Insight

11 Economics

Rohan Nelson

1 STATE OF ECONOMICS

52x larger
The economy-wide workforce that Australian agriculture supports in comparison to its own

–50%
Employment in agriculture halved over the last century

>$800 billion
Gross value of Australia's food system (2022–23)

$100 billion

target for the gross value of agricultural production

2 CHALLENGES

- **Production versus Economic development** production focus prevents celebrating agriculture's support of Australia's economic development
- **Sustainability, health and equity** progress obscured by the gross value of agricultural production
- **War and famine** partly responsible for increases in the gross value of agricultural production
- **R&D funding** Favours production over sustainability, health and equity goals

3 OPPORTUNITIES

- **Economic development** the food system is more than agricultural production and exports
- **$800 billion** we can value the whole food system
- **Net values** provide greater insights into sustainability than gross measures
- **Balance** R&D funding for production vs sustainability, health and equity goals

KEY POINTS

- Australia's commercial food system generated over $800 billion of income in 2022–23 and is growing rapidly.
- Australia's food system employs 3.5 million people and supports an economy with a workforce four times larger than its own.
- Within the food system, Australian agriculture employs a workforce 50 times larger than its own.
- A focus on the gross value of agricultural production is limiting our ability to celebrate the economic success of Australia's food system and our ability to meet a broader set of food system goals.

11.1 The value of Australia's food system

The gross value of Australia's food system was more than $800 billion in 2022–23, which was an increase of 10.8% from the previous year (Figure 15). This is more than eight times larger than the goal of $100 billion set for the gross value of agricultural production (GVP) for 2030. It may understate the gross value of the food system because data for industries such as transport, postal and warehousing are not yet published in sufficient detail to identify their food-related components. Across the food industries that are reported, the fastest rates of growth reflected post-COVID-19 recovery in food and beverages services, offset by lower

GROSS VALUE OF FOOD SYSTEM

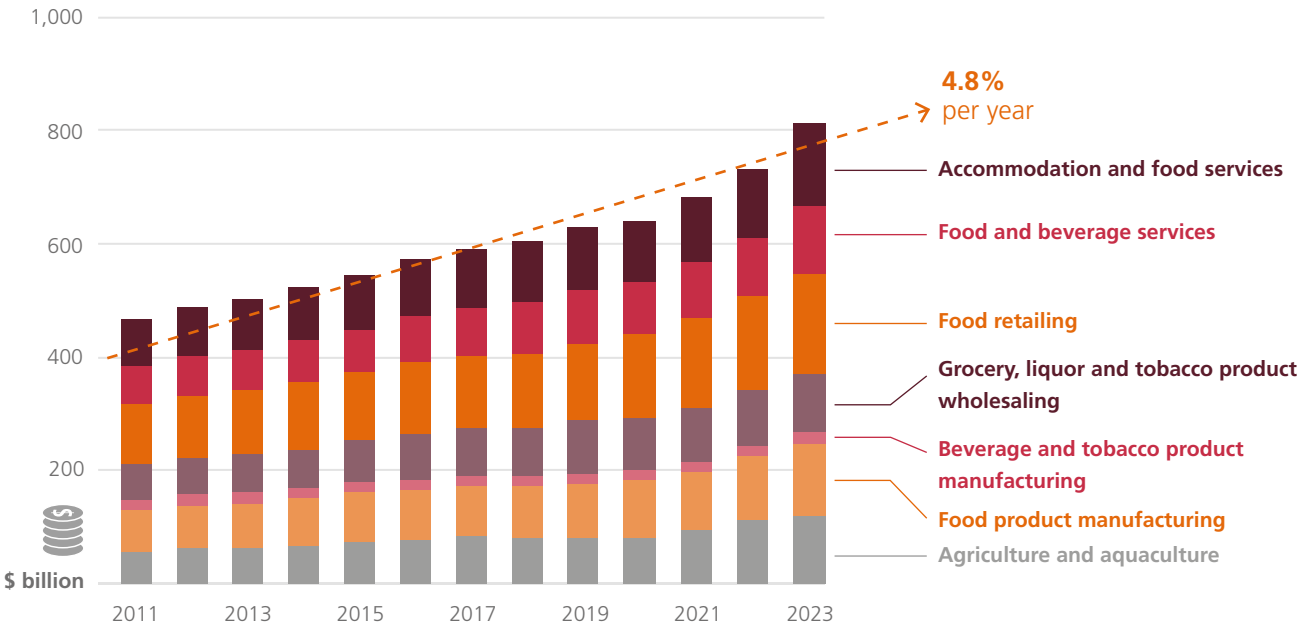

Figure 15: The gross value of Australia's food system from 2010–11 to 2022–23. Source: ABS (2024)

