

Overview and future scenarios for dairy in the Mary Valley region



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Foreword

The purpose of this study is to investigate the potential impact on the northern dairy region and Mary Valley sub-region as a result of construction of the Traveston Crossing dam and to identify future scenarios for the Mary Valley dairy region.

Information in this report will be used to:

- develop awareness among industry members of issues that may impact their competitiveness
- inform industry and government agencies about the impact of Traveston Crossing dam on the dairy industry
- highlight future scenarios.

Information in this study was sourced predominantly from publicly available data and reports on the dairy industry, including the Northern dairy industry situation and outlook 2007. Consultation was also undertaken with industry stakeholders and the Department of Primary Industries and Fisheries (DPI&F) dairy team, which includes expertise in research and extension and industry development.

The Department of Primary Industries and Fisheries (DPI&F) seeks to maximise the economic potential of Queensland's primary industries on a sustainable basis.

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1. Introduction

On 5 July 2006 the Queensland Government announced the proposed staged development of a dam at Traveston Crossing. The dam is part of a suite of new bulk water supply infrastructure needed to meet expected additional water demands in the South East Queensland region resulting from projected significant population growth.

The site for the Traveston Crossing is located on the Mary River approximately 27 km upstream from Gympie. Construction of the proposed dam is to be undertaken in a staged process with stage one—the construction of a 153 000 ML dam delivering an anticipated annual yield of 70 000 ML per annum—to be completed by December 2011. Stage two of the proposed dam would be completed in 2035 with the delivery of an additional 40 000 ML per annum.

Completion of stage one and stage two of the Traveston Crossing project will require the acquisition of approximately 700 properties affecting approximately 120 commercial producers, whose total annual farm gate production in the order of \$15–17 million. Preliminary DPI&F figures indicate that approximately half of this total production is from milk production (\$8+ million). Other affected commodities are horticulture (\$4+ million), beef cattle (\$2 million) and other (\$1+ million) comprised of fodder, poultry and other enterprises making up the balance.¹ Potentially, construction of the dam will impact on more than 2000 people.

The Mary Valley region is part of the South East Queensland dairy industry, which in turn is an integral part of a broader northern dairy region milk market that expands from Gympie in Queensland down to Kempsey on the northern New South Wales coast.² In order to assess the future possibilities for the Mary Valley region a broader assessment of the wider northern dairy region was undertaken. The future scenarios in this report focus on the northern dairy region with flow on impacts identified for the Mary Valley region.

¹ DPI&F, *Food and fibre futures scoping report 2007*.

² Dairy Australia, *Dairy 2007: situation & outlook report*

2. Current situation

Current production capacity of the northern dairy region is around 720 ML.³ South East Queensland supplies around 420 ML of this total capacity (of which the Mary Valley region contributes about 115 ML), while northern New South Wales supplies around 300 ML.

Demand in 2007 totalled 540 ML, of which 420 ML was for fresh milk and 120 ML for fresh products.⁴ The remaining 180 ML of production is distributed to regional areas outside of South East Queensland. Over the next five years, growth in milk demand is estimated at 4–5%⁵ per annum, driven by both increasing per capita consumption (2–3%) and population growth (2%). This means that about 20–30 ML of additional milk per annum is required to meet market needs.

The Queensland farm exit rate average over the last five years is about 9% per annum, with production falling by 30 ML a year averaged over the same period.⁶ Within the Mary Valley region, farm numbers have declined from 205 in 1996 to an estimated 110 in 2007, with further exits expected to continue.⁷ Construction of the Traveston Crossing dam will displace approximately 20 additional dairy farms with a capacity of 17–19 ML. Based on current industry trends and regional intelligence, a number of these farms are likely to have exited irrespective of the dam.⁸

³ Estimate for 2006–07 production from Dairy Australia, June 2007, *Dairy 2007: situation & outlook*, p. 79

