



AASF Data Ecosystem Project

*From Anarchy to Order
Stage 2 Report Highlights*

September 2025

Australia's National Science Agency



THIS IS NOT A DATABASE

Or a Data Exchange or a Data Platform



What is a “Data Ecosystem”?

Typically, a data ecosystem will consist of a range of technical and social components, including:

- **Data Infrastructure**
- **Data Management Tools**
- **Data Security Management**
- **Integration and Interoperability Mechanisms**
- **Data Owners, Producers and Custodians**
- **Data Users, Scientists and Analysts**
- **Technology Providers and Data Brokers**
- **Policy Makers and Regulators, Standards Bodies and Consortiums**

Data Ecosystem Project – *Phase 2*

Project Intent

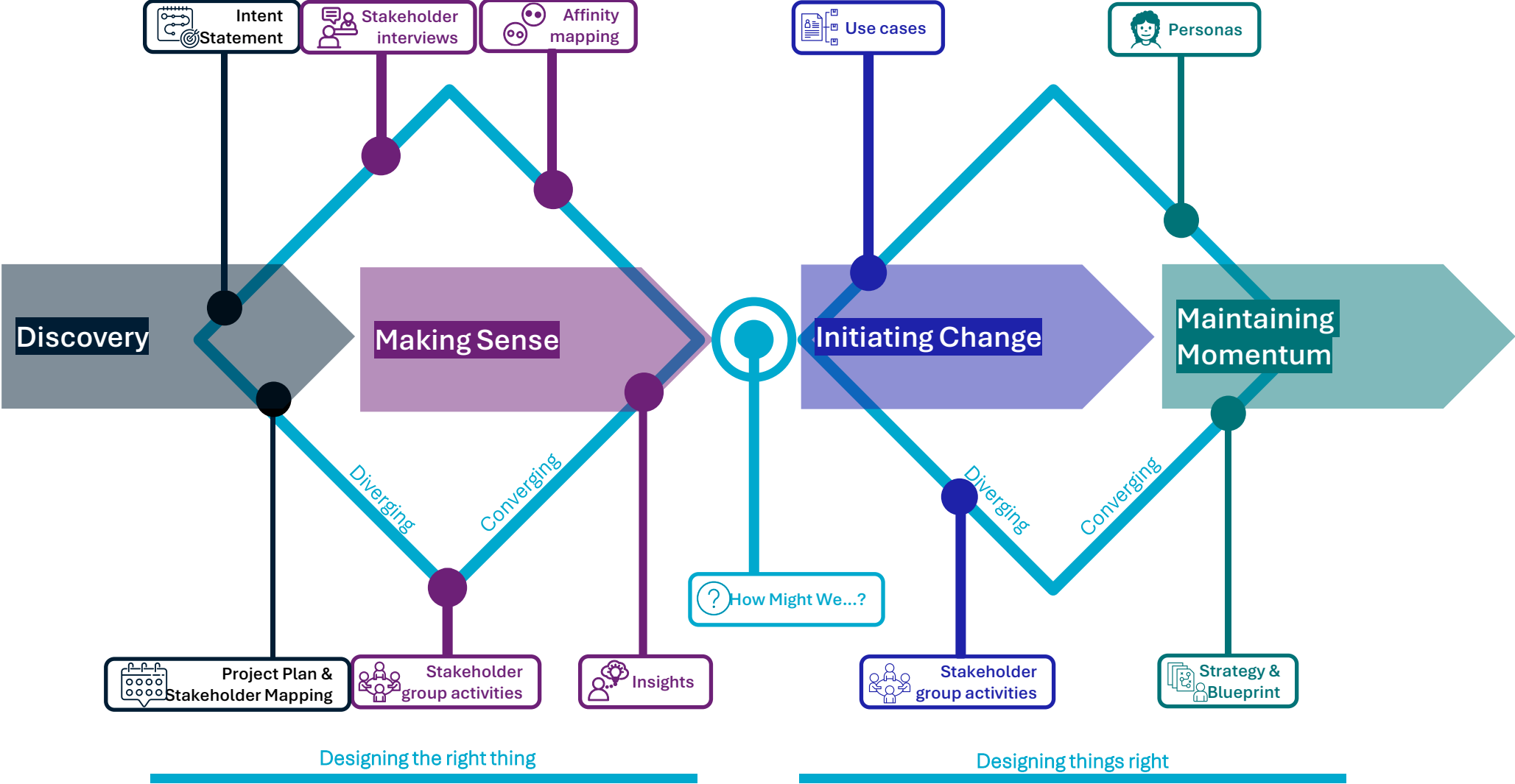
Bring together stakeholders from across the Australian agriculture to **develop priority use cases** and **prototype methods for operating and governing** an Australian Agricultural Sustainability Framework (AASF) data ecosystem.