VALUE ADDED ACROSS THE FOOD SYSTEM

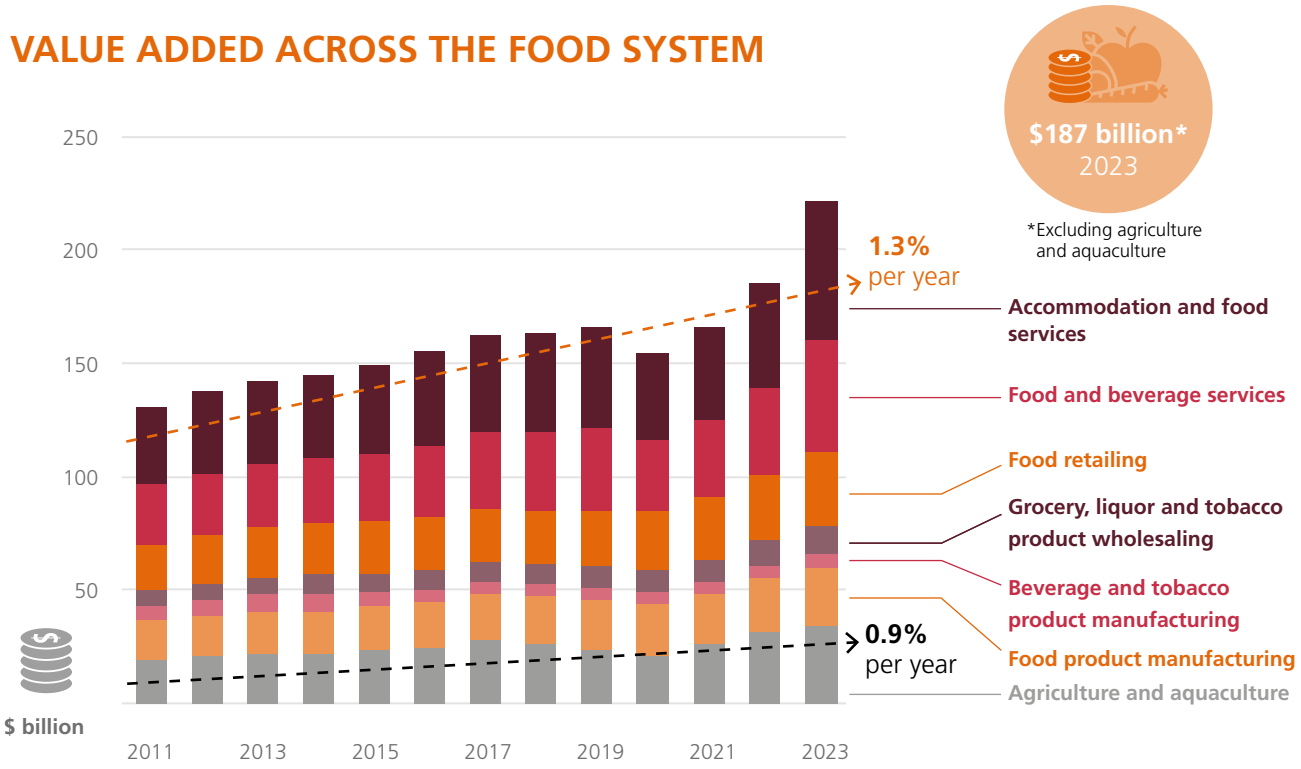

Figure 16: Value added by industries across Australia's food system from 2010–11 to 2022–23. Source: ABS (2024)

annual rates of growth in wholesaling (5%) and retailing (6%). The total income generated by the agricultural sector (including aquaculture) increased by 8.5% to just under $122 billion, having already exceeded the $100 billion target in 2021–22, using ABS data. The gross value of Australia's food system increased by 4.8% per year between 2010–11 and 2022–23, while the agricultural sector (including aquaculture) grew by 6.6% per year over the same period.

