

FUTURE DAIRY SUPPLY FOR ALPINE VALLEYS NORTH EAST VICTORIA

PREPARED FOR
ALPINE VALLEYS AGRIBUSINESS FORUM

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ON FARM CONSULTING PTY LTD
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Contents

1. EXECUTIVE SUMMARY 3

2. OBJECTIVES AND BACKGROUND..... 7

3. AGRICULTURAL RESOURCES AND CLIMATIC PROFILE IN THE ALPINE VALLEYS ... 8

 3.1 Area Defined as the Alpine Valleys Region 8

 3.2 Agricultural Resources 8

 3.3 Rainfall and Irrigation Trends 9

4. DAIRY INDUSTRY PROFILE..... 12

 4.1 Australian Dairy Industry..... 12

 4.2 Alpine Valleys Dairy Industry Profile 14

 4.3 Factors Affecting the Current Alpine Valleys Dairy Industry Profile 15

5. PROFITABILITY OF GRAZING ENTERPRISES IN THE NORTH EAST 17

 5.1 Definition of Profitability..... 17

 5.2 Alpine Valleys Dairy Profitability and Production Costs Relative to Other Regions of Victoria..... 18

 5.3 Alpine Valleys Dairy Profitability Relative to Other Grazing Industries Within the Region 21

6. ALPINE VALLEY EXAMPLE DAIRY AND GRAZING FARM PROFILES..... 23

 6.1 Typical size well managed dairy farm - does size matter?..... 24

 6.2 350 hectare grazing enterprise..... 26

 6.3 An existing 350 hectare dairy farm enterprise..... 27

 6.4 A conversion from grazing to dairy 350 hectare enterprise 29

7. LAND VALUES AND PRODUCTIVITY IN THE ALPINE VALLEYS RELATIVE TO OTHER DAIRY REGIONS..... 34

8. SUMMARY OF ECONOMIC RATIONALE TO EXPAND DAIRYING IN THE ALPINE VALLEYS REGION..... 35

9. POTENTIAL BARRIERS TO THE GROWTH OF DAIRYING IN THE NORTH EAST 36

10. ADDITIONAL SYNERGIES BETWEEN DAIRYING AND GRAZING IN THE NORTHEAST..... 40

11. LIST OF ATTACHMENTS 42

12. REFERENCES 42

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ONFARM Consulting clients – provision of data
Various commercial sources – assistance with conversion costs

1. EXECUTIVE SUMMARY

- The Alpine Valleys region experiences significant climate variability both within and between the valleys where dairying occurs at present.
 - Future dairying will continue to be pasture/forage, “rain-fed” based with some assistance from irrigation when it is available.
 - Current dairy farms are generally located on floodplains of major rivers and choose stocking rates that take into account this variability and enable them to manage risk.
 - Existing dairy farmers in the region have to exhibit a high skill level to cope with this climate variability, especially if trying to farm on the less productive areas away from the flats.
- Dairying currently contributes \$88 million to the region from 38,000 milking cows and approximately 210 farms. This would require 220,000 beef cattle to contribute the same amount.
- Investigations as a part of this report have led to the conclusion that there is an economic case for expansion of dairy farming in the Alpine Valleys region. Analysis of group collective and individual data (DPI Farm Monitor and ONFARM clients) and farming scenarios based on the potential use of 350 ha showed that:
 - The region produces milk at a lower cash cost (14 % lower) than the irrigation districts of Northern Victoria but slightly higher than Gippsland (5%) and Western Victoria (1.6%).
 - The Return on Assets (ROA) achievable in the North East is comparable with the other dairy areas but more variable due to seasonal conditions.
 - Land and water capital invested per cow is around 20% lower than in Gippsland and Western Victoria but higher than in Northern Victoria.
 - In a productive sense land values in the Alpine Valleys region are similar or slightly lower than other “rain-fed” dairying areas.
 - In terms of true business profit, Earnings Before Interest and Tax (EBIT), which allows for both imputed labour and depreciation:
 - A well managed Top25% dairy business will average 7% ROA compared to 4.5% for an extremely well managed Top 5% grazing

enterprise. Capital growth of 4 – 5 % can be added to these figures.

- It appears from what was investigated during this project that the majority of grazing enterprises do not achieve a true positive EBIT (earnings before interest and tax).
- Analysis of Operating Surplus (income less farm working expenses; amount left to live, pay debt and tax)), generally a farmer's measure of profitability, indicated that:
 - An average dairy farm will generate an operating surplus of \$851 per grazing hectare compared to \$179 per hectare used for a grazing enterprise.
 - To generate an operating surplus of \$60,000 for living and debt servicing an area of 80 ha would be required for a dairy farm and 300 ha for a top 25% grazing enterprise.
 - Dairy industry entry levels exist for a minimum of 120 cows and above in terms of viability when there is no debt.
- Dairy farms are able to service a greater level of debt compared to grazing enterprises. For a well managed dairy farm 65 – 70% equity would enable viability compared to 85 – 100% for a grazing enterprise.
- The above figures relate to an existing dairy farm compared with an existing grazing property. If a farm is converted, usually requiring the taking on of debt:
 - The cost of conversion may total \$3,647 per hectare (\$1,425/acre) plus or minus 60%, depending on the location and skills of the converter/type of conversion.
 - Added to the typical base land value of \$8,000/ha, the value achieved on sale once converted would need to be \$11,647/ha. The realistic figure is less than that.
 - If the costs of conversion and subsequent debt level are too high then any increase in cash flow due to the more profitable enterprise could be negated by debt servicing.

- A conversion farm with equity levels of 70% or lower would need a Top 30% management level in the Alpine Valleys. Equity levels below 60% should not be encouraged.
- Given the high costs of complete conversion it may be possible for the owners of grazing properties to investigate activities such as leasing /agistment to dairy farmers, which may produce a better economic outcome.
- Given that there is a strong economic case for dairy expansion in the Alpine Valleys region yet growth of the industry isn't occurring, there must be barriers to that growth. Those identified in this report are:
 - The risk profile of dairying –
 - Variability of seasons, milk price and input prices
 - Attitude to debt and spending to create margins – someone moving into dairy is likely to have to take on debt and become used to spending quite high amounts on inputs compared to typical grazing expenditure; the figures involved could be daunting.
 - The potential cost of conversion on top of the cost of land. Grazing land in the Alpine Valleys region costs 70 – 85% of existing dairy land which means that conversion becomes an expensive proposition and expenditure is not recouped for a number of years. Debt servicing can negate any increases in cash flow.
 - The skills required to dairy – marginal thinking as above plus more concentrated focus on grazing management to maximise pasture intake by dairy cows. This rarely receives the same focus in a grazing enterprise.
 - “Lifestyle” issues such as the labour and time requirement in dairying compared to grazing.
 - Lack of positive publicity about the financial potential of dairying. The industry is rarely trumpeted in the broader community as profitable and a successful way of growing assets.

