Australia 2033

FUTURE SCENARIOS FOR THE AUSTRALIAN PLANT-BASED MEAT INDUSTRY

foodfrontier™

Australia 2030

Reviewing the 10-year horizon

Beginning with the first Food Frontier *State of the Industry* report, Deloitte Access Economics used the heuristic device of modelling three potential scenarios for where the Australian plant-based meat manufacturing industry could reach across the decade to 2030. Those scenarios represented a conservative, moderate and accelerated growth trajectory as follows:

1. **Conscious consumers' choice**, in which the Australian plant-based meat industry was considered to experience conservative growth between 2020 and 2030. Australians would spend a total of $1.4b on plant-based meat and would on average consume 2.4kg of plant-based meat products each year, most of which would be imported. But conventional meat would remain the primary choice for most consumers.
2. **Popular and accessible alternative**, where the Australian plant-based meat industry maintained a strong growth path. In this scenario, Australian consumers would increasingly identify as flexitarian (including meat reducers), with the average Australian consuming 6.1kg of plant-based meat per year and total consumer expenditure reaching $2.9b. Most of this demand would be met by domestic manufacturing.
3. **Mass-market commodity,** which was modelled such that the popularity of the plant-based meat industry accelerated rapidly through to 2030. A decline in conventional meat consumption would reflect more consumers eating plant-based meat as a dietary staple, with the average Australian replacing conventional meat with 15.5kg of plant-based meat per annum and a total spend of $4.6b.

As with the *2020 State of the Industry* report, this report evaluates how the current state of the industry reflects against each of those scenario projections. As shown in Figure 1 below, the actual change in size of the market from FY19-FY23 is not currently on track to realise any of the positions outlined by the scenarios developed in 2019.

These original scenarios were developed at a time of strong industry growth from FY18-FY19, amidst a backdrop of historically low interest rates, high investor confidence and generally positive consumer sentiment. Consumer interest in trying newly available plant-based meats was reflected by strong retail sales, retailers rapidly expanding the category's shelf space, low interest rates and strong venture capital deal flow among new businesses.

The slower than expected growth in recent years can be attributed to a confluence of macroeconomic trends as well as supply chain factors specific to the food manufacturing sector industry. Of note, poor consumer experiences with early iterations of plant-based meat products meat have resulted in lower rates of repurchase, and a slower return to the category, clashing with the early assumptions that consumer behaviour change would eventuate much faster than was possible.

As Food Frontier highlighted in the *2020 State of the Industry* report, the growth trajectory of the industry would not be linear and could be expected to plateau at certain points. The report said the size of Australia's plant-based meat sector in 2030 will ultimately be determined by the sustainability of this growth trajectory. The report also said it is common for fast-growing categories to level off as market size increases, with a smooth tapering of growth over time being rare, and 'lumpy' or uneven growth more typical. Growth rates can plateau or even fall, before accelerating again, with changes in technology, consumer preferences, new products, pricing and marketing for example, all influencing major shifts in sales.[1]

Figure 1. Average annual growth rates required to achieve 2030 scenarios, and actual growth from FY19-FY23

Variable	Scenario 1: Conscious consumer's choice	Scenario 2: Popular and accessible alternative	Scenario 3: Mass market commodity	Actual CAGR from FY19 FY23
Consumer expenditure	23%	32%	38%	18%
Manufacturing sector revenue	21%	45%	48%	15%
Volume of local production	25%	42%	64%	15%
Direct FTEs supported by the sector	11%	23%	35%	27%

Source: Deloitte Access Economics 2024.

Source: Redefine Meat.

Australian landscape 2033

For this report Food Frontier engaged Deloitte Access Economics to recalculate new 10-year scenario models to incorporate the current best knowledge on economic impacts mentioned throughout the earlier chapters, consumer behaviours in response to these impacts, as well as to incorporate the FY23 business indicators of the Australian plant-based meat industry and its projected scope for growth. The market size for plant-based meat in Australia is now tipped to reach $1.65b in FY33, contributing over half a billion dollars in value added to the Australian economy and supporting more than 6,000 jobs.

These three scenarios project the potential economic contribution that the plant-based meat industry could make to the Australian economy by 2033. Deloitte Access Economics has identified Scenario 2 as the central scenario, which Food Frontier believes is the scenario most likely to eventuate with the right policy settings, support and macroeconomic conditions. As highlighted by Food Frontier in the first state of the industry report in 2019, further modelling and calibration will be required over time as unpredictable social and commercial pressures impact the variables, as do the level of R&D and infrastructure investment in the industry. Those considerations are still relevant to these scenarios and recognise that models and projections are fluid and in constant need of modification, as the assumptions upon which they are based are tested and validated.