The value added by Australia's food system to the Australian economy was over $200 billion in 2022–23. This reflects the income generated by the food system less purchased inputs. The $200 billion of value added is more than twice the target set for agricultural GVP by 2030 and $180 billion more than the value added by agriculture and aquaculture together (Figure 16). Again, this is an underestimate because it does not include the contributions to the food system of the transport, postal and warehousing industries. The value added to the Australian economy by the food system grew by 1.3% per year between 2006–07 and 2022–23. This growth rate was 1.5 times greater than the growth of value added by the combined agriculture and aquaculture industries, which grew at an annual rate of 0.9% over the same period.

Australia's food system supports the on-going growth of the Australian economy. In particular, it has supported a massive expansion of the Australian economy over the last 100 years (Figure 17). The food system is a major source of employment, and over the decade from 2012–13 to 2022–23, it supported a

FARM VS NON-FARM WORK FORCE

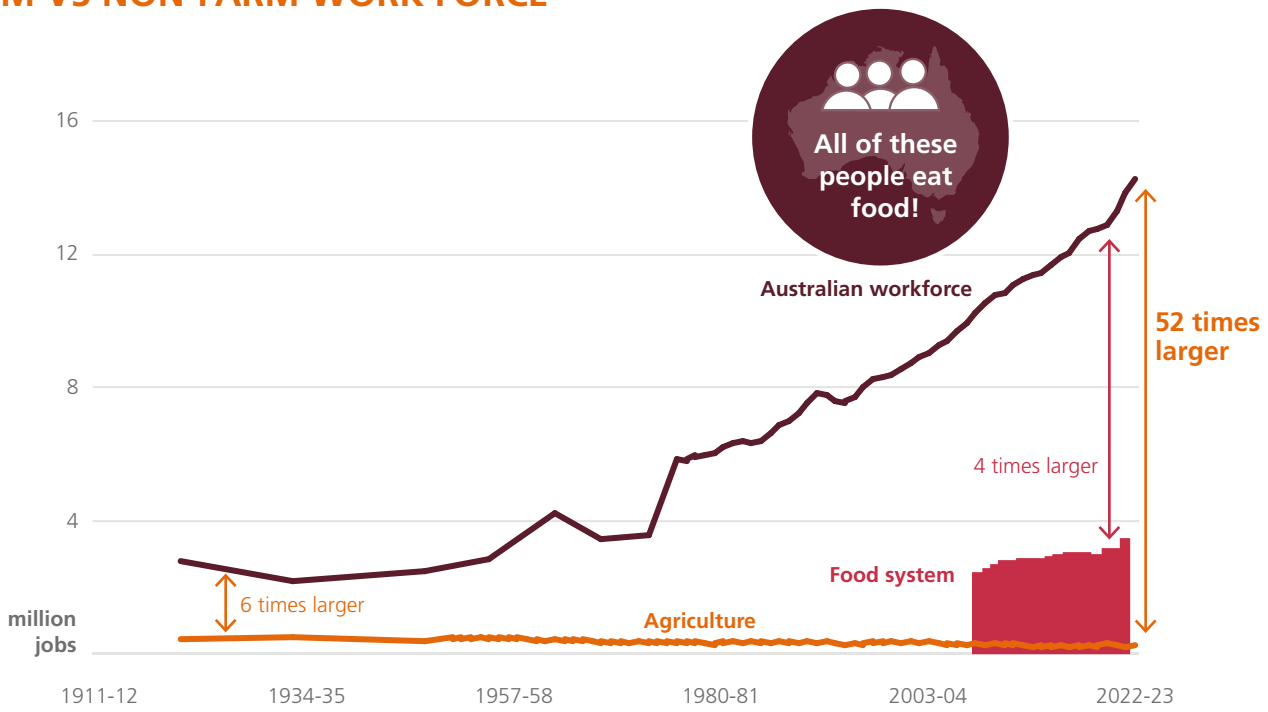

Figure 17: Employment in agriculture and the food system versus the economy-wide Australian workforce

workforce four times larger than its own. Longer-term data show a phenomenal increase in the size of the economy-wide workforce supported by the agricultural workforce. In the 1920s, agriculture supported a workforce that was six times larger than its own, and in the 2020s, it is supporting an economy-wide workforce 52 times larger than its own.