Project Outcomes

Priority stakeholders will:

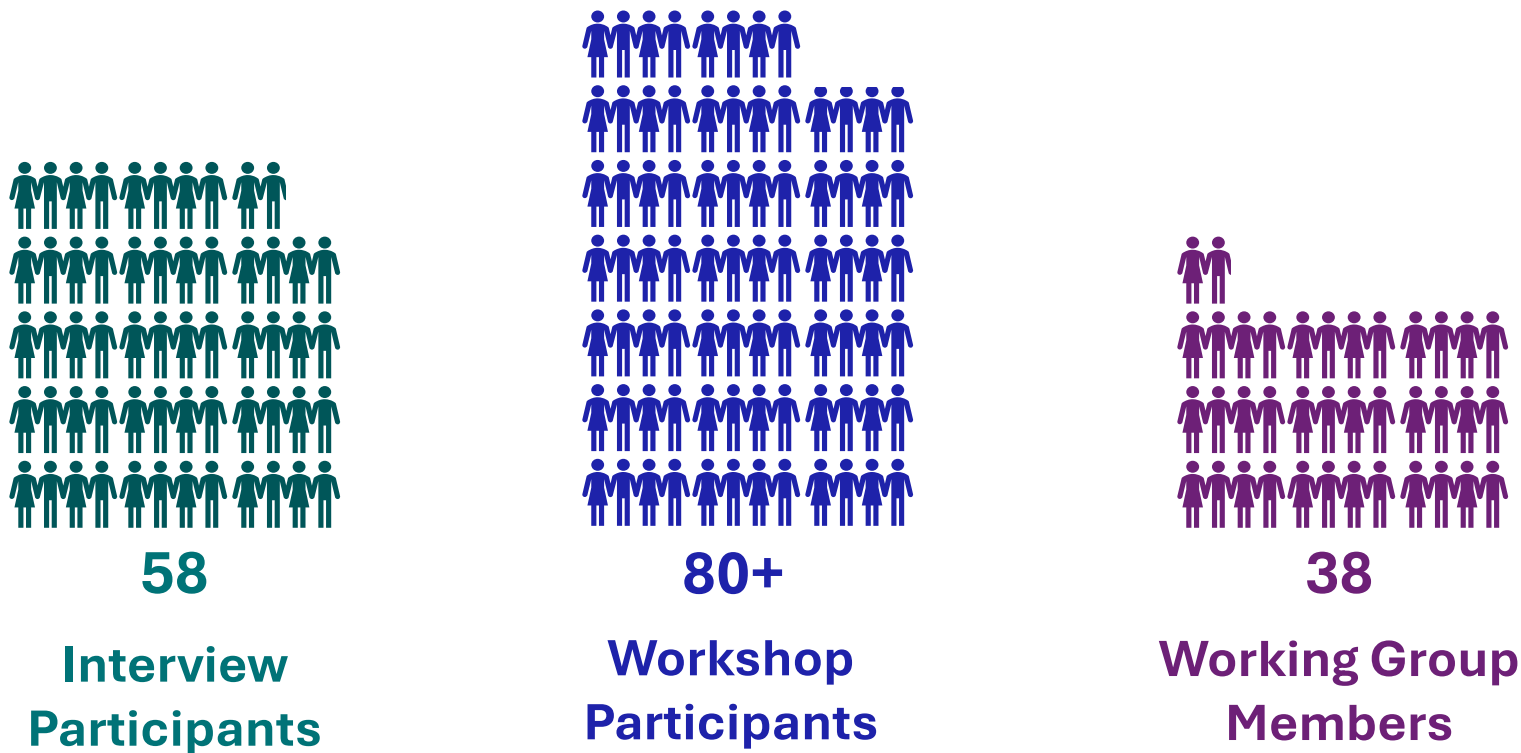
- **understand the mechanisms** by which the data needed to support the use of the AASF can be identified and assessed for suitability; and
- **have a robust plan** to develop appropriate supply arrangements which support ongoing availability and use of this data

Our Approach



Data Ecosystem Project – *Participants*

Throughout the course of the project, multiple participants were engaged in a range of research activities. These included a series of exploratory research interviews, an online workshop, a 2-day face to face co-design workshop and two rounds of face to face working group sessions. All information provided by participants in these activities has been de-identified and all reports (including this presentation) contain anonymised quotes.



Current State

Current State – *Insights*

Different drivers are informing how organisations develop their data practices, frameworks and governance arrangements

Data sharing within the agricultural sustainability sector is undertaken on an ad-hoc basis

The current agriculture sustainability data ecosystem is anarchic in nature

In general, stakeholders can see a range of benefits coming from the AASF Data Ecosystem

Different users will engage with and use the AASF and hence the AASF Data Ecosystem in different ways

The greatest opportunity of, and the greatest risk to, the data ecosystem is trust

Current State – Use Cases

INPUTS	Develop National Scale Sustainability Data Standards
	Develop National Scale Sustainability Data Sets
	Access subsetting aggregated sustainability data

ACTIVITIES	Benchmark sustainability credentials
	Trace sustainability credentials along supply chains
	Assess sustainability credentials

OUTPUTS	Assess farm sustainability
	Improve farm sustainability
	Reporting



Current State – Stakeholder Cohorts

The AASF Data Ecosystem consists of many different stakeholders. These stakeholders have different levels of capability, different goals, and different requirements of the data ecosystem. However, in amongst the many roles there are three key cohorts which can be distinguished based on their sharing of common experiences. These are: primary producers and processors; data and digital service providers; and, evidence requestors.