- Changing profile of new land owners.
 - Research has shown that in future traditional farmers are not necessarily going to be replaced by other farmers when a property changes hands. The new owners may not have the will or the skills to take on dairying (and perhaps not even grazing); but this may mean that the land becomes available for use by other dairy farmers.
 - There is the potential for some existing dairy farmers to move from the Northern Irrigation Districts given the situation with lack of /uncertainty of water availability. They will be weighing up the difference between higher cash costs of production and lower capital investment where they are versus lower cash costs but higher initial investment in the Alpine Valleys.
 - Exiting dairy farmers may lease their farms to new operators rather than simply run beef.

In summary, a well balance dairy business in the Alpine Valleys region is economically more attractive than grazing. But there are barriers to expansion of the industry in the region, both financial and psychological. A marketing campaign would need to address all these issues.

2. OBJECTIVES AND BACKGROUND

The Alpine Valleys region of North Eastern Victoria has historically supported a strong dairy industry, based predominantly on “rain fed pasture” assisted by varying levels of irrigation. The amount of land in dairying has declined over the years and while farm numbers are currently relatively stable there may be potential to expand dairying in the region or create synergies between the dairy and grazing industries

In July 2008 the Department of Primary Industries reviewed the agricultural resources available in North East Victoria. The report generated was aimed at bringing together information related to the agricultural capability and land use within the Alpine Valleys Region that would assist current or potential land owners in making better informed decisions about the potential and suitability of various agricultural enterprises.

This new report, while having certain aspects in common, should be viewed as adding to that information, having the more focused aim of investigating the potential future of dairying in the Alpine Valleys.

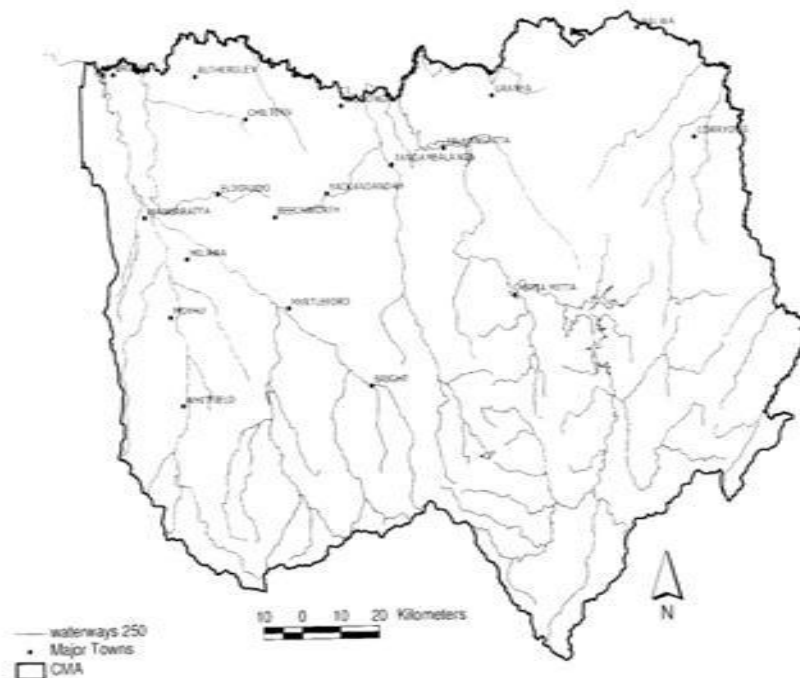
Specifically, the “Future Dairy Supply for the Alpine Valleys” Project aims to:

- Review the profitability of operating a dairy enterprise in the Alpine Valley region, highlighting factors affecting profitability.
- Compare the profitability of dairying in the Alpine Valleys with other regions of Victoria.
- Compare the profitability of dairying to other grazing enterprises in the Alpine Valleys.
- Assess the issues involved and the economic merit of converting grazing land to dairy production in the northeast.
- Identify barriers to the growth of dairying in the Alpine Valleys region.
- If justified, after the findings in the above, develop a marketing strategy to encourage dairying in the Alpine Valleys region.

3. AGRICULTURAL RESOURCES AND CLIMATIC PROFILE IN THE ALPINE VALLEYS

3.1 Area Defined as the Alpine Valleys Region

The area designated as the “Alpine Valleys” region (or North East Victoria) comprises three major catchments: Upper Murray, Kiewa and Ovens. It also covers the local Government areas of Wodonga, Indigo, Wangaratta, Alpine and Towong.



Source: (Victorian Government, Corporate Geospatial Data Library)

Figure 1. Major towns and waterways in the North East Catchment.

Figure 1. Map of Alpine Valleys

3.2 Agricultural Resources

The 2008 DPI report “Agricultural Resources in North East Victoria” provides specific detail on the soil types, climate and water sources in the Alpine Valleys region along with land use and demographic information and it is recommended that this information source be read. Some key points that are relevant to this report are,

- Rainfall can vary from 500 mm on the plains to 2000mm in the alpine areas. A minimum average rainfall of 600 mm is desirable for pasture based dairying.
- Agriculture contributes significantly to the prosperity of North-East Victoria (\$300 million per year) with agricultural production and diversification key drivers behind the sustainability of communities in the region. Livestock production is the largest contributor to the region's agricultural economy consisting of beef, sheep, and some dairying enterprises
- Irrigation water can be a key input to agriculture and horticulture in the region.
- The largest growing age group in the region from 1996 – 2006 have been between 45 – 54 and 55 – 64.
- Land use change is a constant feature, and the needs of both land holders and potential investors must be met. **Criteria such as profitability, risk diversion, marketability, productivity capabilities and opportunities for younger generations must be addressed.**

3.3 Rainfall and Irrigation Trends

The following graphs show the rainfall pattern data up to 2007, and highlights the variation within and between valleys.