⁴ Advice from stakeholder interviews

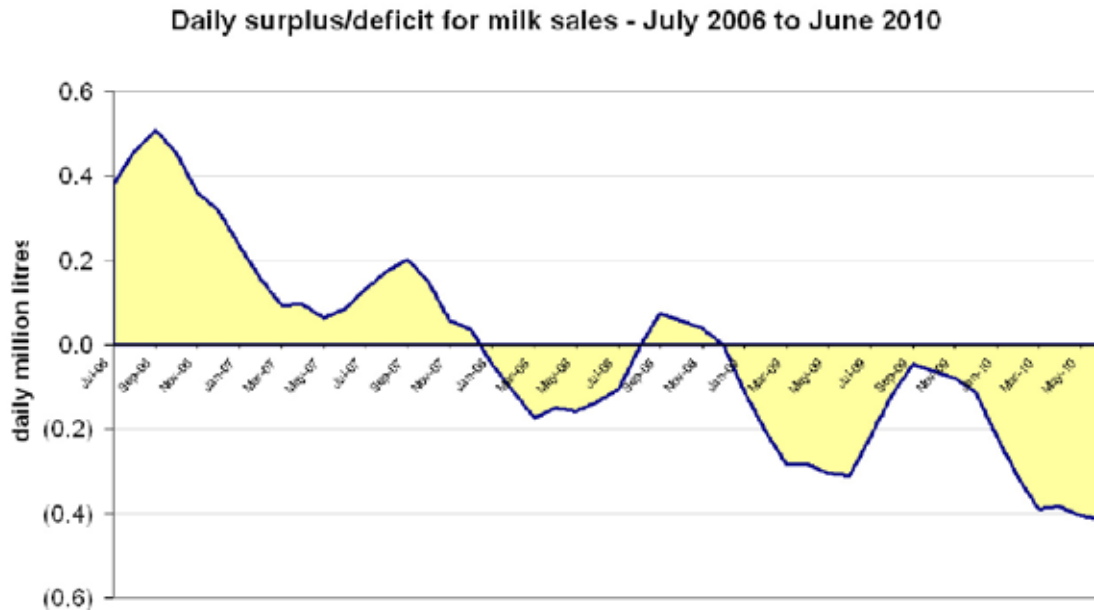
⁵ From *Dairy 2007: situation & outlook* report and various comments from industry members (stakeholder interviews and conference presentations)

⁶ Based on Queensland data from SafeFood figures in Dairy Australia's *Australian dairy industry in focus 2006* report. The average for New South Wales over the same period was 6%.

⁷ DPI&F, 2007, *Food and fibre futures – opportunities for stimulating agricultural development in the region of the proposed Traveston Crossing dam*, p. 8

⁸ DPI&F, 2007, *Food and fibre futures*, p. 12

Figure 1



Source: Northern dairy industry situation and outlook 2007

Figure 1 illustrates that farm milk supply in the northern dairy region is not sufficient to match year-round processor demand for fresh milk. This is due to a range of factors including seasonal conditions, ongoing drought, and declining farm numbers. Industry reports indicate that this situation will be an ongoing issue to 2010.⁹ The construction of the proposed dam at Traveston Crossing is likely to expand the gap between supply and demand because farmer exit rates will increase as Queensland Water Infrastructure purchases properties in the inundation and buffer zones.

Currently, processors supplement local supply gaps with milk transported from interstate. In the longer term this may have wider implications for the Queensland dairy industry—in terms of consumer acceptance of concentrates and long-life milk or fresh milk from other regions (particularly if they are cheaper alternatives to local milk).

⁹ Dairy Australia, Dairy 2007: situation & outlook report, p. 43

3. Future possibilities

The future size, structure and location of Mary Valley region and the northern dairy industry depend upon several key factors, as outlined below:

- Future local demand for fresh milk
- Demand for milk for manufacturing of other local processed dairy products
- Ability of local industry supply to meet demand
- Ability to compete for resources (e.g. water, land, labour etc.)
- Competitiveness of alternative supplies of milk—fresh milk from other regions and alternatives to fresh milk (e.g. concentrates)
- Security and price of water
- Processor supply model preferences—local vs alternative sources
- Increasing climate risks
- Retail trends, pricing and strategy
- Impacts of population growth and urban encroachment
- Future consumer preferences

In order to develop future scenarios for the industry, the above factors and their drivers were examined based on information from existing industry reports and opinion derived through interviews with selected industry and government representatives. Scenarios were then prepared to illustrate the main uncertainties and variables. These included:

- Short-term to medium-term northern dairy supply/demand scenario
- Mary Valley region supply scenarios for 2015.

The scenarios are based on a range of variables and information currently available, and as such are indicative only. They are not meant to provide accurate descriptions of the industry in the future, but to indicate the directions the industry could take.