This chapter examines the potential size and economic contribution of the plant-based meat industry, as per 2019, under three different scenarios—conservative, moderate and accelerated—with new baselines and takes into account the factors affecting the industry over the past four years.

Each scenario is characterised by a range of different factors, such as:

- Proportion of the Australian population that consumes plant-based meats: flexitarians and meat reducers, and vegetarian and vegans
- Weekly volume of plant-based meat purchased by these consumers
- National population growth
- Price of plant-based meat (wholesale and retail)
- Domestic manufacturing capacity
- Share of plant-based meat imported into and exported from Australia.

By 2033, the scenarios project that the Australian plant-based meat industry could grow from $272m in consumer expenditure in FY23 to between $361m to $3.7b. Such a large range reflects the hypothetical and contingent nature of economic modelling: if these conditions prevail, then these outcomes are likely to follow. These scenario modelling outputs are not predictions of where the industry will necessarily be. Instead, they are projections of where the industry could and would be if certain support and settings are realised to foster industry growth and consumer uptake of plant-based meats in Australia.

Figure 2. Potential 2033 scenario modelling outputs for the Australian plant-based meat industry

	FY20	FY23	FY33 Scenario 1	FY33 Scenario 2	FY33 Scenario 3
Total Australian consumer expenditure	**$185.2m**	**$272.5m**	**$361.1m**	**$1.65b**	**$3.70b**
Yearly expenditure per capita	$8.40	$10.20	$12.30	$54.80	$118.80
Manufacturing sector revenue	$69.8m	$62.0m	$117.5m	$572.8m	$1.88b
Volume of local production	2,482.9t	2,205.4t	4,756.3t	25,449.2t	98,646.4t
Total value-added	**$59.0m**	**$45.8**	**$86.0m**	**$582.0m**	**$1.67b**
Direct value-added	$12.6m	$9.7m	$18.2m	$123.4m	$354.7m
Indirect value-added	$46.3m	$36.1m	$67.8m	$458.6m	$1.32b
Indirect value-added - agriculture	NA	7.6m	14.3m	96.5m	277.4m
Total employment (FTE)	**547.0**	**477.5**	**895.7**	**6,063.0**	**17,430.7**
Direct employment (FTE)	246.0	204.2	383.1	2,593.1	7,455.0
Indirect employment (FTE)	301.0	273.3	512.6	3,469.9	9,975.7
Indirect employment - agriculture (FTE)	NA	89.6	168.1	1,137.7	3,270.9
Value of Australian exports	$2.7m	$4.0m	$11.8m	$114.6m	$564.6m

Source: Deloitte Access Economics, 2024.

Note: All dollar figures are nominal, in AUD. Value added and employment projections also assume that industry operational structure (e.g. intermediate expenditure, GOS margin, average wage) and the underlying input-output tables remain constant from FY23. Food Frontier believes Scenario 2 is most likely to eventuate.

Source: Australian Plant Proteins.

$361m
in domestic sales

896
full-time equivalent jobs

10%
of product exported

Scenario 1

Conscious consumers choice

Scenario 1 reflects a potential outcome for the Australian plant-based meat industry following minimal local R&D and infrastructure investment, continued reliance on imported ingredients and imported finished goods, and little growth in the consumer base for plant-based meat.

This scenario represents a conservative growth trajectory to 2033. In this scenario the plant-based meat category maintains a similar retail and foodservice market share to FY23 and grows at a similar rate to other food products, while the domestic plant-based meat manufacturing industry also grows at a similar pace. This reflects a continuation of trends observed in the past two to three years, such as the increasing cost pressures and consolidation that led to the slight reduction in domestic manufacturing from FY20-FY23, resulting in overall minimal nominal growth for the industry.

All three scenarios assume there are two main groups consuming plant-based meats—a group representative of 'adopters' such as flexitarians and meat reducers, and a group representative of plant-based eaters, such as vegetarians and vegans. This scenario assumes that the assumed share of these groups regularly consuming plant-based meats remains constant from FY23 (25% of meat reducers and flexitarians and 7% of vegetarians and vegans) and that these consumers purchase plant-based meat at a consistent rate of once per week.