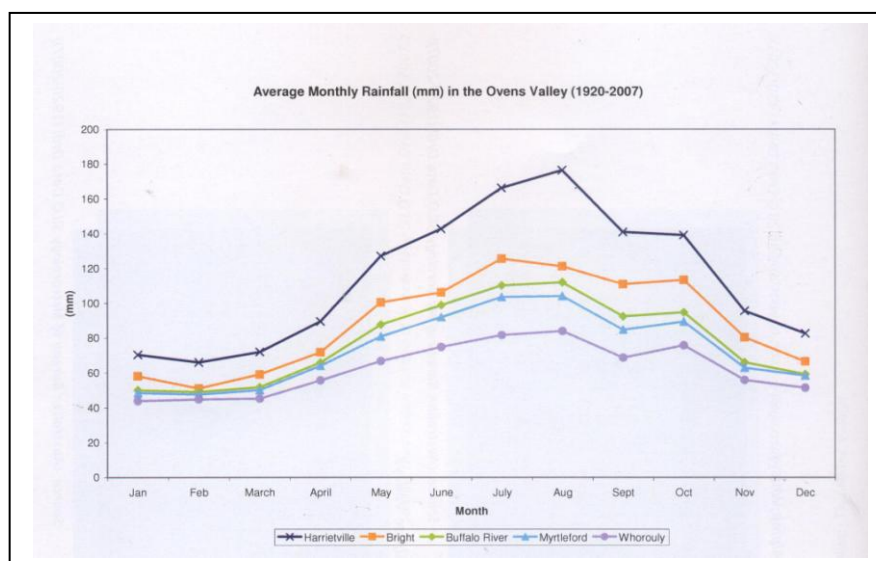


Figure 2.

Rainfall Data
Ovens Valley

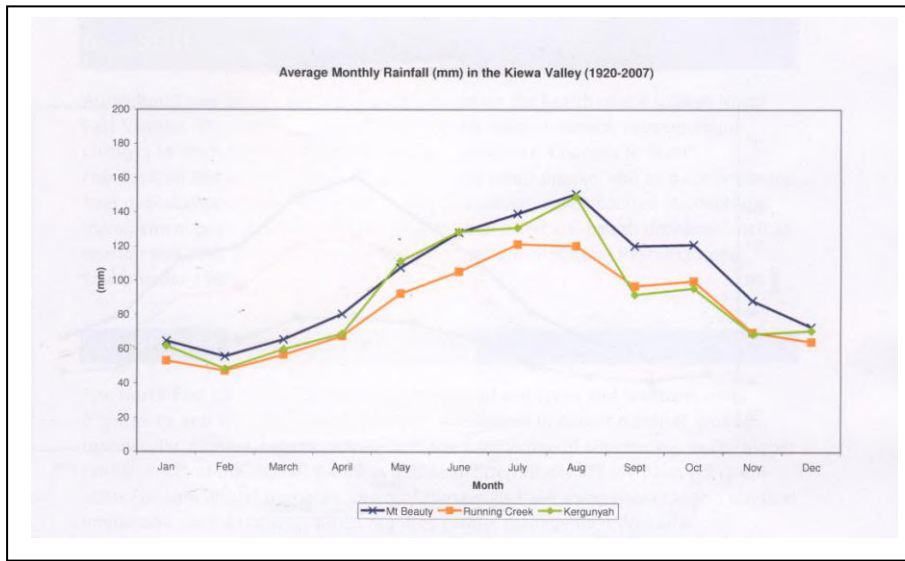


Figure 3.
Rainfall Data
Kiewa Valley

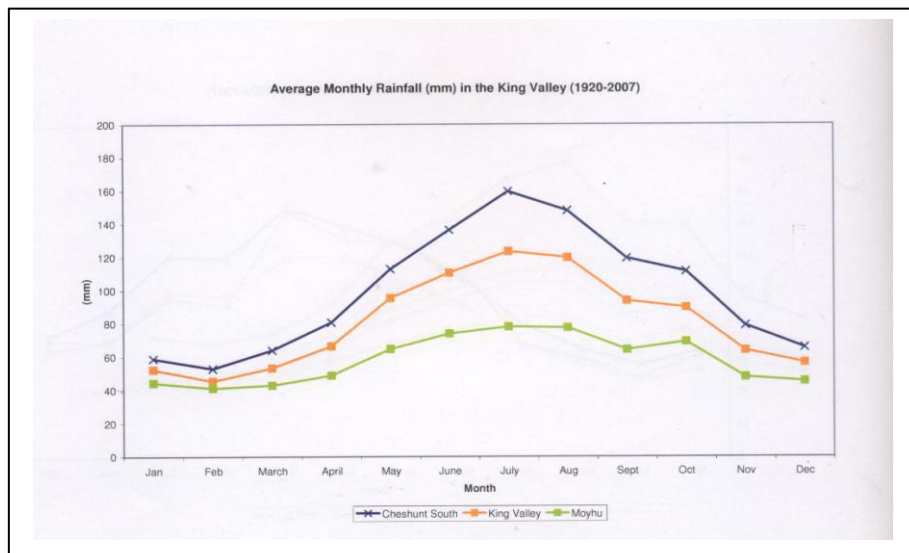


Figure 4.
Rainfall Data
King Valley

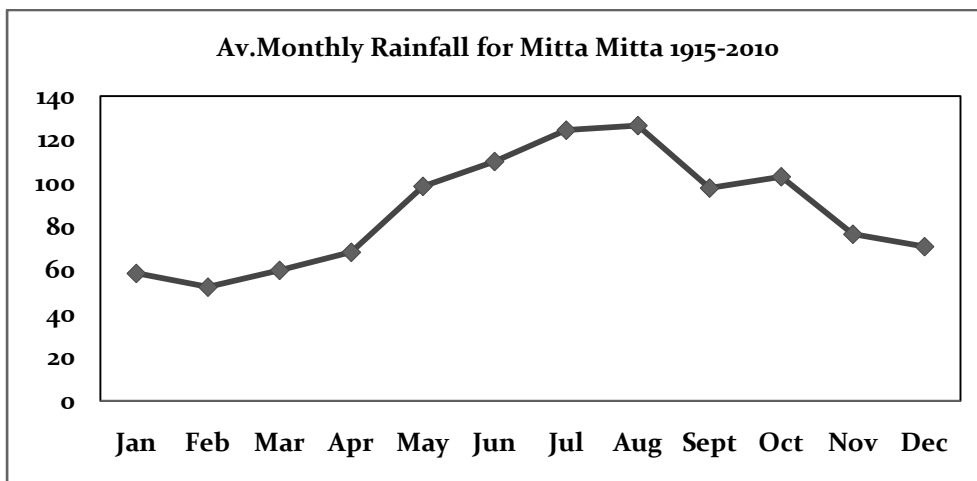


Figure 5.
Rainfall Data
Mitta Mitta
Valley

Source: Russell
Kelly, Mitta
Mitta

Table 1 summarises historical rainfall data for the region.