Primary Producers and Processors

Are at the forefront of producing data and information about sustainability practices within their operations; use a diversity of digital services to manage operations and communicate with evidence requestors; and, have variable levels of digital literacy and knowledge of the AASF



Data and Digital Service Providers

Provide digital systems, analytical tools and/or value-added datasets for a range of agricultural and sustainability related sectors; and, enable multiple connection points between Primary Producers & Processors with Evidence Requestors




Evidence Requestors

Require data and information about agricultural sustainability practices for multiple purposes; use a variety of digital services (including in-house services) to request information, analyse data and communicate findings


Current State – Personas




Primary Producers and Processors




Heather




Amandeep




Allan




Marcus



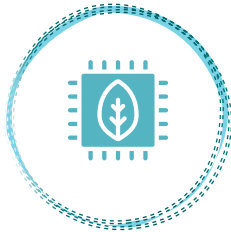
Alejandro




Tayla




Mary




Data and Digital Service Providers




Jane




Ben



Arina



Omid



Roger



Evidence Requestors



Bob



Fiona



Daniel



Garry



Troy



Paris



Pravin



Kahu



Rebecca



Paul



Connie



Fatimah



Maria



Saeed



Helen



Nikola



Prue



Jasmin



Primary Producers and Processors – *Mary*



Mary runs a mixed-commodity farm in Western Victoria

Mary needs to have multiple sustainability certifications for the supply chains she is involved in and is **fielding a multitude of different requests for her sustainability data.**

This is time consuming, and Mary **doesn't have a line of sight to long-term benefits** from the data collection and reporting activities she undertakes.

Data & Digital Service Providers – *Jane*



Jane is a director at a company supplying farm management software

Jane is **unable to easily distinguish the value** of her sustainability data collection product offerings for Australian ag producers and processors.

Evidence Requestors – *Maria*



Maria is the owner of a Commodity Framework

Margie is using unreliable survey or repurposed publicly available data to produce commodity sustainability reports which still have data gaps.

Future State

Future State – *Shifting Behaviours in the Data Ecosystem*

There are multiple processes, methods, standards and datasets being used by an extensive range of stakeholders who have varying requirements for the AASF.

For the current data ecosystem to *shift from being siloed and anarchic* to something which is *trusted, effective and efficient*, a set of structures need to be developed and implemented.

This is particularly important if the ecosystem is to *reduce the burden* on primary producers and processors for data collection and reporting activities and return benefits to these stakeholders.

Future State – *Focus*

The primary need of all stakeholders within the AASF community is to know **‘what data?’ ...**

... should be collected by producers and processors?

... can be asked for by evidence seekers?

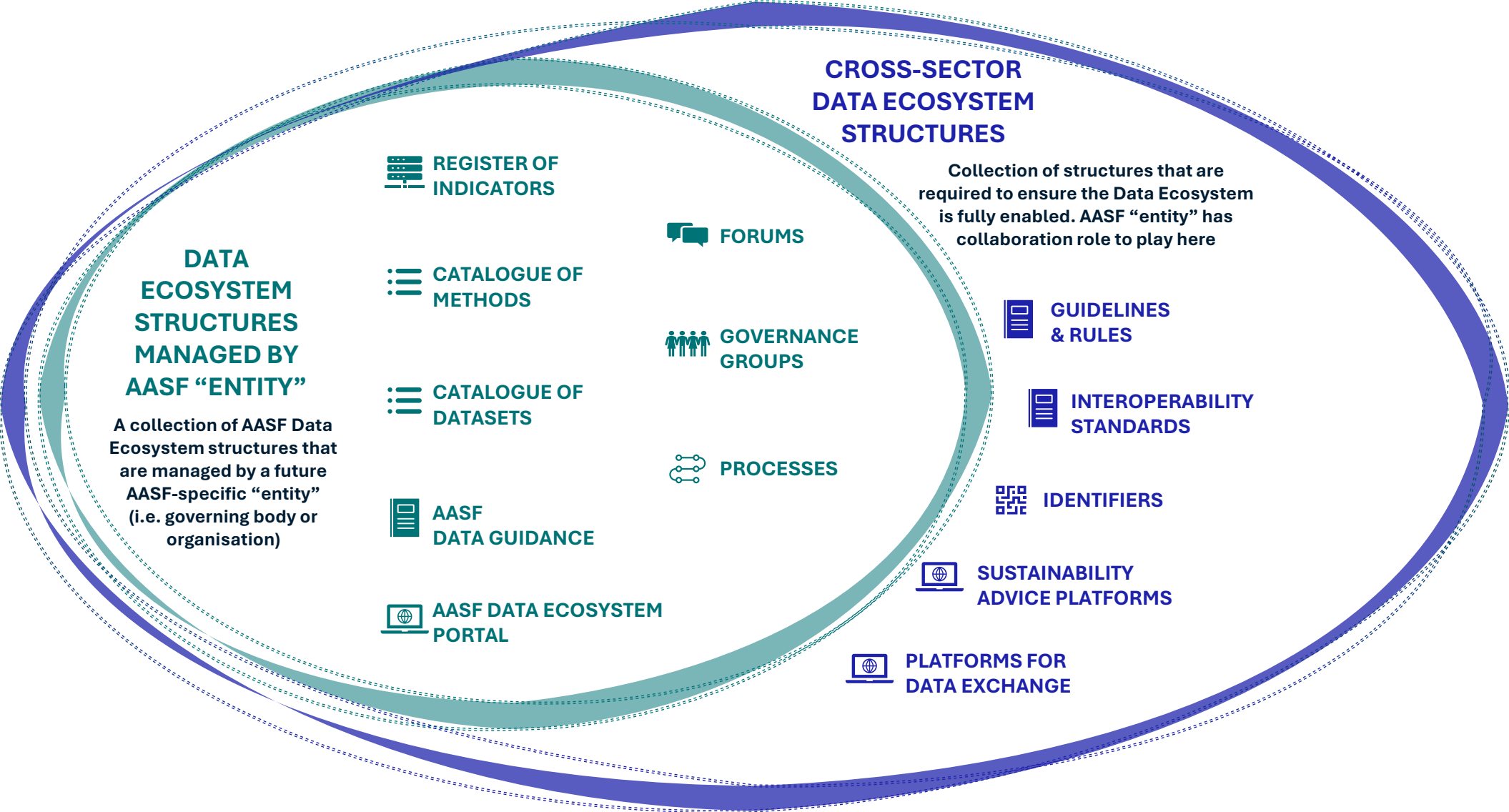
... should be supported by digital tools and services?