In Scenario 1, annual Australian consumer expenditure on plant-based meat grows from $272m to $361m, a CAGR of 2.8%. Expenditure per capita is $12.30 per year and consumption of plant-based meat per capita is approximately 360g per year (the same amount as current consumption but represents an overall increase in market size given projected population growth by 2033).

Under this scenario, Australia produces 4,756 tonnes of plant-based meat annually and revenue from domestic plant-based meat manufacturing reaches $118m, representing a CAGR of 6.5%. The share of domestically produced plant-based meat products being exported would be 10%, to a value of $11.7m.

This scenario would see a total of $86m in value-added to the economy by 2033, with $18m value-added directly from the activity of the plant-based meat industry with a further $68m generated indirectly in other sectors, including $14m in the agriculture sector. A total of 896 FTEs will be employed, 383 directly in the plant-based meat industry and 512 indirectly, including 168 in agriculture.

$1.65b
in domestic sales

6,063
full-time equivalent jobs

20%
of product exported

Scenario 2

Popular and accessible alternative

Scenario 2 reflects the potential with increased investment in local R&D and infrastructure, driving a competitive domestic plant-based meat manufacturing industry, reduced reliance on imported ingredients due to a growing local plant protein supply chain and reduced share of imported finished goods consumed in Australia. Growth in the number of consumers reducing conventional meat in their diets and improved product offerings corresponds to solid growth in consumer demand for plant-based meat. Scenario 2 is presented as the central scenario, encompassing the mid-points of all parameters and assumptions considered and is most likely to occur with the right industry action, investment and policy settings.

This scenario represents a moderate growth trajectory to 2033 and reflects a continuation of the medium-term trends (over the last five years) including the strong growth observed from FY19 to FY20.

The consumer base for plant-based meat increases beyond what is projected in Scenario 1—flexitarians and meat reducers are now 26.1% of the Australian population and vegetarians and vegans are now 15.5%. At the same time, a larger cohort of these groups now consume plant-based meat regularly—35% of flexitarians and meat reducers, and 10% of vegetarians and vegans. Purchase frequency has also increased, flexitarians and meat reducers are assumed to purchase plant-based meat up to three times a week, while vegetarians and vegans purchase twice a week. The higher rate of flexitarians and meat reducers consuming plant-based meat over the cohort of vegetarians and vegans is a reflection of the research which demonstrates that flexitarians and meat reducers are already the biggest consumers of plant-based meats and the consumers who are looking for a meat-like replacement in their diet, whilst fewer vegetarians and vegans are interested in consuming products that replicate the experience of eating conventional meat.[2]

In Scenario 2, total expenditure on plant-based meat grows at a 19.8% CAGR to reach $1.65b in FY33. Expenditure per capita increases five times from FY23 to reach $54.8 per year and consumption per capita is approximately 1.6kg of plant-based meat per year.

Under this scenario, Australia now produces 25,449 tonnes of plant-based meat annually, representing $573m of manufacturing revenue, having grown at a CAGR of 24.8%. The share of Australian products exported rises to 20% at a value of $114.6m.

Scenario 2 sees a total of $582m in value-added to the economy by 2033. One hundred and twenty-three million in value is added directly from the activity of the plant-based meat industry, while $458m in value is added indirectly through demand generated in other sectors, including $96.5m in agriculture. Total FTEs increase to 6,063; with 2,593 directly employed by the plant-based meat industry, and 3,470 employed indirectly in other sectors including 1,138 employed in the agriculture sector.

$3.7b
in domestic sales

17,430
full-time equivalent jobs

30%
of product exported

Scenario 3

Mass market commodity

Scenario 3 reflects a high-growth scenario for the Australian plant-based meat industry, towards the upper bound of potential values. It projects an outcome made possible by substantial local R&D and infrastructure investment driving a competitive domestic plant-based meat manufacturing industry with improved product offerings and little reliance on imported ingredients, a minor share of imported products consumed in Australia and strong growth in the consumer base for plant-based meat.

This scenario is characterised by strong and sustained growth in both the Australian consumption and production of plant-based meat, reflecting a resumption of the market conditions that led to the pre-pandemic era growth observed in FY19-FY20.