Table 1. Median Annual Rainfall and Mean No. Days ≤ 1 mm

Area		Period		
		1941 -1970	1971 -2000	1981 - 2010
Hume Reservoir	Rainfall	699 mm	777 mm	734 mm
	No. Days ≤ 1 mm	89	84	80
Corryong	Rainfall	781	-	848
	No. Days ≤ 1 mm	94	-	94
Wangaratta	Rainfall	644	628	595 (1987 -2010)
	No. Days ≤ 1 mm	84	78	76 (1987 -2010)

Source: BOM Climate Statistics for Australian Locations

The average number of days with less than 1mm rain, experienced in the North East Alpine Valleys region since 1981, follows the pattern of earlier times. The recent dry periods appear to be a combination of normal seasonal variations but it is also likely that climate change impacts are also at play, exactly how much is impossible to say.

The expectation is that there will continue to be significant variation in rainfall between years at the same site. and variation between sites within the same Valley. ONFARM Consulting data collected on 18 dairy farms throughout the Alpine Valleys has indicated a rainfall range from 250mm to 1200mm between years and farms. All this must impact on the structure of grazing enterprises, particularly stocking rate, and their pasture and forage production system.

In regard to water from irrigation systems, in areas linked to the Murray System the landowners are restricted and regulated, and it is likely that all systems will become more so in the future. The result has been to raise the question of whether it is justifiable to maintain capital invested in water or sell capital and buy temporary water. An indication of the impact of reduced water allocations is the fact reported by Dairy Australia that in 2008/2009 only 38% of land established for irrigation was actually irrigated.

In regard to this report the evaluation of the potential to increase milk supply is based on a dry-land pasture based system, since on many North East dairy farms the irrigation contribution to production is limited, and it is unlikely that irrigation areas or quantities of water will increase in the future.

In summary the North East Alpine Valleys region has a very wide range of rainfall and soil type conditions but it has been possible for the owners of dairy and grazing enterprises to adjust the profile of their enterprise in relation to their physical situation. There is no reason to suggest that this should not continue to be the case in the future.

4. DAIRY INDUSTRY PROFILE

4.1 Australian Dairy Industry

The North East dairy farms contribute to the Australian Dairy Industry and it is worth including some key facts and looking at the “health” of the industry:

- Around 1.8 million dairy cows on 7800 dairy farms produce 9.1 billion litres of milk.
- The Australian dairy industry is largely pasture based and average production per cow is 6024 litres in Northern Victoria and the Riverina.
- Dairy is Australia’s third largest rural industry with a farm gate value of over \$.4. billion dollars.
- Dairy is one of the largest value added rural industries, with \$9.2 billion in post factory sales.
- The industry directly employs some 40,000 people on farms and in processing.
- Australia is the world’s third largest dairy exporter, accounting for 11% of global dairy trade.
- Half of Australia’s milk is exported in the form of dairy products such as milk powders, cheese and butter to over 120 countries.

The following table indicates the distribution of dairy farms within the Australian industry and most importantly the reduction in farm numbers in recent years.

Table 2 *The Australian Dairy Industry – Farm Numbers* (Source: DA Outlook Survey)

Location	2009	2006	% Change
Northern Victoria and Riverina	1940	2441	- 20.5
Western Victoria	1530	1768	-13.4
Gippsland	1720	2030	- 18.0
Tasmania	445	531	-4.2
South and Central NSW	580	520	+ 10.3
Northern NSW and Qld	990	1050	- 5.7
Far North Queensland	80	96	- 16.7
South Australia	320	381	- 19.0
Western Australia	175	270	- 35.0
Total	7780	9087	- 14.4

The major reduction in Victorian regions has been in the traditional irrigation districts of Northern Victoria, due to a reduction in irrigation water availability, in conjunction with a 25% decline in milk price between 2007/2008 and 2008/2009 plus high input prices.

According to a recent Dairy Australia Outlook Survey, the milk price decline has affected the long term plans of 61% of that region's dairy farmers. Dairy farmers are now evaluating the following issues:

- The long term situation of water availability.
- The impact on the cost of producing milk (and hence on a minimum acceptable milk price) on changes to production systems.
- The complexity introduced to dairy production systems, and the additional skills required to operate a profitable business.
- The assessment of operational profit and capital growth in this new environment. Previously some farmers may have accepted a low operational profit since the capital value of the business (land and water) was increasing. These increases are less certain into the future.

Given that the major Northern irrigation districts are close neighbours to the Alpine Valleys, the situation developing there will no doubt impact on the future development of the industry within the Alpine Valleys region. The profile of dairying in both these regions is likely to change.

Overall, the profile of the 2009 Australian Dairy Industry is best summarised in the Dairy Australia Outlook and Situation Report Summary:

“Dairy farmers have taken on more debt in recent years to either fund expansion or for additional funds for working capital. Balance sheets are now under pressure on many dairy farms as a result of the increased liabilities and static or decreasing asset values –including land, cows, and irrigation water. The ability or willingness of farmers to extend their debt, or to realise the value of their assets as well as their personal and family commitment to continue dairying are the key factors being weighed up now and over the coming year.”

It should be emphasised that this outlook was compiled four months after a historic mid-season “step-down” of milk price as a result of the global financial crisis and the industry position at the time of writing this report could be described as **“recovering with caution”**.

In addition, obviously there is no “generic” dairy business; they exist with various strengths and weaknesses. The recent decline in the industry has highlighted that there are specific characteristics of dairy businesses that provide resilience or expose them to risk. Good dairy farmers in the Alpine Valleys region have clearly identified these characteristics.

4.2 Alpine Valleys Dairy Industry Profile

The Alpine Valleys Dairy Industry is often aggregated with the Northern Victorian industry but actually operates with quite different production systems, often more closely resembling Gippsland or the Western District rather than Northern Victoria.

Dairy Food Safety Victoria is currently updating “active” or supplying farm numbers in the Alpine Valleys region but it is estimated that there are about

- 210 dairy farms (milking 182 cows each)
- Supplying approximately 1 million litres and 78,600 kilograms of milk solids (combined Butterfat and Protein) each
- To 6 sites and 5 companies.
- The Alpine Valleys dairy profile consists of family farm businesses some of which employ labour.