The role of agriculture in economic development

Ultimately, the food system does not exist for its own sake but to support human life on earth. This means that the ultimate measure of the economic success of Australia's food system is not its size but the support it provides for Australia's overall social and economic development. A simple way to measure this is by comparing the number of jobs in the food system with the total Australian workforce that the food system supports.

The ratio of agricultural employment to the total workforce is a summary statistic that reveals a well-established, long-term pathway of industrialisation and globalisation (Roe and Gopinath, 2018; Soubbotina and Sheram, 2000). In countries that have abundant land resources, the productivity of labour can initially grow faster than the productivity of other sectors, such as mining, industry and services. This is due to factors such as the initial abundance of land, water and other natural resources, as well as growing education levels, technological development, mechanisation and governance.

High initial rates of agricultural productivity growth mean that the demand for agricultural labour falls over decades because less labour is needed to produce food – especially for populations growing from a small base. This labour is progressively released to other sectors, such as industry and mining, and later to the services sector for jobs that are less amenable to mechanisation or automation (see figure).

AGRICULTURE AND ECONOMIC DEVELOPMENT

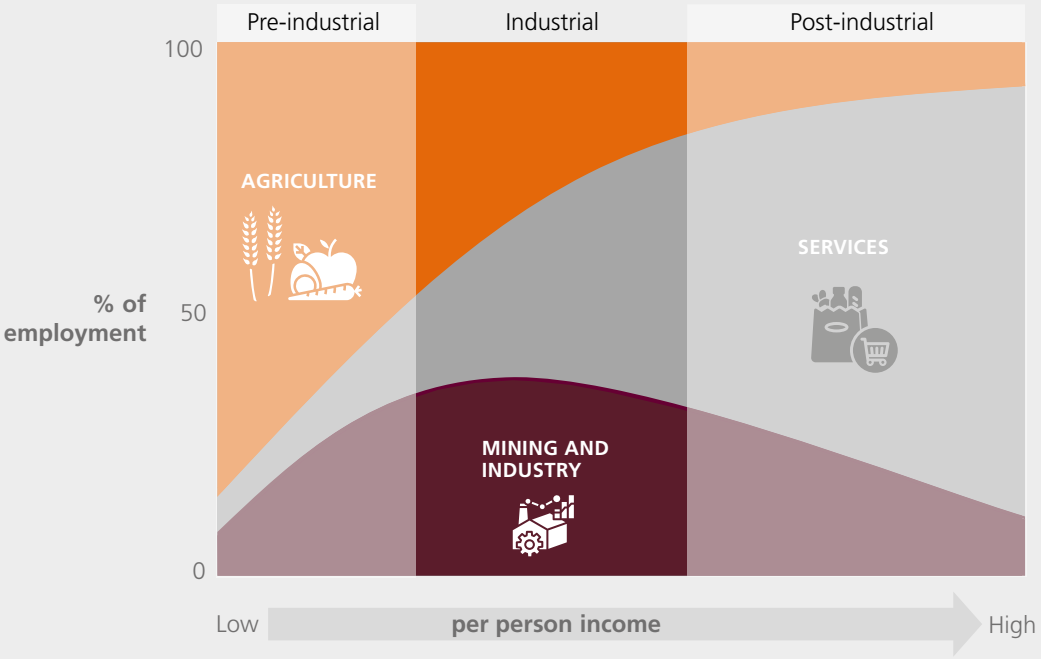

Figure – The role of agriculture in economic development. Adapted from: Soubbotina and Sheram (2000)

Rising demand for goods and services also plays a role in the shift of jobs from agriculture to other sectors. As incomes rise, there are natural limits to how much additional food people need to eat, freeing up household incomes to stimulate demand for non-agricultural goods and services. Australia is now firmly a post-industrial nation in which agricultural productivity is highly optimised and absorbs a small share of the overall workforce (2.5%; ABS, 2024). The figure below shows that the agricultural sectors of developing countries support workforces less than 10 times greater than their own, while those in developed countries can support workforces between 20 and 100 times greater than their own.