This scenario sees the consumer base for plant-based meat increase even further: flexitarians and meat reducers reach 43.3% of the Australian population, and vegetarian and vegans reach 19.6%. The share of these market segments that consume plant-based meat regularly increases, to 40% of meat reducers and flexitarians and 15% of vegetarians and vegans. Purchase frequency also increases, with flexitarians and meat reducers purchasing plant-based meat up to four times a week and vegetarians and vegans purchasing plant-based meat three times a week.

In Scenario 3, total consumer expenditure reaches $3.7b representing CAGR of 30%. Per capita expenditure increases tenfold from FY23 to $118.8 per year, while per capita consumption is approximately 4.3kg of plant-based meat per year.

Australia now produces 98,646 tonnes of plant-based meat annually. Revenue from this output is worth $1.88b, representing a CAGR of 75.1% over the decade. The value of domestically produced plant-based meat exports increases to $565, equal to 30% export share.

In this scenario, a total of $1.67b in value is added to the economy by 2033, with $355m in value-added directly and $1.32b in value is added indirectly to other sectors, including $277m in agriculture. Total FTEs increase to 17,430, as 2,593 are directly employed by the plant-based meat industry, and 3,470 employed indirectly in other sectors as a result of demand generated by the economic activity of the plant-based meat industry including 1,138 employed in the agriculture sector.

Source: Harvest B.

State-based contribution

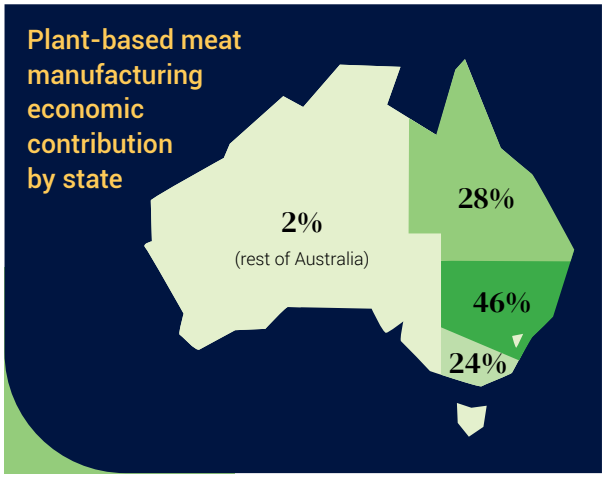
Figure 3. State-based breakdown of economic contribution under future scenarios

State	FY23 actual	Scenario 1	Scenario 2	Scenario 3
NSW value-added ($m)	21.0	39.3	266.2	765.3
NSW employment—total (FTE)	218.4	409.6	2,772.9	7,971.8
Qld value-added ($m)	12.9	24.1	163.2	469.3
Qld employment—total (FTE)	133.9	251.2	1,700.3	4,888.3
Vic value-added ($m)	10.9	20.4	138.1	397.0
Vic employment—total (FTE)	113.3	212.5	1,438.5	4,135.5
Rest of Aus value-added ($m)	1.1	2.1	14.5	41.8
Rest of Aus employment—total (FTE)	11.9	22.4	151.3	435.0

For each scenario presented, Figure 3 shows the projected contribution that the plant-based meat manufacturing industry could make for economic value added and FTE employment to each state by 2033.

These projections assume that plant-based meat manufacturing is likely to continue to expand in areas where food manufacturing already occurs, utilising existing infrastructure, machinery, workforce and supply chains that are already established in the Eastern states, with New South Wales, Queensland and Victoria the three largest expected beneficiaries of local plant-based meat manufacturing. Some movement in value might be expected between the eastern states, as seen with Queensland increasing its share of value added and FTE over Victoria from FY20 to FY23.

However, these projections do not reflect any additional incentives or policy settings that individual states may introduce over the coming decade to attract and retain this new manufacturing industry, which would further influence the distribution of benefits from Australia's plant-based meat industry. Should governments invest in the required processing infrastructure to value add to their local grain and pulse crop production, for instance lupins in Western Australia or faba beans in South Australia, the share of economic contribution added to these states from the plant-based meat industries is likely to increase.