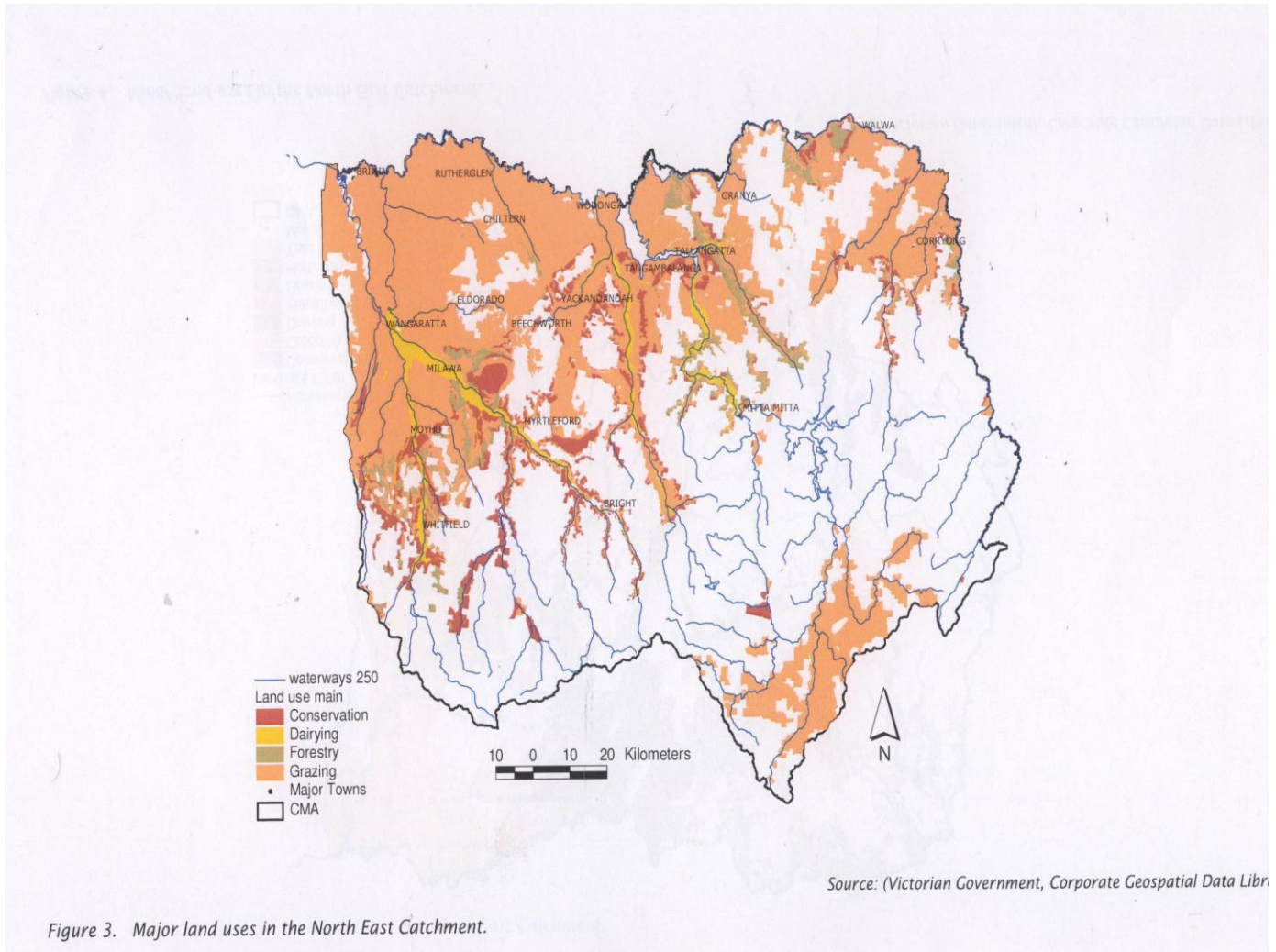
Figure 6, from the DPI Agricultural Resources report, depicts the locations where dairying is the major land use activity within the Alpine Valleys Region as at 2008. Dairy farms occur mainly along the floodplains of the major rivers

In economic terms, based on 5 year average milk price, each of these farms receives and injects approximately \$420,000 into the Alpine Valley communities or a collective \$88 million from milking 38,220 cows.

To generate this level of income from beef breeding/vealer production would require 220,000 calving cows. In regard to income generation, the dairy industry is approximately 5.5 times greater per cow than the beef industry.

The average size of 182 cows compared to 279 cows in other regions. The region has not attracted the large scale and corporate dairies seen in other districts.

Figure 6. Locations in Alpine Valleys where dairying is major land use activity



4.3 Factors Affecting the Current Alpine Valleys Dairy Industry Profile

The previous section indicated a relatively small number of farms generally milking a smaller number of cows situated along the flood plains. Dairy farming generates a relatively high income compared with grazing, so why does the North East dairy profile look the way it does?

External factors (beyond the operators' control) and internal factors (unique to the farm business such as land area, skill level, facilities, and cow numbers) work to influence the profile of a typical dairy farm in the North East.

The critical external factors that influence production are seasonal conditions, milk price, and the price of inputs such as grain and hay.

As indicated previously the seasons can be particularly variable both within and between valleys. Table 3 indicates the changes experienced in milk and input prices over the last ten years. Seasonal variation is reflected by pasture consumption data.

Table 3. Ten Year Milk Price / Input Price/Pasture Consumption Rates for the Alpine Valleys Region

Year	Milk Price		Grain	Fodder	Pasture Consumption
	\$/kg MS	c/L	\$/T	\$/T	T DM/ha
2000/2001	4.30	32.0	150	120	4.4
2001/2002	4.69	34.9	210	160	4.3
2002/2003	3.52	26.2	240	230	3.4 *
2003/2004	3.70	27.5	195	190	4.6
2004/2005	4.30	32.0	170	180	4.5
2005/2006	4.53	33.7	200	200	4.1
2006/2007	4.30	32.4	278	270	2.5*
2007/2008	6.54	50.0	380	270	5.4
2008/2009	4.90	36.5	300	270	5.3
2009/2010 (est)	4.60	34.2	190	200	5.9

* Drought

Source: ONFARM Consulting data

In summary, the industry is volatile; the response by farmers in the North East is to establish stocking rates that minimise risk but also allow the opportunity to exploit times of high milk prices, low supplement prices and favourable seasons.

It could also go some way to explaining why dairying is confined to the areas it is – soil type and water availability along the floodplains help combat some of the seasonal variations.

