



# The National Agricultural Statistics Review: Collaborative partnerships supporting the Australian agricultural statistical system

Authors: Jacky Hodges and Nicole Lehmann

Australian Bureau of Statistics, Environment and Agriculture Branch

ABS House, 45 Benjamin Way, Belconnen, ACT 2616

Canberra, Australia

Contact email: [jacky.hodges@abs.gov.au](mailto:jacky.hodges@abs.gov.au), [nicole.lehmann@abs.gov.au](mailto:nicole.lehmann@abs.gov.au)

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## ABSTRACT

Australia's agriculture, fisheries and forestry industries make an important contribution to Australia's economy, society and natural resources. The productivity, competitiveness, sustainability and profitability of these industries are enhanced by having access to timely, high-quality and reliable statistics to inform decision-making by both government and industry. Similarly, at the micro level, individual businesses use statistics to inform their management and investment decisions. Over time the Australian agricultural statistical system has evolved to support the information needs of decision-makers across government, industry and the broader community.

However, there has been criticism that the current Australian agricultural statistical system is deficient in providing quality, timely data to meet these needs. Like all national statistical offices, the Australian Bureau of Statistics (ABS) faces the ongoing challenge of meeting diverse user needs in an environment of fiscal constraint. In this context, it is essential that the datasets produced within Australia's agricultural statistical system are targeted at the highest priority needs and are produced, disseminated and used in the most effective and efficient way.

The ABS and the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) are the principal producers of agricultural statistics in Australia. The two organisations initiated the National Agricultural Statistics Review (NASR) to hear directly from statistical users and producers across government, industry and the research sector about these issues, and to identify potential solutions. The NASR provided valuable stakeholder insights, and has identified a pathway to establish a contemporary, best practice Australian agricultural statistical system for the future. The NASR has enhanced the relationship between the two agencies and paved the way for further collaboration to provide stronger and more effective leadership across the system. Additional opportunities for partnerships have also been identified with other statistical users and producers to better coordinate effort and investment, and to work collaboratively to improve data quality and reduce respondent burden.

This paper will briefly examine the context through which the NASR was initiated and its links to national policy in Australia. The paper will briefly explore the NASR process and the positive impacts of collaboration and partnership with a wide variety of stakeholders from across the agricultural sector. As the NASR has progressed into its implementation phase, the final section of the paper will outline progress against actions recommended during the review, and the additional outcomes and opportunities that have emerged as a result of continued engagement across the agricultural statistical system.

**Keywords:** statistical system; policy; collaboration.

## 1. Background

1.1 The two predominant producers of agricultural statistics in Australia are the Australian Bureau of Statistics (ABS), and the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES). ABARES, a science and economics research bureau located within the Australian Government Department of Agriculture and Water Resources (DAWR), collects, analyses and disseminates a range of agricultural information to support government policy development and industry bodies across the agricultural industry. As Australia's National Statistical Organisation (NSO), the ABS has traditionally produced a range of data on the production and value of agricultural commodities and on the land management practices used by farmers, to inform information needs and support policy, programs and decision-making processes across the agricultural sector. The ABS also produces a range of natural resource and energy statistics, including environmental-economic accounts.

1.2 Outside of ABS and ABARES, agricultural statistics and information are also produced by a range of other organisations including other Australian Government and state/territory agencies, industry bodies, and academic research institutions. These statistics include not only data directly collected via surveys, but also administrative datasets collected as a by-product of other processes – for example data collected under the Government's legislated agricultural levies system, and data collected through trade records and biosecurity databases.

1.3 The evolution of Australian agriculture in the past few decades has been accompanied by increasing concerns regarding land and natural resource use and growing interest in the sustainability of agricultural production. This has amplified the pressure on the national agricultural statistical system to meet a range of emerging information needs whilst at the same time responding to demand for more accurate, timely and detailed data from industry stakeholders. A report by the Australian Farm Institute in early 2013 identified a range of concerns with the availability and quality of Australian agricultural statistics, including those produced by ABS and ABARES (Potard, 2013). A number of these concerns had also been reflected through stakeholder consultation conducted by ABS and ABARES as part of their respective stakeholder engagement programs. Stemming from these criticisms both agencies recognised an opportunity to collaboratively review the agricultural statistical system and jointly act to address emerging challenges.

1.4 In July 2013 the National Agricultural Statistics Review (NASR) was initiated as the first review of Australia's agricultural statistics system which was jointly undertaken by ABS and ABARES. The Review considered all aspects of the national agricultural statistical system, assessed its ability to inform decision-making and identified opportunities to improve the system both now and into the future.