We need to bring order to the current state of anarchy around current data collection and requests within the data ecosystem.

To achieve this order, we propose that at the core of the future AASF Data Ecosystem is a well governed list (register) of indicators.

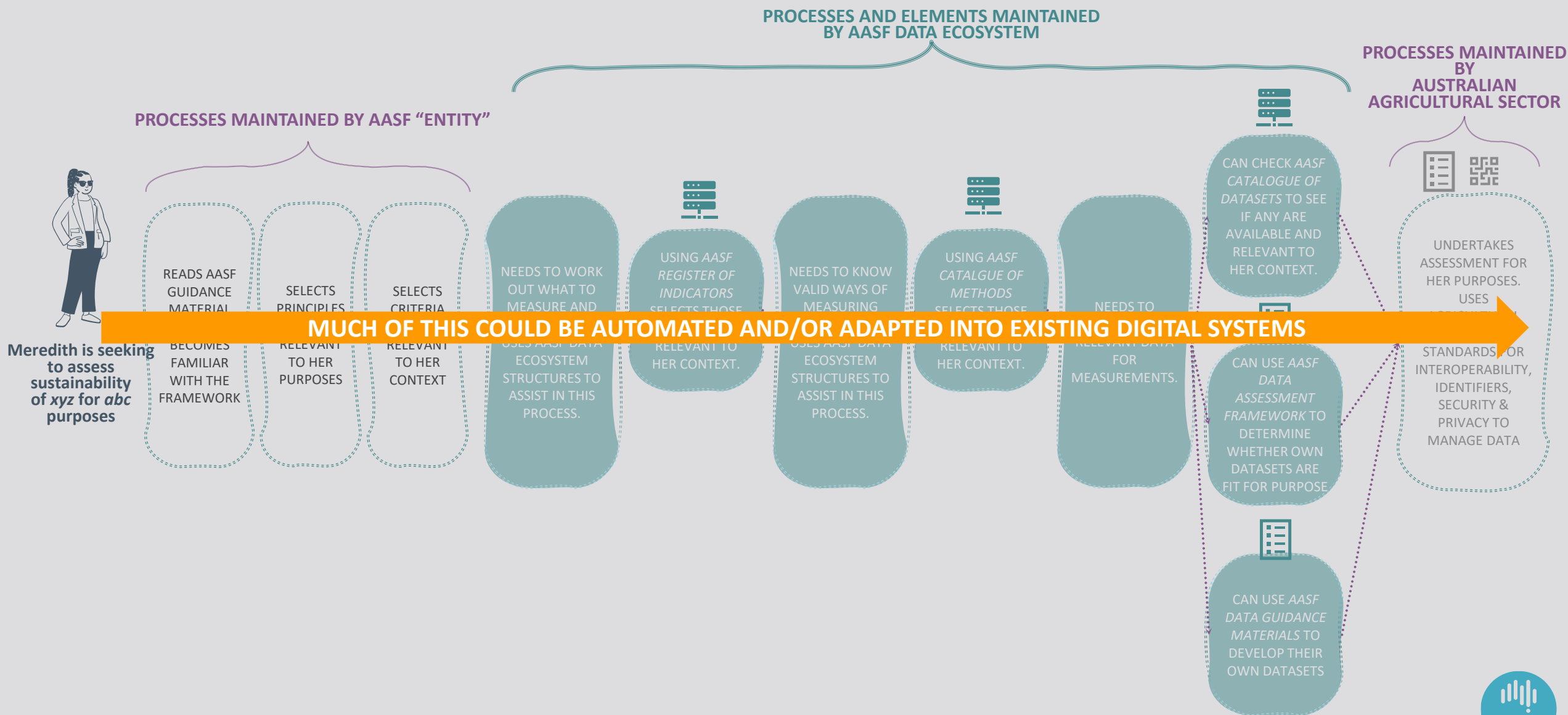
Future State – Structures

For the AASF Data Ecosystem to function effectively and meet stakeholder requirements, the following structures are required:



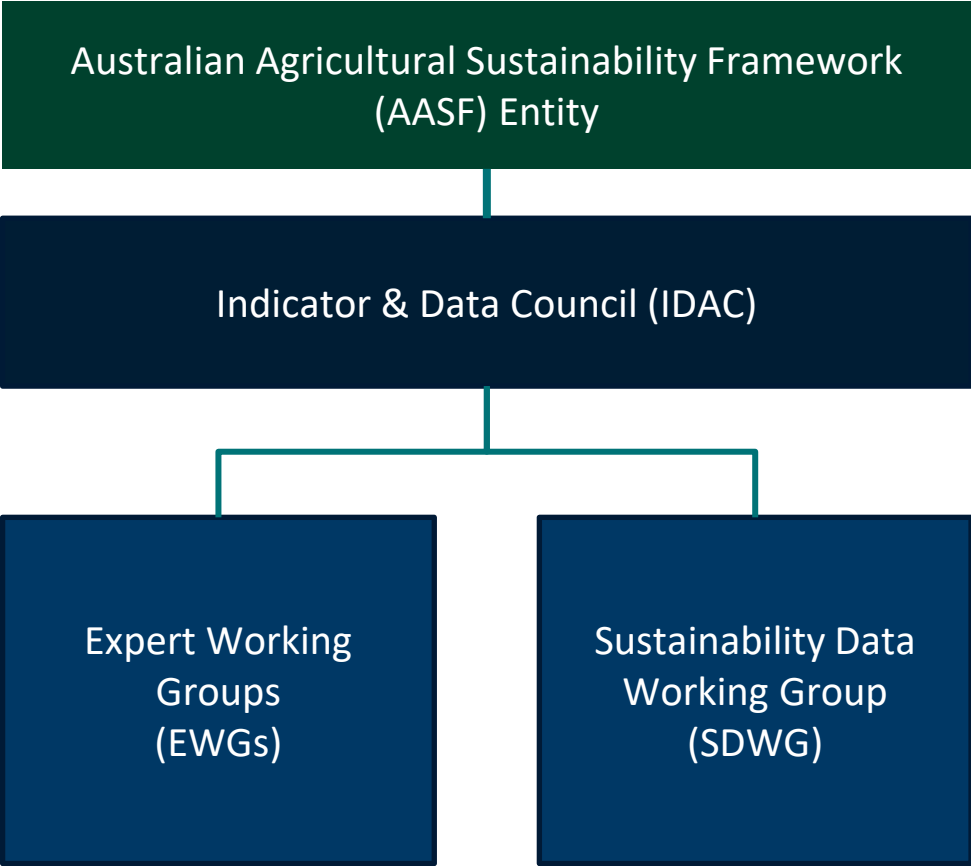
AASF Data Ecosystem – Example process which will be enabled for an Evidence Requestor

The workflow below gives an example of how a particular stakeholder (Evidence Requestor) might be enabled by the AASF Data Ecosystem to achieve their required goal.



Future State – Governance Mechanisms

It is proposed that a future AASF Entity establish an Indicator and Data Council (IDAC) to be responsible for decisions relating to the AASF Data Ecosystem. The IDAC will be responsible for AASF register of indicators, catalogues of methods and datasets, and have a role in appointing Expert Working Groups and a Sustainability Data Working Group for specific activities.



The Shift/Getting There

Over the coming years the AASF Data Ecosystem will need to shift
from supporting *practice-based data activities* to
enabling *impact-focussed data collection and use*.

By implementing new data ecosystem structures, stakeholders can
be assured that the future will see
sustainability become part of the culture across agriculture and ...



**... Primary Producers and
Processors**
*rewarded for their data
collection activities ...*









**... Data and Digital
Service Providers**
*effective in enabling the
ecosystem to thrive ...*



... Evidence Requestors
*confident they can access
evidence of Australia's
agricultural sustainability
practices ...*

AASF Data Ecosystem – Strategy

VISION	Ensure informed decision making, foster continuous improvement and create enduring benefit through a trusted, interoperable agricultural sustainability data ecosystem					
OBJECTIVES	Sustainability data is interoperable, used and re-usable		Sustainability data is reliable and trustworthy		Stakeholders are collaborating across the data value chain	
PRINCIPLES	Data for the AASF Data Ecosystem will be designed to ensure it is: <i>Secure & Private</i> <i>Usable & Value Additive</i>		Processes of the AASF Data Ecosystem will be designed to ensure they are: <i>Equitable</i> <i>Ethical</i> <i>Reducing the burden</i>		Governance of the AASF Data Ecosystem will be: <i>Trusted & Transparent</i> <i>Inclusive & Connected</i> <i>Agile & Responsive</i>	
STRUCTURES	 Register of Indicators	 Catalogue of Methods	 Catalogue of Datasets	 Data Guidance	 Forums	 Portal
GOVERNANCE	INDICATOR AND DATA ADVISORY COUNCIL (DAC)					
	EXPERT WORKING GROUPS (EWGs)					
	SUSTAINABILITY DATA WORKING GROUP (SDWG)					