The volatility of the industry both in terms of input prices and seasons is also reflected in the equity levels seen on Alpine Valleys dairy farms. Average equity of ONFARM clients in the North east is 78% compared to 68% for Gippsland clients, reflecting the need in the North East to have a lower risk profile.

In regard to risk management, it is also interesting to note that, amongst ONFARM clients, only 25-30% of Gippsland clients use Farm Management Deposits (FMD) in good years, whereas in the Alpine Valleys it is 75-80%. Dairy farmers in the Alpine Valleys are used to seasonal variations so are conservative in good times and operate at higher levels of equity than in higher rainfall areas of Victoria.

5. PROFITABILITY OF GRAZING ENTERPRISES IN THE NORTH EAST

Depending on the outcomes of this study, there may be potential to encourage existing farmers to make a land use change as well as attract new investors in dairy farming in the region. In 2001 Ada, as reported in the DPI *“Agricultural Resources in North East Victoria”* report, recorded some broad attitudes of North East landholders to land use change:

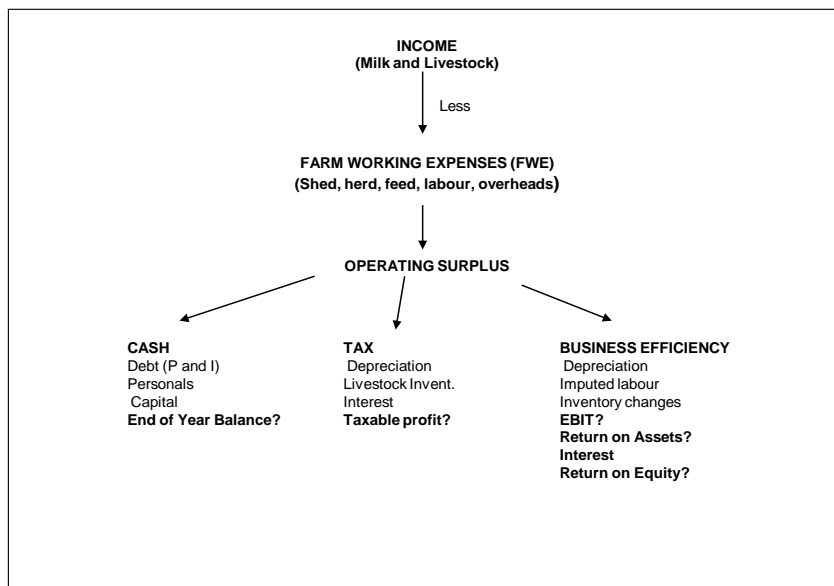
- Landholders showed some support towards potential land use change, partly for diversification but also to provide opportunities for the younger generation.
- A new enterprise would have to have strong advantages such profitability, low risk, and compliments existing lifestyle choices.
- Leasing or sharefarming land appeared to be more appealing than selling land.

The factors that will determine the level of dairy production and in particular the number of dairy businesses in the Alpine Valleys are varied and not just economic, however the comparative economics between dairy and alternative grazing enterprises will remain a major factor.

5.1 Definition of Profitability

When discussing the profitability of an enterprise it is critical to define “profit”; it often has different meanings to different people. Figure 6 indicates the difference between a “cash” interpretation of profit compared to “tax profit” and “business profit”.

Figure 7. Three Ways of Looking at Profit



Cash flow and net cash position is a critical aspect of any business (cash is king!) but does not necessarily correlate with tax profit or business profit.

Unfortunately, the majority of dairy farmers do not calculate or focus on business profit, which is unfortunate, as the author considers this to be the most revealing. These calculations involve imputed figures on labour and depreciation and are sometimes unfortunately perceived as not being “real”.

Many farmers do however identify with the concept of operating surplus which can be defined as the surplus remaining after the production process of the business (Farm income less farm working expenses).

Informally, a farm business might be deemed “profitable” by the farm owner if the business allows all debt to be serviced, reasonable personal drawings to be paid, and each year the net assets of the business owner have increased either due to the operational profit of the business or capital growth or both.

In the following comparative evaluations the economic parameters of the business that will be considered include:

- Earnings before interest and tax (EBIT).
- Return on assets (ROA) which is EBIT expressed as a percentage of total capital invested in the business.
- Operating Surplus which is the surplus after all production costs but before personals, tax, and capital expenses.
- Budget Surplus defined as all income and expenses on an accrual basis.
- Equity which is the Owner’s net worth as a percentage of the total capital of the business expressed as a percentage.
- Annual debt servicing per cow or kilogram of milk solids, this is an indication of the level of annual financial commitment of the business to lenders.

* The dairy budgets used in this report have the majority of loans being paid on a principal and interest basis.

5.2 Alpine Valleys Dairy Profitability and Production Costs Relative to Other Regions of Victoria

ONFARM Consulting comparative data between Gippsland and the Alpine Valleys is presented in Table 4. In addition, the Department of Primary Industries (DPI) conducts the Dairy Farm Monitor Project in which data from 73 Victorian Dairy Farms is analysed. This data is presented in Table 5. The farms who participate in these types of

activities are not a “random sample”. They are usually high performing and have good financial records. Good financial record keeping is often correlated with better farm business performance in both dairy and grazing.

Table 4. Comparison of Gippsland Client Performance Data and Alpine Valley Client Performance Data

	2004/2005			2005/2006			2006/2007			2007/2008			2008/2009		
	ROA %	FWE per kg MS	Capital Structure	ROA %	FWE per kg MS	Capital Structure	ROA %	FWE per kg MS	Capital Structure	ROA %	FWE per kg MS	Capital Structure	ROA %	FWE per kg MS	Capital Structure
Alpine Valleys															
Av	7	2.52	5,962	4	3.02	5,815	-5	4.40	6,029	11	4.17	8,050	3	4.14	8,800
Top 25%	11	2.32	5,400	8	2.76	5,415	-1	3.87	5,680	15	3.61	7,650	6	3.67	8,520
Gippsland															
Av.	11	2.55	6,190	9	2.77	6,300	1	3.23	9,200	11	3.87	10,345	4	3.65	11,111
Top 25%	15	2.25	5,800	12	2.44	5,950	5	2.96	8,700	16	3.62	10,132	7	3.41	10,681

Source: ONFARM Consulting Annual Performance Analysis

Note: Land values used by ONFARM Consulting are estimates by owners; in reality values may be 10-20% below the stated figures. Capital structure values also include irrigation water value.

