

Final report

Australian Agrifood Data Exchange Phase 2: Experiment 3 – Benchmarking

Project code:

Prepared by:

V.ISC.2138 Wesley Lawrence AxisTech Pty Ltd

Date published:

30 April 2022

PUBLISHED BY Meat & Livestock Australia Limited PO Box 1961 NORTH SYDNEY NSW 2059

Meat & Livestock Australia acknowledges the matching funds provided by the Australian Government to support the research and development detailed in this publication.

This publication is published by Meat & Livestock Australia Limited ABN 39 081 678 364 (MLA). Care is taken to ensure the accuracy of the information contained in this publication. However MLA cannot accept responsibility for the accuracy or completeness of the information or opinions contained in the publication. You should make your own enquiries before making decisions concerning your interests. Reproduction in whole or in part of this publication is prohibited without prior written consent of MLA.

Abstract

The Australian AgriFood Data Exchange (AAFDX) project seeks to define and articulate the business case for investment in an industry designed and overseen data exchange with a vision to create "An interconnected data highway for Australia's AgriFood value chain". The purpose of the AAFDX is to provide a centralised mechanism for the exchange of data between participants in the agrifood value chain.

Milestone 6 is the culmination of a series of experiments (4) that were conducted to explore various applications and different methods of data exchange to deliver working prototypes to assist with informing the future business case. The experiments were delivered by four technology solution providers selected from an open market RFI process.

The experiments were delivered by each of the four technology solution providers in collaboration with industry, government, and research representatives. Each experiment focussed on a specific use case.

This report deals with Experiment 3 – voluntary benchmarking for comparisons and decisions for grains producers in Western Australia delivered by AxisTech.

AxisTech was appointed as the Vendor for the Grains Benchmarking Experiment for The Australian Agrifood Data Exchange Project and facilitated this experiment using our AxisStream Data Management platform.

AxisStream is a data platform designed for the entire Agrifood supply chain. It facilitates value from data without comprising owner control. Through its data engineering capabilities, AxisStream facilitates the transformation, ingestion and standardisation or any and all data. Through its data science capability, it is able to create visualisations, analysis, machine processing and machine learning within individual businesses and at whole of supply chain level.

For the Grains Benchmarking experiment,

The key results of this experiment include the ability for growers to:

- collaborate in a voluntary data driven benchmarking exercise
- retain ownership and control of their data whilst participating in this benchmarking exercise
- conduct their own on farm analysis
- gain insights and analysis from aggregated benchmarked data

This experiment has also demonstrated a number of benefits to industry by

- creating capability for an increased size and breadth of participants
- facilitating multiple season and in-season analysis points
- delivering more timely and responsive decision-making capability for individual businesses, supply chain managers, government and industry.

The outcomes of the Grains Benchmarking experiment demonstrated by AxisTech showed applicability of this solution and platform across industries and throughout the value chain.

Table of contents

Abstract		. 2
1.	Milestone description	4
2.	Project objectives	4
3.	Methodology	5
4.	Results (to-date)	5
5.	Success in meeting the milestone	5
6.	Overall progress of the project	. 5
7.	Conclusions/recommendations	6

1. Milestone description

In September 2021, KPMG issued a request for participation from technology providers in the Australian Agrifood Data Exchange in relation to four experiments:

- 1. Centralised data for compliance and certification
- 2. Biosecurity and contamination information
- 3. Voluntary benchmarking for comparisons and decisions
- 4. Compliance and traceability

AxisTech submitted a response to participate in this project and the applications were highly competitive, with some well-known and highly regarded companies engaging in the submission process. AxisTech was excited to be selected as the Vendor for the Benchmarking Experiment which sought to identify gaps and opportunities for improved performance within the WA grains sector.

AxisTech is an Australian agrifood tech solution provider with a focus on whole-of-business data and device solutions. We have a strong track record of innovative, user-orientated technology developments.

We have a strong multi-skilled team across electronics, software development, data engineering, data science, research, marketing, business development, finance and management. We have a growing list of clients, projects and collaborators that extend across state government, universities, Research and Development Corporations, grower groups, individual family farms and corporate farming operations.

AxisTech is playing its part in digitising the agrifood industry.

The Grains Benchmarking experiment is aimed at addressing challenges that currently exist around individualised benchmarking analysis at a paddock or farm level based on specific conditions such as rainfall bands, soil type variance, commodity and variety.

This project utilised grower provided data to generate one or multiple benchmarks and then provided that benchmark data set back to growers for internal comparison and analysis. These reports were designed to provide growers with personalised and contextualised point of analysis to improve outcomes around yield and water or nutrient use efficiency.

2. Project objectives

The Grains Benchmarking Experiment achieved the following objectives:

- Undertake a voluntary data exchange experiment with growers from within the WA grain industry.
- Conduct benchmarking exercises with those growers
- Provide meaningful information back to growers
- Undertake the entire experiment with good data governance principles

3. Methodology

The activities conducted for the Grains Benchmarking experiment included:

- 1. Grower Recruitment
- 2. Data mapping
- 3. Onboard growers into their own data store within the AxisStream platform
- 4. Set up benchmarking data store within the AxisStream platform
- 5. Transact data using grower controlled granular permissioning methodology
- 6. Conduct aggregation deidentification and benchmarking across all grower data
- 7. Compile benchmark data set back to growers.
- 8. Provide visualisation to grower data store with analysis

4. Results (to-date)

Some of the key findings for the experiment include:

- Importance of Grower recruitment and engagement considerations
- Sound data governance that reinforces data ownership and control for growers is crucial
- Data driven analysis and benchmarking opens up new possibilities in terms of size, scale, timeliness and frequency
- Returns on investment for growers are multiple including cost and time savings, and potential productivity gains

5. Success in meeting the milestone

The Grains Benchmarking Experiment has been oriented around an opportunity for grain growers in WA to collaborate in a voluntary data driven benchmarking exercise. Participating in this opportunity requires an initial process of digitisation, data orientation and data aggregation within a platform that aligns with the FAIR data principles.

For the grower, a number of on-farm, quantifiable data driven benefits were identified including cost and time savings, and potential productivity gains.

This experiment has also demonstrated benefits to industry though capability for an increased size and breadth of participants, facilitating multiple season and in-season analysis points, delivering more timely and responsive decision-making capability for individual businesses, supply chain managers, government and industry.

6. Overall progress of the project

The project is progressing as planned.

7. Conclusions/recommendations

Through the process of this experiment, a number of key learnings and recommendations have become evident, or their importance has been reinforced including:

- Grower engagement considerations
- Data Governance
- Industry collaboration and exchange design