AASF Data Ecosystem – Blueprint Horizons of Value & Funding

	The future vision for the AASF Data Ecosystem, will be achieved through three stages of development:		
	H1 ESTABLISH <i>(2025 - 2026)</i>	H2 GROW <i>(2027 - 2028)</i>	H3 MAINTAIN <i>(2029 +)</i>
VALUE ACHIEVED	<p>Evidence Requestors are starting to deliver AASF-aligned and consistent reporting with reliable and trusted data and methods have started to appear (by first-movers)</p> <p>Some major datasets are beginning to align with AASF Indicators</p> <p>Data and Digital Service providers engaged and investing in initial updates to tools (first movers)</p> <p>Language of agricultural sustainability is aligning across AASF stakeholders</p> <p>Community building confidence and trust in AASF Data Ecosystem structures</p>	<p>Sustainability benchmarks aligned with AASF start to become available</p> <p>New AASF aligned datasets start to appear</p> <p>Majority of farm management tools are aligning with AASF data standards</p> <p>Emerging industry using AASF-aligned indicators and tools</p> <p>Consistent sector-wide sustainability analysis and narratives appear</p> <p>Efficiencies in data collection and analysis start to emerge</p> <p>Start to see capability-uplift around sustainability data collection and use across cohorts</p>	<p>Sustainability is part of the culture within Australia’s agriculture sector</p> <p>AASF indicators and data are mainstreamed in farm management tools</p> <p>Sustainability evidence is available as and when needed across the agriculture sector and along individual supply chains</p> <p>All supply chain actors can benchmark themselves with respect to sustainability and can seek advice to take appropriate action if they need/want</p> <p>Capture of sustainability data is BAU and not seen as a chore</p> <p>Exchange and reuse of agricultural sustainability data is safe, secure, efficient and creating value</p>
FUNDS	<i>Program & Grants</i>	<i>Grants & Stakeholders</i>	<i>Self-Sustaining</i>



Phase 2a

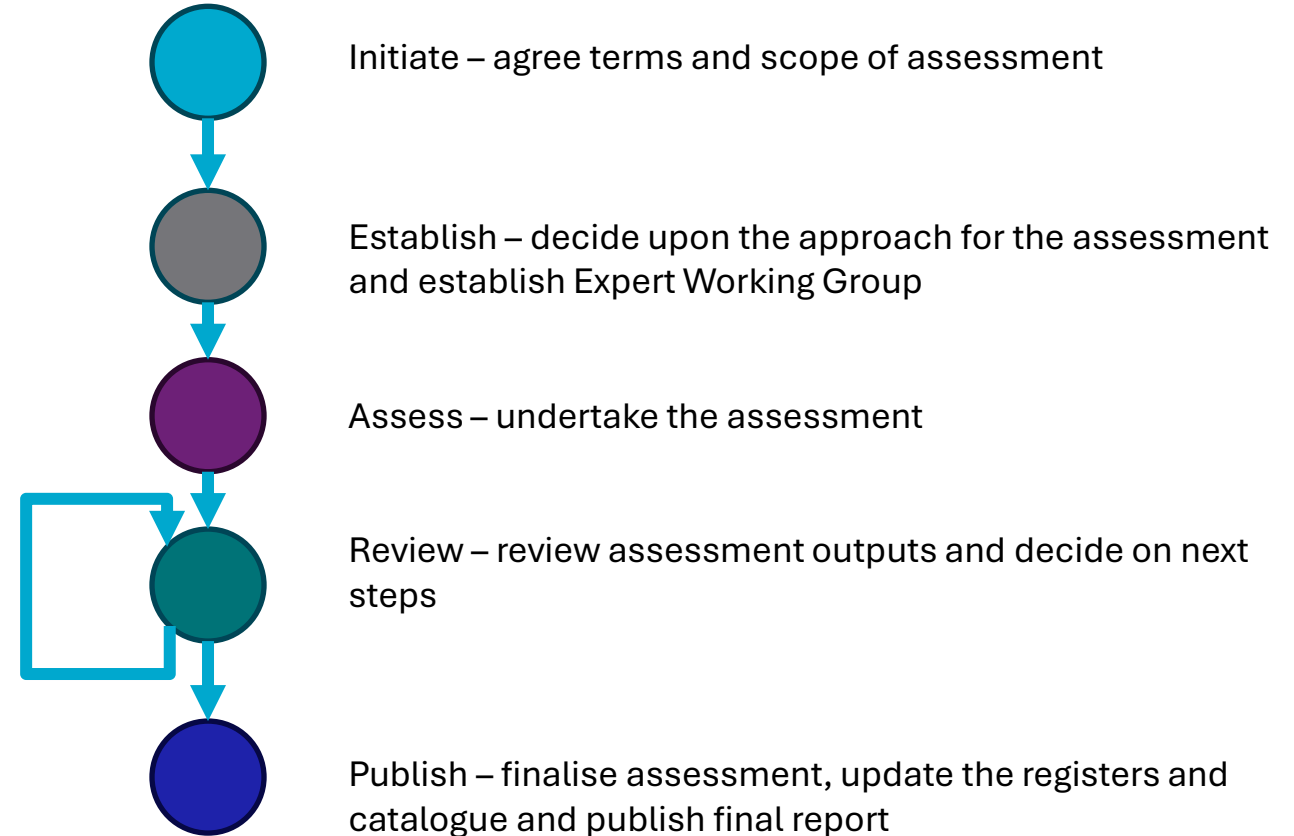
Testing (some of it)