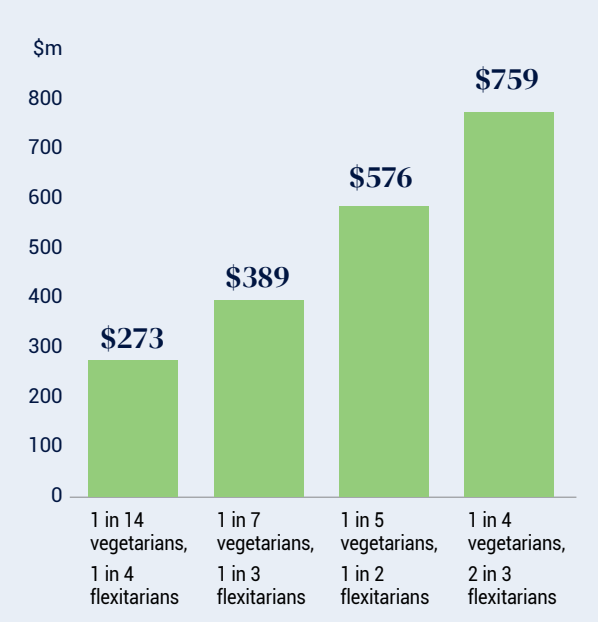
Modelling the impact of changes to consumption and purchase frequency

Two of the key drivers of growth in each of the three scenarios are the proportion of the population that purchases plant-based meat and the frequency at which they purchase it. To demonstrate the role of both an increased consumer base and purchase frequency in growing the plant-based meat market, these two parameters are isolated in the following graphs whilst other scenario parameters are kept constant. These models assume that the current regular consumers of plant-based meat equate to 25% of meat reducers and flexitarians and 7% of vegetarians and vegans, and that the proportion of flexitarians and meat reducers, and vegetarians and vegans, remains a constant share of the Australian population.

Consumer base

Assuming that, as is currently estimated, regular consumers of plant-based meat consume an average of one serve per week, the impact of expanding the consumer base of plant-based meat is shown below. If the share of flexitarians and meat reducers and vegetarians and vegans regularly consuming plant-based meat increases from one in four to one in three, and from one in 14 to one in seven respectively, the market for plant-based meat would increase from the FY23 total of $273m to $389m (Figure 4). At the highest end, if two-thirds of flexitarians and meat reducers and one in four vegetarians and vegans consume one serve of plant-based meat per week, this would generate $759m in sales, an increase of almost $500m.

Figure 4: Impact of increased consumer base on plant-based meat market size



Source: Deloitte Access Economics 2024.

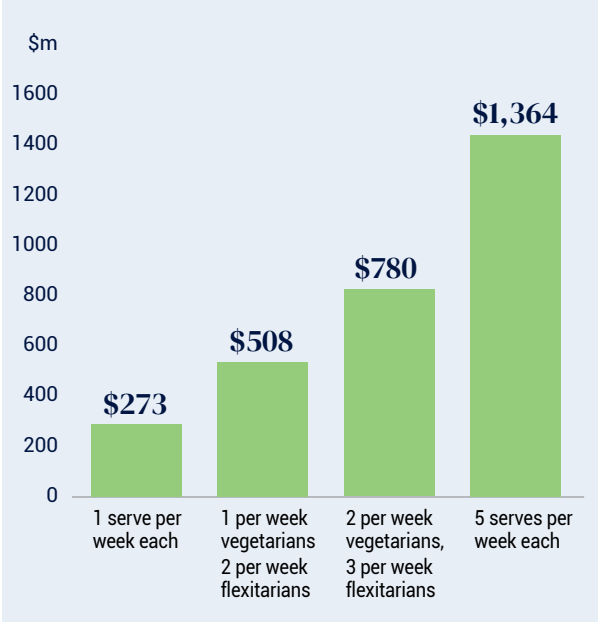
Purchase frequency

Figure 5 shows the impact of increased purchase frequency, assuming the consumer base remains constant at one in four flexitarians and meat reducers and one in 14 vegetarians and vegans.

If the flexitarian and meat reducer group increase their average consumption from one serve per week to two, the plant-based meat market would increase from the FY23 total of $273m to $508m.

At the highest end, if the consumer base consumed five serves of plant-based meat per week on average, this would amount to $1.36b of plant-based meat sales annually.

Figure 5: Impact of increase purchase frequency on plant-based meat market size



Source: Deloitte Access Economics 2024.

References

1 Job K, Kalocsay K. et al. *2020 State of the Industry: Australia's plant-based meat industry*. Food Frontier. 15 Mar 2021. Cited 21 Mar 2024. Available from: https://www.foodfrontier.org/resource/2020-state-of-the-industry/

2 Kerry. *Stepping up Taste in Plant Based: Global report* [Internet] 12 May 2022 [cited 17 Jan 2024] Available from: https://explore.kerry.com/plant-based-taste.html

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