4. Northern dairy supply/demand scenarios

A standard demand scenario based on 2% population growth and 2–3% per capita consumption growth was developed and used as the basis for all scenarios¹⁰. Variations for demand with and without milk for fresh product processing requirements have also been included. The following supply scenarios were then developed to capture supply changes.

Four scenarios were developed:

1. Base case—no change in productivity levels and no new entrants
2. Base case plus new entrants—addition of five mega dairies of 10–20 ML capacity each over a five-year period
3. Productivity growth—increase of average productivity to 6500 L/cow in two years (~2009) and increase in average herd size to 230 cows in five years (2012), and no new entrants
4. Combination of productivity growth plus new entrants—productivity growth plus five new mega dairies.

Variable farm exit rates (2.5%, 5%, 9% or 15% per annum) were also included for each of the scenarios. A summary of the scenarios is presented below.

Scenario 1: Base case

This scenario gives a general indication of the impacts of different annual farm exit rates.

At very high farm exit rates (15%), a regional milk deficit occurs by 2008–09; the deficit volume grows rapidly (about 100 ML per year), making it hard for productivity increases or alternative milk sources to make up the gap in the short term. At high to moderate exit levels (9% and 5%) a deficit occurs by 2009–10 and 2010–11 respectively, and deficit volumes are lower (about 60 ML per annum). At a very low exit rate (2.5%) a regional milk deficit is delayed until 2012 and deficit volumes are much lower, making it easy for productivity increases or alternative milk sources to bridge the gap.

¹⁰ Figures of 4% overall growth were used from 2007–12, 3% from 2013–17 and 2% from 2018–22. Recent updated estimates, from the Northern dairy industry regional industry outlook, update: November 2007 report, are slightly higher at 6% for 2007–08 and 3.5% pa thereafter

Scenario 2: New entrants

This scenario identifies that major new entrants have a shorter window of impact (one to two years) on the overall surplus/deficit situation. With demand projected to increase at 20–30 ML per year, and limits to the number of large new dairies that could be established, new entrants alone are unlikely to make up supply deficits that would occur at 9% and 5% farm exit rates.

Scenario 3: Productivity growth

In higher milk demand scenarios (fresh milk plus processing), increased productivity is an important factor in terms of avoiding a milk deficit in the short–medium term (five years). In lower demand scenarios (fresh milk only), productivity increases defer a milk deficit situation but they also have the potential to create large milk surpluses in the interim (five years). The ability to achieve wide-scale productivity increases, however, is questionable given existing industry circumstances, resources and capabilities. Future processing demand plus the actual timing of productivity increases combined with farm exit rates will have a large impact on whether a milk surplus/deficit occurs and timing of this.

Scenario 4: Productivity growth and new entrants

Significant production increases are possible with a combination of productivity increases and new entrants. However, at high levels of both, production could outstrip demand and create a surplus, which is well over the 10–20% buffer that processors currently seek.

There is a balance between ensuring supply meets demand without running the risk of long-term milk deficits or milk oversupply based on existing processing capacity. For processors, a small supply deficit that they can readily fill from alternative sources is likely to be more cost-effective than investing in new processing facilities once any current idle capacity is fully utilised. Cost of the next best alternative milk sources will place an upper limit on local milk prices. Processor strategies regarding future milk supply security and potential further rationalisation of the processing sector will have a strong influence, along with future of production in alternative supply regions as to how the supply/demand balance impacts South East Queensland producers.

In a high milk demand situation with stronger farm gate prices there is potential for production growth. In such circumstances, a combination of increasing productivity of existing dairy farmers and attracting new industry entrants would likely be required to meet projected demand as neither strategy alone, in reality, would be likely to keep up with the annual demand growth. In the above scenarios, continuous demand growth was modelled at between 4% and 2% per annum. A risk factor to future growth in demand may be issues that cause significant changes to current consumer preferences, driving them away from milk products.

5. Mary Valley supply scenarios

Scenarios are based on 73 farms remaining post-dam in 2015 (from estimates based on DPI&F industry knowledge of farms to be inundated and other planned farm exits) and the relative capacity of the region to meet existing production levels at varying productivity levels.