Key things to test

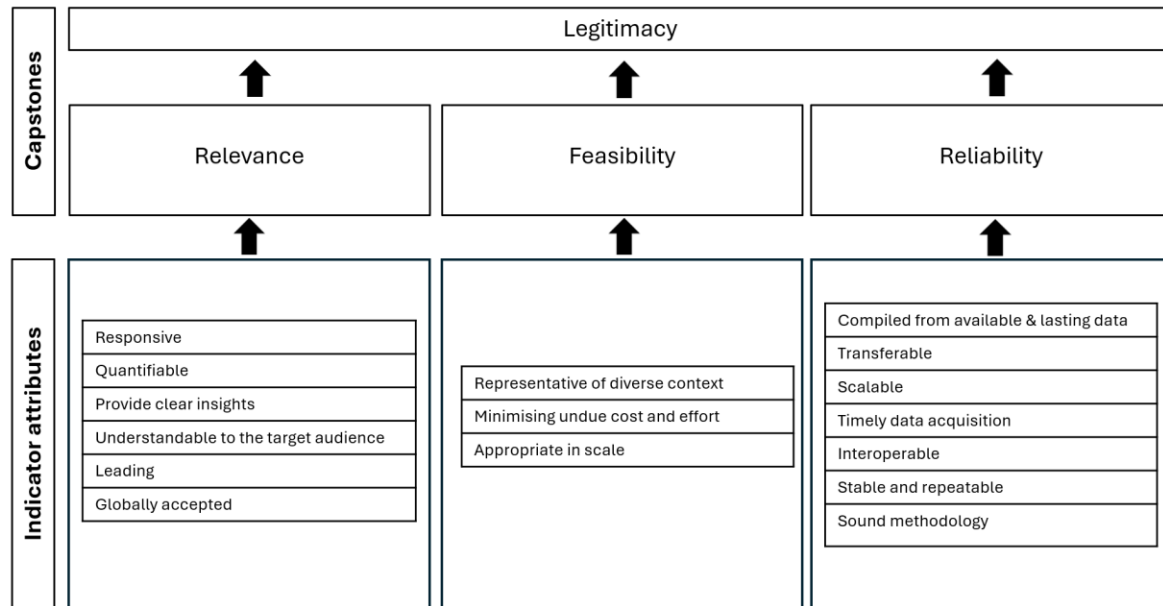
- **Indicator Assessment Process**
 - The workflow
 - A tool to support assessment
- **Governance Structures**
 - IDAC (Roles and Responsibilities, Accountabilities)
 - Expert Working Groups (Expectations, Different Types)

Indicator Assessment Workflow

- **Designed and tested a workflow**
- **Found**
 - **Multiple pathways (different types of expert working groups and approaches)**
 - **Needs to be guided by purpose and context**
 - **Needs to focus as much on metrics and methods as indicators**
 - **Public consultation a vital part of review to build trust**






Indicator Assessment Protocol

[illegible]

Governance - IDAC

- **Developed:**
 - **Terms of Reference**
 - **Meeting Agenda and Report templates**
- **Found:**
 - **Change of name required**
 - **Must have delegated authority from AASF Entity to manage Registers**
 - **Must have diversity of knowledge, skills and experience**
 - **Needs to be adequately resourced and supported**
 - **Decisions must focus on “Reducing the Burden” and “Trust and Transparency”**



AASF Data Ecosystem -
Moot Indicator and Data Advisory Council

Meeting #7

mIDAC Secretariat Report – For Noting

Task: Note details on EWG appointments and progress and SDWG activities update

1. Expert Working Groups (EWGs) Update




The EWGs are progressing through various stages of development and engagement as described in the table below.

EWG	Principle & Criteria Focus	Status
P1/C3	Soil Health	Contracting underway
P2/C5	Biodiversity	Appointed and onboarding
P3/C2	Water Use Efficiency	Exploratory discussions
P4/C1	Emissions Reduction	Formulating recommendations
P5/C4	Animal Welfare	Public consultation open
P6/C6	Chemical Use	Reviewing public consultation feedback
P7/C7	Social Responsibility	Completed and published

The Secretariat continues to support EWG coordination, ensuring alignment with their ToBs and timely progression through each phase.

2. Sustainability Data Working Group (SDWG) Update

The SDWG is actively engaged in a range of activities aligned with its Terms of Reference, with a focus on enabling a robust and interoperable AASF Data Ecosystem within the broader context of data ecosystem activities for agriculture and sustainability. Key areas of activity include:



AASF Data Ecosystem -
Moot Indicator and Data Advisory Council

Meeting #7

9:45am – 11:15am, Wednesday 20 August 2025

CSIRO Eveleigh, Level 5, 13 Garden Street, South Eveleigh NSW 1515

Agenda

1.0 Welcome & Introductions

2.0 Previous Meeting

2.1 Acceptance of Minutes of Previous Meeting

2.2 Actions Arising

3.0 Main Business

3.1 CEO Report

- AASF Entity Updates – for noting

3.2 Secretariat Report

- EWG appointments and progress – for noting

- SDWG activities – for noting

3.3 Report from P1/C1 Expert Working Group

- IDAC to review recommendations – for decision

3.4 Initiation of P17/C41-43 Review

- Discuss proposal to initiate this review – for decision

3.5 IDAC Task List

- National dataset reviews – for discussion




- Guidance Materials – for decision

4.0 Other Business

4.1 Planning for 2026-2030 Strategy

4.2 Upcoming Forums

5.0 Close



Moot AASF Indicator and
Data Advisory Council
(mIDAC)

Terms of Reference

May 2025

Note – the Moot IDAC is exploratory in nature only. Its purpose is to determine the appropriate governance mechanisms and process that will be required for an appropriately constituted IDAC in the future. The Terms of Reference contained herein are provided for the purposes of the Moot IDAC. A specific set of Terms of Reference will be developed for the official IDAC as part of the Moot IDAC processes.