RATIO OF THE TOTAL WORKFORCE TO THE AGRICULTURAL WORKFORCE

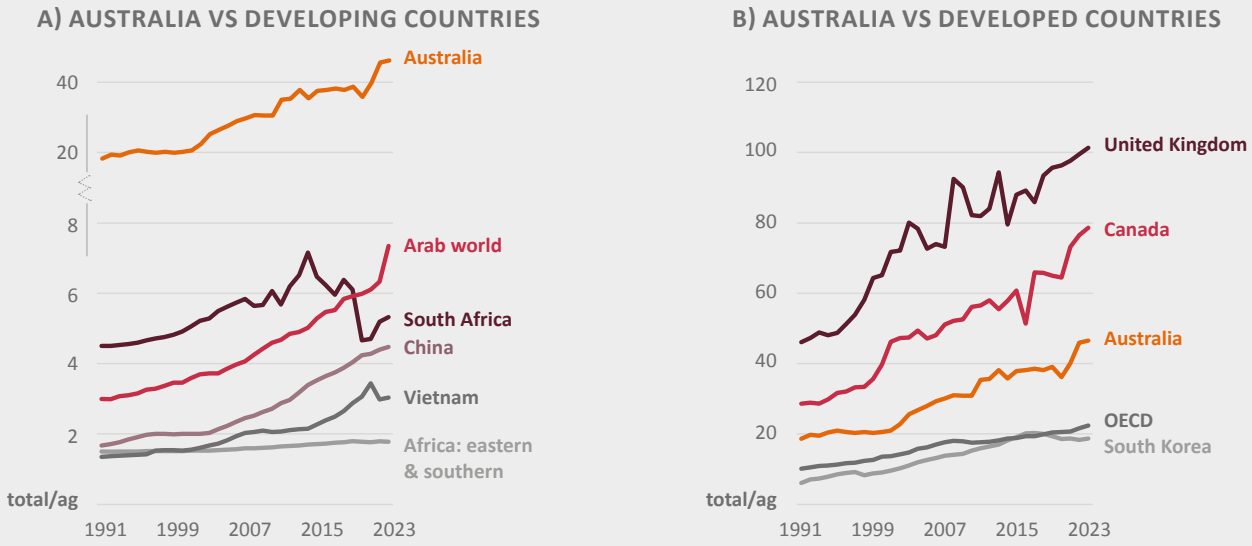

Figure – Ratio of the total workforce to the agricultural workforce in (A) developing countries and in (B) Australia and other developed countries. Source: World Bank (2025)

11.2 Overcoming the limitations of economic reporting

System versus industry

The way we have measured the economic success of Australia's food system has been preventing us from celebrating its full contribution to Australia's economic success. This is because we use partial measures of economic success for individual industries that overlook the combined value of industries across the food system. Gross measures of economic output do not consider the resource or opportunity costs of economic activity.

The single most prominent statistic in Australia's food system is GVP. GVP has been reported regularly since 1949 (Lewis, 1949) and continues to be the headline of agricultural forecasts produced by ABARES (e.g. see Litchfield and Read, 2024). In 2018, the National Farmers Federation revitalised the iconic status of agricultural GVP in modern food system policy by setting a $100 billion target for industry growth by 2030 at a time when GVP was around $60 billion (NFF, 2019) (Figure 18). The $100 billion target was then accepted as policy for the agricultural sector by the Australian Government of the time (DAWE, 2020). GVP has increased steadily over time, which suggests that Australia's agricultural sector is booming and that it will meet the $100 billion target well before 2030 (Figure 18).

Similar statistics for food processing are published by ABARES (table 9 of ABARES, 2023), the AFGC (2022–23) and FIAL (2023), all based on industry statistics published by the ABS (ABS, 2024). These broader food system statistics are not routinely analysed or reported on, or compared to agricultural GVP, nor are they used to set government targets for industry growth. FIAL advocated a $200 billion growth target for the Australian food and agribusiness sector in 2020 (FIAL, 2020), but government support was withdrawn in 2023.