Table 1. Mary Valley milk production scenarios for 2015

	2007	Baseline	Scenario A	Scenario B	Scenario C	Scenario D
Dairy farms	110	73	73	73	73	65
Cows/farm	190	190	230	250	250	250
Total cows	20 900	13 870	16 790	18 250	18 250	16 250
Milk/cow (litres)	5500	5500	6200	6500	7000	7500
Total milk (litres)	114 950 000	76 285 000	104 098 000	118 625 000	127 750 000	121 875 000
Change from 2007		-38 665 000	-10 852 000	3 675 000	12 800 000	6 925 000

Scenario A = improved average herd sizes and productivity

Scenario B = higher improvements in average herd size and productivity

Scenario C = maximum improvements in average herd size and productivity

Scenario D = 50% lower farm numbers and maximum average herd size and productivity

As Table 1 indicates, to achieve production levels similar to the 115 ML achieved in 2007, the region would need significant increases to productivity levels of 6500 L/cow and herd sizes to 250 cows. To keep pace with increasing milk demand (estimated 4–5% per annum for northern dairy region milk market) the region would need to significantly exceed estimated production capacity and attract major new dairy investments.

Key limiting factors for the Mary Valley region are availability of cost-effective land for herd expansion or establishment of new dairies, climate variability, water supply, pricing and security, producer skills and knowledge, and impediments to intensification due to urban pressures and water quality/catchment issues. Future climate change impacts also have potential to limit capacity for productivity increases (higher temperatures and humidity impact on herd nutrition and pasture productivity). The impact of these factors has potential to increase over time and may place limits on industry development and use-by dates on current and any potential new dairy investments.

6. Opportunities for Mary Valley region dairy industry

As demonstrated in the scenarios, there are opportunities for increased fresh drinking milk supply, particularly during the seasonal low supply periods, within the northern dairy milk market. The potential for increased dairy production in the Mary Valley region in response to this is discussed below. Opportunities for alternative niche markets are also discussed.

The Mary Valley region is well situated to target the South East Queensland/northern New South Wales milk market and the land and climatic conditions are generally well suited to dairy production. Land acquisition from the proposed Traveston Crossing dam, escalating land prices, urban pressure and water security are some of the main factors that impinge upon future dairy growth potential in the region.

Given these factors, there initially appears to be limited opportunity for major new large-scale dairy enterprises in Mary Valley region. Downstream land is cheaper with larger block sizes; however, the land is not as good for dairying as that south of Gympie. Overall, it appears that other regions are more attractive for new dairy investments, with interest focusing on the traditional large dairying areas in southern states or the western areas of Queensland or northern/central New South Wales in terms of the northern dairy region.

The most likely opportunities for dairy industry development in the Mary Valley region are from increased production from existing dairies to service the growing northern dairy milk market or new milk demand as a result of any development of local niche processors.

In addition to the existing market milk focus of the dairy industry, there may be additional niche market opportunities for producers and small processors in the region. There are already a number of small cheese makers and local milk suppliers. Trends for ‘local food’, regional tourism, and specialty or origin branded products could provide avenues for growth and development of dairy in the Mary Valley region in the future.

Additional milk production will be needed as milk demand continues to grow and farm numbers continue to decline through normal industry succession and dam-related exits. This could be achieved through improved productivity per cow and increased cow numbers per farm. Limitations to this include availability of cattle, capital for infrastructure, industry motivation, production skills and knowledge in the immediate short term, water security, cost/availability of land for expansion, climate change and potential competition from alternative production regions or alternative land/resource uses in the longer term.

Some of these limitations are within the scope of industry to address, such as skills and knowledge development; however, other limitations—such as land values—are beyond the influence of industry and market forces will largely drive changes in these areas.

7. Conclusion

The northern dairy region is facing a potential milk supply deficit in the near term due to increasing demand and declining local production.

Future milk demand in the northern dairy region could be met by increased productivity levels alone. However, due to a range of factors—many of which are outside farmers' control—the chances of this occurring in the short term are unlikely. Most farms will not have the resources (physical or financial), skills or motivation to significantly improve productivity either through increases in herd numbers or per cow milk production in the current operational environment.

In general, significant productivity gains, beyond per-cow productivity improvement, will require large investments in farm infrastructure and changes to the farming system used. Producers interested in increasing their farm productivity would also require commitment to higher milk prices from processors, a return to good seasonal conditions, secure—and preferably increase—access to water, and access to cost-competitive feed grain and fodder, labour and land. These key factors (prices, feed, water and land) will influence the relative sustainability of dairy sub-regions, such as the Mary Valley region, within the northern dairy region and where industry expansion or decline occurs. Lifestyle factors will also continue to play a role in industry location due to the family farm-based nature of the industry.