## 2. Undertaking the National Agricultural Statistics Review

2.1 The purpose of the review was to assess the agricultural statistical system in Australia and its adequacy for informing decision-making in the agriculture, fisheries and forestry industries both now and into the future. The review aimed to identify:

- the priority information needs of stakeholders;
- where information needs are not being met by existing sources of data;
- overlaps and inconsistencies in data; and
- opportunities to improve efficiency in the national agricultural statistical information system.

2.2 For the purposes of the review, ‘agricultural statistics’ was broadly taken to mean the data, information, statistics or other knowledge that could be used to provide insights into agricultural activity (which for the purposes of the review, included fisheries and forestry activity) (ABS, 2014). The agricultural statistical system was considered to consist of:

- agricultural statistical assets;
- the statistical infrastructure underpinning these assets – including standards, frameworks and classifications; physical systems; and coordination and governance frameworks; and
- stakeholders – including users, producers, custodians and providers of agricultural statistical assets and information.

2.3 The NASR was undertaken in two phases over 2013 and 2014, and featured extensive stakeholder engagement in recognition of the critical importance of stakeholder contributions in identifying potential issues with the agricultural statistical system and ways to address them. These stakeholders included not only government agencies (at both the Australian Government and state/territory government levels) but also industry bodies, farmer representative organisations, academic and research institutions, and the broader community. In total across the two phases of the review’s consultation, 43 organisations participated in a series of targeted forums, and 42 formal submissions were received throughout the consultation process.

## 3. NASR final report

3.1 The NASR Final Report summarised the review’s findings as regards to the current state of the agricultural statistical system and its capacity to inform stakeholder needs both now and into the future.

3.2 Findings from the review indicated that generally the Australian agricultural statistical system is effective in informing government and stakeholder information needs. Stakeholders reported that about two-thirds of the statistical assets they use mostly met their needs (ABS, 2015:39). Throughout the consultation phase of NASR, stakeholders indicated that the majority of the statistics they used were generated by national or state or territory government agencies, and that the agricultural statistics were a valuable asset.

3.3 However, a number of deficiencies and stakeholder concerns were identified throughout the review, that if addressed would improve the capacity of the system to more efficiently meet current and emerging needs. These deficiencies were identified through an assessment of the Australian agricultural statistical system against a set of best practice principles that characterised well-performing statistical systems internationally. These deficiencies were found to be driven by a set of systemic issues, namely:

- A lack of strong governance and coordination across the statistical system to effectively coordinate the contributions of stakeholders and ensure a planned and coordinated approach to statistical production;
- The agricultural statistical system has evolved in a somewhat reactive manner, without a central plan or strategy to guide investment, leading to potential duplication and inefficiency;
- An over-reliance on surveys and an under-utilisation of alternative data sources such as administrative sources, leading to areas of high respondent burden, potential data quality issues and higher costs;
- Under-utilised opportunities to harness innovative new technologies (e.g. ‘big data’) and statistical methods to produce statistics more efficiently and with reduced burden; and
- The need for a culture of open data to make the best use of existing sources.

3.4 The Report recommended a number of actions to address these systemic issues and stakeholder concerns identified through the review, and to position the Australian agricultural statistical system to better align with international best practice. These recommendations included:

- The establishment of mechanisms to improve coordination and governance across the statistical system, including targeted and purposeful engagement to consult, provide direction, and encourage better coordination of government statistical collection activities; and an annual calendar of statistical activities to improve transparency and encourage coordination of statistical activity;
- The establishment of a Foundation Dataset that applies existing frameworks to organise and present data from multiple sources that will assist to identify the highest priority information needs across the entire statistical system to better target investment and plan future statistical activity;
- Encouraging stakeholders to explore alternative data sources to surveys, including through establishing an Administrative Data Initiative to explore greater use of administrative data across the statistical system;
- Adopting new and emerging technologies in statistical use and production, including making greater use of internet-based surveys, and encouraging more coordinated approach to invest in innovative new technologies and methods throughout the statistical cycle that will reduce burden and improve data quality; and
- Establishment of a one-stop portal for agricultural statistics to maximise the value of existing data sources and encourage a culture of open data.

## 4. NASR progress to date

4.1 The NASR recommendations articulated a pathway for ensuring the Australian agricultural statistical system continues to meet information needs in the most efficient and effective way possible. In addition, the collaborative approach taken to the review by ABS and ABARES, and the goodwill and relationships built through the review’s extensive engagement process have generated additional benefits. These include stronger relationships between ABS and DAWR/ABARES; and stronger relationships between ABS, ABARES and other stakeholders in the agricultural statistical system. At the same time, the NASR has generated expectations amongst statistical users, and these need to be carefully managed within the context of available resources.