Table 5. Profitability and Production Costs in Northern Irrigation Areas Compared to Other Regions

Region	2006/2007			2007/2008			2008/2009		
	ROA %	FWE* /kg MS	Capital** Structure	ROA %	FWE /kg MS	Capital Structure	ROA %	FWE /kg MS	Capital Structure
North***									
Av.	- 1.6	4.84	6,380	8	5.53	7,442	3	4.55	7,187
Top 25%	6.0	4.04	5,527	12	4.70	7,173	10	4.14	7002
Gippsland									
Av.	- 2.1	3.42	8,153	10	4.09	7,815	4	3.79	10,501
Top 25%	1.8	3.00	10,466	16	4.03	6,964	7	3.19	16,380
South West									
Av.	1.0	3.76	8,419	11	4.30	8,763	4	3.85	10,306
Top 25%	5.5	3.19	10,171	15	3.97	9,994	8	3.50	10,846

Source: DPI Dairy Industry Monitor Project Data

* Farm Working Expenses: Herd, shed, feed, overhead costs but not debt/personals

** Capital structure: Land value per milking cow

*** North data includes three farms from NE out of total of eighteen.

There will be slight variations between the two data sources in relation to imputed labour figures but it is still reasonable to compare the two. The Northern figures contain only three Alpine Valley dairy farms of a total of 18-24 so are more indicative of the Northern irrigation districts than the Alpine Valleys region. The ONFARM Consulting Data is based on fifteen Alpine Valleys farms.

The summary of the trends in this data indicates:

- The top 25% of farmers consistently generate profits in all regions. This reflects the intuitive ability of this group to consistently make correct and timely management decisions.
- The cash costs (farm working expenses per kilogram of milk solids) in the Alpine Valleys are on average \$0.26 per kilogram higher (9%) than Gippsland and \$0.08 per kilogram higher (3%) than the Western region.

This can be attributed to the higher proportion of feed pasture which is conserved rather than directly consumed by cows in the Alpine Valleys compared to the other two regions because of a shorter growing season/longer dry in the North East.

- In contrast the cash costs in the Alpine Valleys are on average \$0.67 lower (15%) than in Northern Victoria.

This reflects the high proportion of purchased and processed feed in the North compared to the North East. The farm working expenses per kilogram of solids is an indication of the resilience of a production system.

- The Return on assets in the Alpine Valleys is comparable with Gippsland and Western Victoria but more variable due to seasonal conditions.
- Capital structure or land and water value per milking cow is highest in Gippsland and Western Victoria and lowest in Northern Victoria. This is not surprising considering the situation with land and irrigation water values on Northern Victoria. The potential for capital growth (part of the reason to farm!) is minimal in Northern Victoria. The Alpine Valleys indicate a 20 percent lower land or water capital investment per cow than Gippsland or the Western district.

In The Alpine Valleys region there has been an average capital growth rate of 4.5% per annum (Indigo Shire data) and this would definitely not be as rapid in the Northern Irrigation areas. It is reasonable to assume continued strong capital growth of land in the future.

The figures suggest that, in regard to dairy profitability and sustainable production costs, the Alpine Valleys region is competitive (but perhaps more variable) with Gippsland and the Western district.

Of course there are sub-regions within each of these dairy areas with different levels of seasonal risk and production system complexity. For example, there is a dramatic difference between dairy farming in the upper regions of the Kiewa Valley compared to rising country at Yackandandah. In the Western District the equivalent comparison may be Timboon versus Hawkesdale.

5.3 Alpine Valleys Dairy Profitability Relative to Other Grazing Industries Within the Region

There are broad ranges of profits within each enterprise but the trends are quite clear as indicated in Table 6.

Table 6. Profitability of Dairying Compared to Grazing

	ONFARM Consulting Data (Dairy)		DPI Farm Monitor Project (Sheep) Small sample		DPI Farm Monitor Project (Beef) 4 farms	Case study farms visited/contacted (5 farms)	
	ROA %	OS*/ha	ROA % Av.	ROA% Top 25%	OS/ha	ROA % 5 yr av	OS/ha
2004/2005			1.1	4.0			
2005/2006	4.2	917	1.5	3.4			
2006/2007	- 5.0	195	0.2	4.0			
2007/2008	11	1,517	2.4	7.6			
2008/2009	3.1	776	0.3	3.5			
Average	3.3	851	1.1	4.5	179	1.2	229
Top 25%	7.0	1,151					

*OS = Operating Surplus

The data indicates that a good dairy enterprise will generate a more variable return on assets, but average 7.0% ROA compared to a good grazing enterprise which will average 4.5% (small sample size). Enterprises not in the top 25% will average 3.3% for dairy and 1.1% or lower for grazing. These figures have allowed for the extra capital and labour required in a dairy enterprise.

The most significant figure, which would be appreciated by a family farming situation, is that, on average, to generate an operating surplus of \$60,000 for personals, debt servicing, and capital expenses in a dairy enterprise a farming area of 60 - 80 hectares would be required compared to 250-300 hectares for a grazing enterprise. Even if the grazing enterprise managed to achieve top 10% performance, an area of 150 – 200 hectares would be required.

There is no doubt that, in general, a dairy enterprise is considerably more profitable than grazing enterprises.

The data presented above explains the following comments said to the author of this report during discussions:

“If I had debt or the son came home then I would have to milk cows”

“We reached the point where the cows and calves were just not doing the job and there was too much unknown, so after 15 years out of dairying we borrowed some money and went back milking cows”.

Irrespective of the comparison with dairying, a major concern for the Alpine Valleys in the future is the social and economic adjustment which will have to be made by landholders operating grazing enterprises, unless they are in the top 5 - 10%, have no debt, or have very large scale or off farm income.

The “symptoms” of an enterprise in decline include: declining livestock inventories to assist immediate cash flow demands, reduced inputs such as fertiliser, and government support income such as Centrelink. The majority of grazing enterprises appear to be supported by off farm income.

The issue of rapid land ownership turnover has already been highlighted by Curtis and Mendham in 2007:

“Large scale and increasing rates of turnover were identified, with 50% of properties in our case study predicted to change ownership in the next decade, double the previous rate. New property owners are significantly different from longer term landholders”.

In addition it is equally important to identify those grazing enterprises that are achieving higher rates of return, and assess the repeatability of the profit and the characteristics of the enterprise.

6. ALPINE VALLEY EXAMPLE DAIRY AND GRAZING FARM PROFILES

The general relative profitability of grazing compared to dairy has been established using DPI and ONFARM Consulting collective data. Now this section seeks to refine the comparison further by starting with 350 ha of land in the Alpine Valleys region and investigating the probable financial outcomes when it is used for either grazing or a dairying enterprise.

