australian Wool Innovation
AWSS	Australian Wool Sustainability Scheme
BCI	Better Cotton Initiative
BCCU	Better Cotton Credit Unit
BRCGS	Brand Reputation Compliance Global Standards
CBAM	Carbon Border Adjustment Mechanism (EU)
CGG	Claims Governance Group
CRFD	Climate-Related Financial Disclosures
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CSRD	Corporate Sustainability Reporting Directive (EU)
CSDDD	Corporate Sustainability Due Diligence Directive (EU)
DAFF	Department of Agriculture, Fisheries and Forestry
DCCEEW	Department of Climate Change, Energy, Environment and Water
DPP	Digital Product Passport (EU)

Term	Definition
DSWG	Data Standards Working Group
EAP	Environmental Accounting Platform
EPA	Environmental Protection Agency (US)
ESG	Environmental, Social and Governance
EU	European Union
EUCAS	European Union Cattle Accreditation Scheme
EUDR	EU Deforestation Regulation
FMCG	Fast-Moving Consumer Goods
FSA	Farm Sustainability Assessment (SAI Platform)
FSB	Financial Stability Board
FSC	Forest Stewardship Council
FTA	Free Trade Agreement
GEA	Green Economy Agreement (Singapore-Australia)
GHG	Greenhouse Gas
GRI	Global Reporting Initiative
GS1	Global Standards 1 (supply chain standards organization)
IDAC	Indicator and Data Advisory Council
IFRS	International Financial Reporting Standards
ILO	International Labour Organization
ISCC	International Sustainability & Carbon Certification
ISEAL	International Social and Environmental Accreditation and Labelling Alliance
ISO	International Organization for Standardization
ISSB	International Sustainability Standards Board
JAS	Japanese Agricultural Standards
KPI	Key Performance Indicator
LCA	Life Cycle Assessment
MRL	Maximum Residue Limit
MSC	Marine Stewardship Council
myBMP	Best Management Practice (Cotton Australia Certification)
NDC	Nationally Determined Contribution
NFF	National Farmers' Federation
NLIS	National Livestock Identification System
NRS	National Residue Survey
PEF	Product Environmental Footprint (EU)
PFMM	Preferred Fiber & Materials Matrix (Textile Exchange)

Term	Definition
PPWR	Packaging and Packaging Waste Regulation (EU)
PRI	UN Principles of Responsible Investment
PubCRIS	Public Chemical Registration Information System Search (APVMA)
R&DWG	Research and Development Working Group
RED	Renewable Energy Directive (EU)
RFS	Renewable Fuel Standard (US)
RFID	Radio Frequency Identification
RIN	Renewable Identification Number (US)
RSPO	Roundtable on Sustainable Palm Oil
RWS	Responsible Wool Standard
SAFTA	Singapore-Australia Free Trade Agreement
SAI	Sustainable Agriculture Initiative
SBTi	Science Based Targets initiative
SDWG	Sustainability Data Working Group
SEC	Securities and Exchange Commission (US)
SMETA	Sedex Members Ethical Trade Audit
SWA	Sustainable Winegrowing Australia
TCFD	Task Force on Climate-related Financial Disclosures
TERN	Terrestrial Ecosystem Research Network
TNFD	Taskforce on Nature-related Financial Disclosures
UFLPA	Uyghur Forced Labor Prevention Act (US)
UK	United Kingdom
UN	United Nations
US	United States
USDA	United States Department of Agriculture
WHS	Work Health and Safety
WTO	World Trade Organization