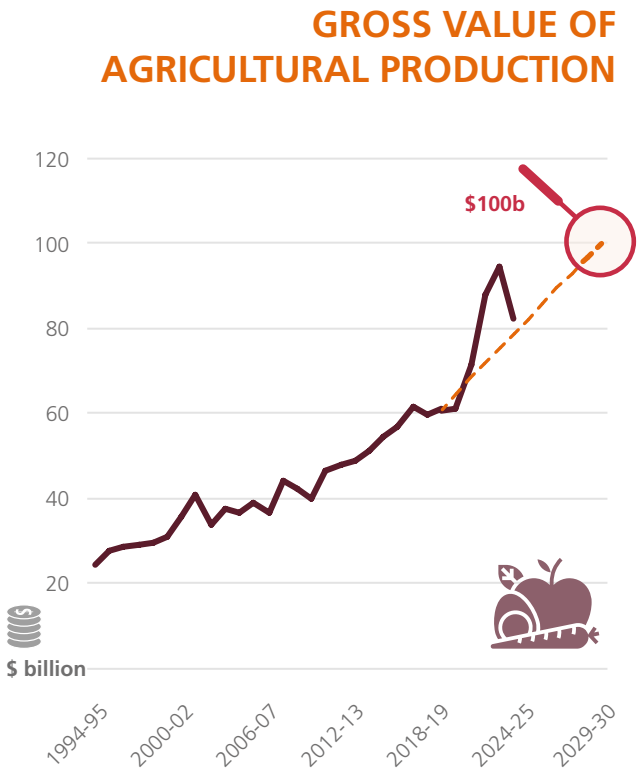

Figure 18: Gross value of agricultural production in Australia from 2007–08 to 2029–30. Source: ABARES (2023)

Managing challenges across the food system

More holistic approaches would enable us to understand the overall value of Australia's food system and how managing interactions between food system activities could improve its overall value. This switch is urgently required because single-sector approaches to productivity growth that have served Australia well in the past are proving less and less effective over time (Figure 19). Taking a multi-sector approach to productivity opens opportunities to pursue global competitiveness by improving interactions

TOTAL FACTOR PRODUCTIVITY

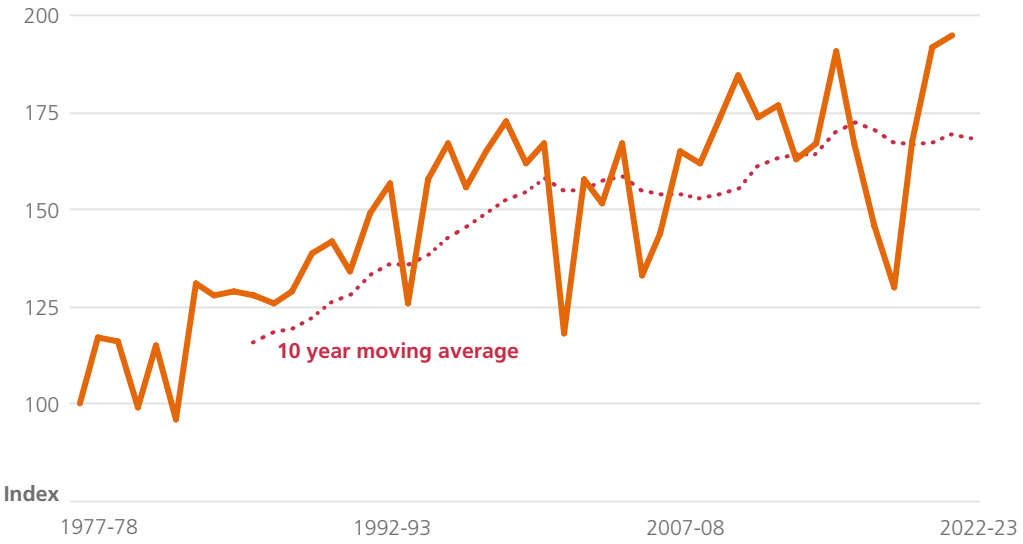

Figure 19: Total factor productivity for Australian agriculture from 1977–78 to 2022–23. Source: ABARES (2024b)

between industries across the food system. It also provides an opportunity to monitor and address challenges in the food system, such as interactions between production, retailing, nutrition and waste.

The current use of GVP as a measure of economic success is potentially misleading or inappropriate in a number of ways. First, it uses a statistic that has not been adjusted for general inflation of prices, and therefore, it does not reflect the underlying economic performance of Australia's farming businesses. When adjusted for inflation, GVP has not yet exceeded $80 billion and is growing at a rate much slower than that widely celebrated in public announcements (ABARES, 2024a) (Figure 20).