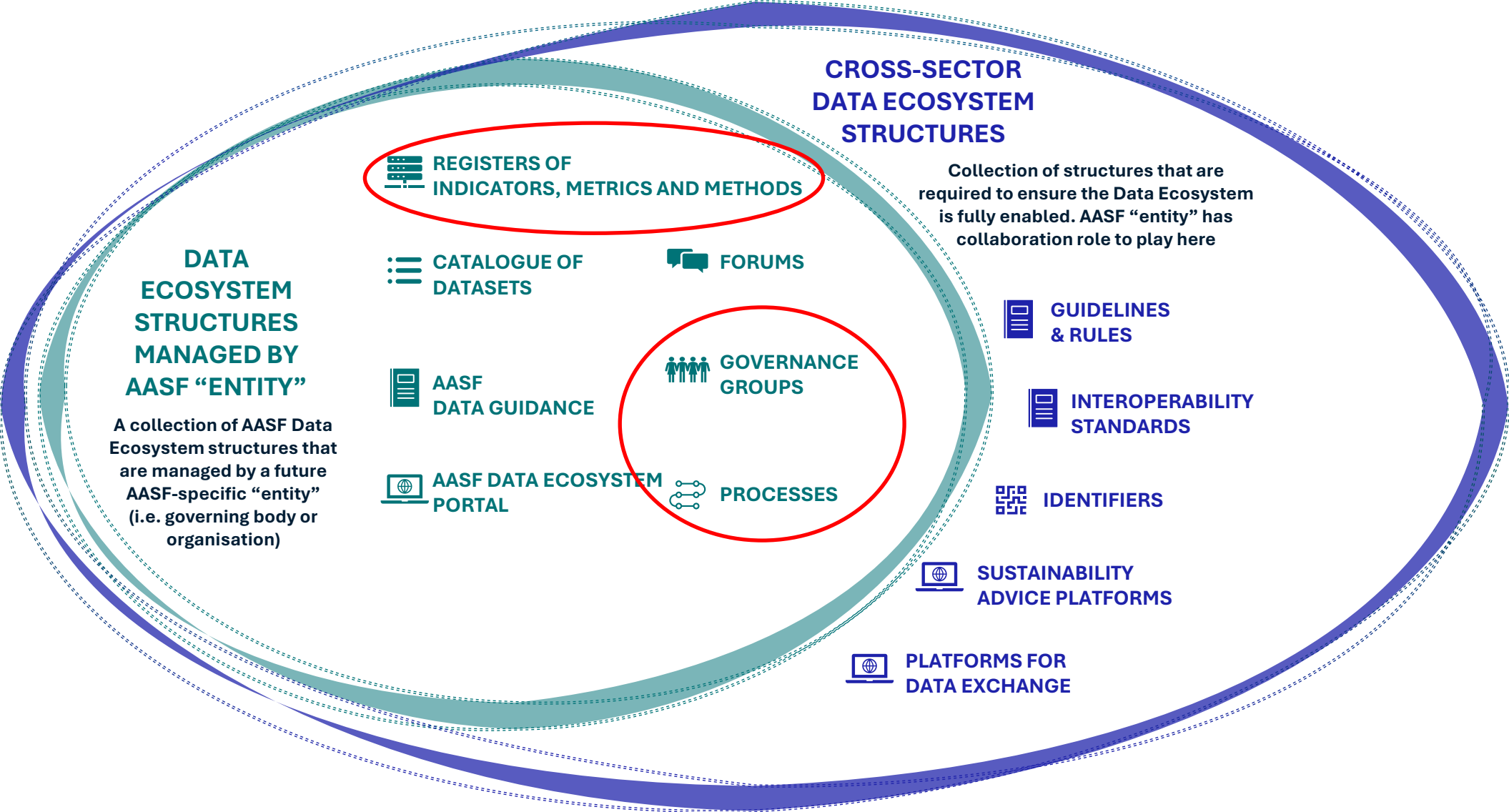


Governance – Expert Working Groups

- **Activities:**
 - **Test the IAP tool on a set of predefined indicators**
- **Found:**
 - **Must be provided Purpose and Context**
 - **IAP focusses on the right issues when considering an indicator**
 - **Tool is cumbersome**

Future State – Structures

For the AASF Data Ecosystem to function effectively and meet stakeholder requirements, the following structures are required:



AASF Data Ecosystem – From Anarchy to Order

CURRENT STATE

Data Fiefdoms & Anarchic Processes

Inefficiencies & gaps in data supply

Lack of confidence to invest

Competing requests and minimal RoI

Multiple descriptions and stories about aspects of Australian agricultural sustainability practices

Individual stakeholders left to themselves to decide:

- *What data to collect*
- *What data to ask for*
- *How to use the data*
- *Which standards to apply*
- *Who to provide the data to*

FUTURE STATE

Coordinated & Interoperable Data Activities

Comprehensive data availability

Clear strategies and ability to plan for changes

Lines of sight across the data value chain and RoI to all involved

Consistent language and narratives to describe Australian agricultural sustainability practices

Collective agreement(s) on:

- *What data to collect, and how*
- *What data can be asked for*
 - *How data can be used*
- *Which standards can be applied*
- *How data owners can control the provision and re-use of their data*





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For further information

Environment Research Unit:

Dr Laura Kostanski

+61 425 711 094

Laura.Kostanski@csiro.au

Dr David Lemon

+61 417 880 758

David.Lemon@csiro.au

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