4.2 The NASR report recommendations were aspirational in nature, however, and while warmly accepted in principle by the two agencies, their implementation has required some pragmatism and prioritisation. Some of these have been addressed through natural program developments, for example the adoption of an ‘e-form first’ strategy for the 2016 Agricultural Census. Since the release of the final NASR Report in mid-2015, while continuing to explore opportunities across all the recommendations, ABS and ABARES have focused their collaborative efforts on a number of priority actions including the implementation of structured, purposeful engagement processes for the purposes of greater coordination and governance; the concept of a foundation data framework; and exploration of potential high-value administrative sources.

**4.3 Coordination and governance:** As noted above, findings from NASR demonstrated a clear gap in effective governance and coordination of the national agricultural statistical system. Stakeholders clearly identified throughout the NASR engagement process the high value they placed on opportunities to be continually engaged with ABS, ABARES and other representatives from across the agricultural industry to discuss a range of statistical issues and opportunities. As stakeholders endorsed the statistical leadership of ABS and ABARES within the system, both agencies are maintaining a high level of engagement across industry groups and related stakeholders, such as government organisations with responsibility for natural resource management. To make the most effective use of time and resource, and ensure the engagement processes are focussed on specific actions or issues, ABS and ABARES will convene regular summits and other events targeted at specific audiences and topics.

4.4 An example of this coordination and governance role is the recent Agricultural Statistics Roundtable, convened with stakeholders from industry Research and Development Corporations (RDCs) and government agencies, jointly led by ABS and ABARES. The focus of the Roundtable was to explore alternative data sources and technologies that could be utilised to increase the quality and accessibility of data, and ultimately begin to reduce survey burden on farmers. Many industry groups within Australia, including RDCs, are custodians of large amounts of data, either through statistical collections or by-products of other activities. Discussion during the Roundtable highlighted the work already being undertaken by industry groups leading collaborative projects to generate and utilise existing datasets. The focus of these industry led projects align with themes contained in the Enduring Goals for Australian Agriculture framework, focussing on areas such as agricultural supply-chain efficiencies, management of natural resources, and sustainability of farming practices.

4.5 As well as providing valuable information sharing opportunity for attendees, at the conclusion of the roundtable ABS identified six key actions where the organisational statistical leadership role could be employed most effectively to support or deliver outcomes to enhance existing data sources. These actions are currently being developed by ABS and ABARES, but broadly include:

- Supporting industry collaboration to develop and implement common data standards and data sharing protocols to improve quality and accessibility of existing data sources;
- Exploring the potential of farm management systems, satellite technology and precision agriculture to contribute to official statistics;
- Engaging in viable pilot projects with industry to use administrative data to replace survey content;
- Demonstrating the value of environmental economic accounting as a framework for information relating to sustainable agriculture;
- Establishing a collaborative project with ABARES to extract statistical value from the agricultural levy process; and
- Exploring potential to combine and consolidate surveys across industry and government.



**4.6 Foundation data frameworks:** The NASR recommended a Foundation Dataset for Australian Agriculture be established to inform the Enduring Goals for Australian Agriculture, address data gaps and better target future investment across the national agricultural statistical system. This recommendation recognised the utility of agreed information frameworks to help focus and prioritise the collection and dissemination of agricultural statistics, and ensure a direct relationship to policy requirements.

4.7 To assist in focussing the Foundation Dataset concept as a foundation data framework for agriculture, the ABS is applying the System of Environmental-Economic Accounting, including the sub-system for Agriculture, Forestry and Fisheries (SEEA-AFF) to the Enduring Goals for Agriculture. This enables analysis of the relationships and linkages between the Enduring Goals that provide the core elements of the foundation data framework. In this way the SEEA and the Enduring Goals can be used together to produce meaningful indicators to meet a range of industry and policy needs.,

4.8 The SEEA-AFF has potential to inform a range of policy issues relating to agriculture and the environment, including:

- understanding trends in natural resource use by activity, such as agriculture or forestry;
- addressing information gaps relating to sustainability risk for investors;
- understanding the competing demands for resource use from different activities, for example use of land and water;
- exploring the potential productivity benefits arising from improved farm management practices in specific regions or commodities; and
- understanding the potential economic and environmental impacts of climate events and bio-security risks on particular industries or products.