Second, Australia exports around 70% of GVP into world markets and has limited influence over factors that determine world prices. Increases in world prices are not always the result of intentional industry or government activity towards meeting industry growth targets. There may be reputational and ethical reasons for not claiming the price benefits induced by events such as wars or famines around the world. For example, in September 2024, ABARES reported that canola 'prices rose through 2021–22 and 2022–23 on the back of droughts in the northern hemisphere, increasing demand for Australian canola and market volatility due to the Russian Federation invasion of Ukraine' (Morton, 2024, p. 41).

Accounting for sustainability, equity and health

Another misleading characteristic of gross measures of value is that they do not consider the resources used in production or the unpriced costs and benefits associated with production. Agriculture's economic contribution to the Australian economy is reflected in the value it adds less any costs it incurs. Net value can be estimated by subtracting the costs of produc-

ADJUSTMENTS TO GVP

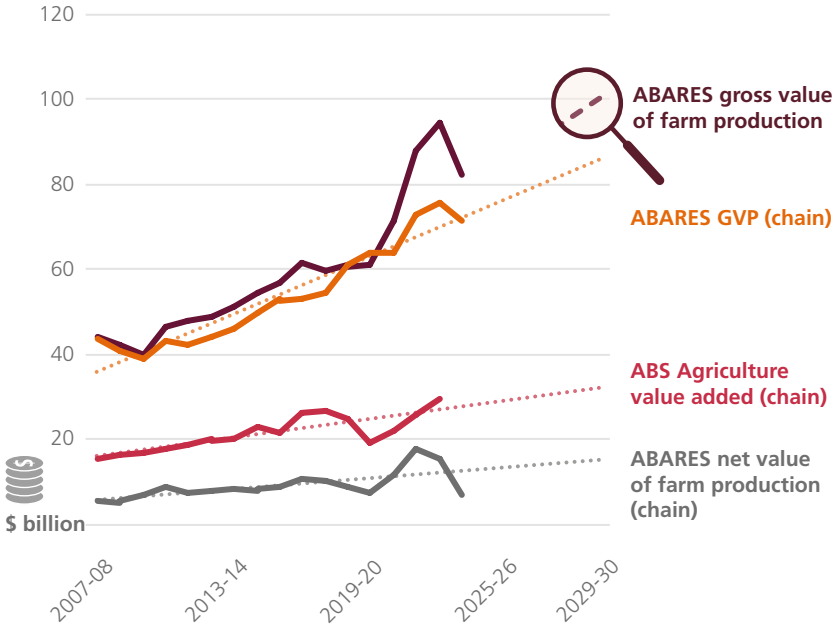

Figure 20: Adjustments to Australian GVP to correct for inflation and input costs from 2007–08 to 2023–24

tion (inputs purchased) from the GVP. The cost of inputs to agricultural production are significant, so the net value of production is much lower than the GVP (Figure 20). A similar measure published for agriculture by the ABS is larger than the estimate produced by ABARES for farms because it includes a more diverse spread of business types (see Zammit and Howden, 2020 for a detailed explanation).

But even the net value of production is a poor measure of sustainability because it does not include unpriced costs and benefits. The environmental and health impacts of the food system are significant and are being estimated via TCA methodologies (see Insight 9, Hidden costs). Value added statistics reflect the prices paid for services to treat illnesses or dispose of waste, rather than the costs imposed by illness or the environmental damage caused by waste. This means that value added can perversely increase when the food system has negative impacts on the environment or health.

The use of GVP as an industry target and to cap government contributions to research and development funding may also be working against productivity, sustainability, equity and health outcomes from Australia's food system (see Insight 1, Nutrition). GVP is used in the Primary Industries Levies and Charges Disbursement Act 2024 (Cwlth) to limit the Australian Government's matching of research and development levies to 0.5% of the average industry GVP for the most recent three financial years. This is likely to encourage industries to do research and development that maximises GVP, potentially to the detriment of other important food system goals. It is also likely to favour large commodity-exporting industries over the smaller and more diverse fresh produce industries that more directly contribute to healthy diets and affordable food for Australians. A bias towards large commodity-exporting industries also makes it difficult to recognise and foster emerging future industries, such as the commercialisation of Indigenous foods and new protein sources. Future mechanisms for specifying the Australian Government's contribution to research and development could include the adoption of metrics that balance production with broader productivity, sustainability, equity and health goals.