**4.9 Agricultural administrative data initiative:** The NASR proposed an Administrative Data Initiative to develop methods for broader use of administrative data sources within the agricultural statistical system. This initiative will include examining legislative, privacy and commercial barriers to the use of data collected by governments and industry with the objective of reducing survey burden on farmers, and implementing a “collect once, use many times” approach. Two potential areas of action have been identified by ABS and ABARES to progress this initiative:

- Utilisation of levy data: Following the release of the report of the Senate Committee inquiry into the agricultural levies system in mid-2015, ABS and ABARES have been working together to advocate for the statistical value of levy data to be recognised in any legislative change. As a consequence an amendment to the Primary Industry Levies and Charges Collection Act was introduced to Parliament in 2016 which enabled not only RDCs, but also ABS, to access levy data for statistical purposes. If this amendment is enacted, it poses an important opportunity for ABS, ABARES and RDCs to work collaboratively together to harness the statistical value in this important data source and explore the potential for it to supplement or replace survey collection, thereby reducing burden.
- Microdata and Data Integration: ABS has an increasing focus on enabling access to microdata (unit record data) and on data integration projects while maintaining privacy safeguards. The Business Longitudinal Analytical Data Environment (BLADE), held by the ABS, is an important example of a data integration methodology ABS has developed to enable greater access to business data for statistical purposes. BLADE enables integration of ABS business survey data with administrative data sources, such as tax information, using the ABS Business Register as the integrating spine. BLADE is designed to support analysis of the micro economic drivers of business performance, competition and productivity and provide innovative

responsive solutions to client data needs. Already ABS and ABARES are discussing how this might support ABARES analyses of the sector.

## 5. Next steps for a whole of sector approach

5.1 As a result of the NASR consultative process, NASR outcomes and ongoing work between ABS and ABARES, both agencies continue to be well-positioned to exercise joint statistical leadership across the Australian agricultural statistical system, marshalling support from and coordinating activity with a range of other stakeholders in both government and industry.

5.2 However to ensure that policy directions for Australian agriculture are maintained and supported long term through the provision of relevant statistical information, and to fully address the systemic issues identified through NASR, an increasingly whole-of-government approach will be needed. The combined demand for agricultural commodity data, as well as complementary information on environment, land and natural resource management, will lead to increasing pressure on the national agricultural statistical system to ensure statistics are collected and disseminated as efficiently and effectively as possible to continue to support evidence based decision making. The recent Roundtable was a step in this direction, where opportunities for collaboration were identified and currently being implemented into the ABS work program.

5.3 There are challenges in responding to the directions established through the NASR, however. Reducing dependence on surveys and transitioning to new data sources while maintaining key time series and the credibility of official statistics will require creating of new methodologies and statistical infrastructure. The increasing diversity of information needs and potential sources will also stretch the capacity and resources of the current statistical system.

5.4 To meet these challenges, further leveraging the collaborative relationships built with stakeholders across government, industry and the wider community will be critical. NASR has provided a model for a partnership approach to developing strategic, system-wide solutions to existing and emerging agricultural, land and other environmental policies. However, it is not feasible, or desirable, that the ABS as Australia's NSO lead or deliver in its entirety the leadership and statistical data required in achieving this goal.

5.5 In an environment of fiscal responsibility, ABS is best placed to focus its capabilities on producing and disseminating critical data to support the highest-priority information needs, and on its statistical leadership role. This role includes coordinating the efforts of other users and producers of statistics, finding ways to unlock the value of administrative and other data sources for public good, developing and promoting standards and quality requirements, and providing the supporting capabilities for complex statistical products such as data integration.

## 6. Conclusion

6.1 Maintaining Australia's natural wealth, including the land on which agriculture occurs, is an ongoing challenge for government and industry both now and into the future. Meeting this challenge requires increasingly more complex information, which is putting pressure on the national agricultural statistical system and leading to concerns at the capacity of the system to meet these demands. In this context ABS and ABARES took the opportunity to jointly undertake the NASR and identify and address these concerns.

6.2 While the challenges remain, the NASR has laid the foundation for joint coordination and statistical leadership across the national agricultural statistical system, with all stakeholders having a part to play. In this context and in collaboration with ABARES, the ABS, as Australia's NSO, will look to re-align

and renew its role of statistical leadership, coordination and integration of high priority statistical information. As this occurs, other stakeholders will need to assume greater responsibility for the collection of relevant and valued statistical data to ensure the Australian national agricultural statistics system remains agile and policy relevant.

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