The budgets produced contain a number of assumptions; those used in assessing dairy performance have been based on the concept of what a “well managed, balanced” dairy business looks like.

Over recent years, as a result of variations in external factors such as milk price, input price, interest rates and seasonal conditions, a description of a robust, resilient, adaptable, dairy business in a pasture based area has emerged from analysis of client situations and data. These can be viewed as the “bricks” in the dairy business tower:

- 3-4 tonnes of pasture or forage dry matter per cow directly from the milking area, and no more than 30% of this re-processed as silage or hay since this increase the costs of feed. Feed grazed directly by cows will generally be the cheapest feed in a pasture based system.
- Purchased imported feed should be less than 40% of total feed consumed.
- Equity in the Alpine Valleys area should be greater than 70 % with no more than 25% of debt as short term debt (less than 7 years) since it is short term P&I type debt that drains cash flow in tough years. Debt servicing per year (including all principal, interest and lease payments) should be below \$450 per cow or \$1.00 per kilogram milk solids.
- Paid labour at less than 40% of the total value of labour used on the dairy farm means that in tough times there is still an ability to “tighten the belt” by the farm family.
- The tower is underpinned with the foundation brick of good management skills.

The tower is not about “wrong or right” it is about balance and risk in a business. If there is 100% paid labour then this must be balanced by a higher level of equity or more self-contained feed or both.

In the irrigation districts of Northern Victoria the pasture based system has been under threat and there are capital issues to seriously consider. However, any quantitative assessments completed by the author of this report indicate that feedlot systems and

semi-feedlots have a higher cost of production and higher risk profile which does not offset the lower capital costs of establishment and reduced land area.

As explained previously, the “examples” in this section comply with the dairy business tower and are based on observations of actual achievements by individual businesses within the dairy industry. However it must be emphasised that there is a huge range of dairy farm businesses and methods to convert from grazing to dairy. The farms described in this section are not intended as recipes - they are examples.

6.1 Typical size well managed dairy farm - does size matter?

Before investigating the alternative land uses for a 350 hectare grazing property in the Alpine Valleys region but it must be stressed that there are many entry levels and methods.

Prior to developing this larger farm model, consider a typical size well managed dairy in the Alpine Valley region with the following physical and financial characteristics (see Attachment 1.1 to 1.3 for a detailed budget).

WELL MANAGED, AVERAGE HERD SIZE DAIRY FARM IN THE NORTH EAST

Description

- 182 ha land of variable quality (Value \$7,417/ha or 450 acres at \$3,000/acre)
- No irrigation
- No typical heavy flats
- Family operation with about 15 hrs/wk additional paid labour

Physical Parameters

- 180 cows producing 510 kg milk solids/cow (6,700 litres)
- Feeding
 - 1.7 tonne concentrate (purchased)
 - 0.3 tonne high quality hay (purchased)
 - 0.2 tonne lower quality hay (purchased)
- Externally sourced feed represents 34% of total feed consumed
- Pasture consumption: 4.6 T/ha or 4.3T/cow (incl. young stock)

Financial Parameters

- Total assets: \$1.732 million
- Total liabilities: \$385,000
- Equity: 77.8%
- Debt servicing/cow/year: \$ 311
- All loans P and I

Financial Performance

- At long term milk and supplement prices (\$4.52/kg MS, \$255/T grain, \$220/T high quality hay, \$160/T lower quality hay):
 - Budget surplus/deficit (Can I pay the bills?): \$24,698 after drawings of \$45,000
 - Operating Surplus (amount left to live, pay debt ,tax, capital: \$148,161 (\$823/cow or \$887/ha)
 - EBIT –Earnings Before Tax and Interest (Is my business efficient/):

Operating surplus less imputed labour valued at \$95,000 less depreciation of \$19,290 = \$33,871 or 2.0% return on capital excl capital growth

In regard to return on assets, size is an issue here, because the farm is not producing enough for one family assisted by some external labour to dilute the imputed labour of \$95,000 (Mum, Dad and kids).

If this farm moved to Top 25% performance and increased cow numbers from 180 to 220 without introducing additional risk, it could perform in a similar manner to the following ONFARM Consulting client (actual data) on rising country in the North East (\$2,300/acre or \$5,681/ha) presented in Table 7.

Table 7. Performance of ONFARM Consulting Client on Rising Country

	Operating Surplus/cow	EBIT/cow	Return on Asset %
2006/2007 (drought)	\$306	- \$241	- 4
2007/2008 (best)	\$2,006	\$1,433	15.4
2008/2009 (disrupted)	\$943	\$495	6.4
2009/2010 (anticipated)	\$950	\$426	4.0

The conclusion is that you do not have to be big to generate a profit in dairy farming.

6.2 350 hectare grazing enterprise

In this scenario the 350 ha is set up for use as a grazing enterprise; it has a house, reasonable grazing facilities and shedding. Physically it consists of the following land types (with estimated values):

- 50 Ha of hill with limited grazing potential \$2,000/Ha.
- 100 Ha of rising country with useful grazing \$7,000/Ha.
- 200 Ha of valley flats with high productivity \$10,000/Ha

This adds up to a total value of \$2,800,000 or \$8,000 per hectare (\$3,237 per acre). This is consistent with values of recent sales but would be below landowner estimates.

Water supply is via small but high flow spring fed dams and some troughs connected via a 25mm line.

The enterprise chosen for the comparison is a beef operation with 277 autumn calving cows and calf sales at 380 kg liveweight. A detailed farm budget is contained in Attachments 2.1 and 2.2. The farm would generate 447 kg of liveweight sales per hectare, which would be in the highest 25% of the Alpine Valleys region, as is the pasture consumed at 4.2 tonne of dry matter per hectare. The critical issues to consider from the budget are:

- The operating surplus of \$58,459 (\$211 per cow or \$216 per Ha or \$88 per acre) is the amount remaining to pay personals, tax, and capital. It is assumed that there is no debt. The operating surplus achieved is below a rental figure that could be obtained in renting some or all of the property to a dairy enterprise.
- The EBIT is \$13,159 or 0.42% Return on assets.
- Total working expenses are \$151,835. This would be regarded as a reasonably high input /output grazing enterprise.
- In a tough year such as 2006/2007 the business would operate at budget deficit of \$-46,932 but would be supported by Government assistance. It would enter the following year with reduced numbers.

In summary, the business is viable from the owners' perspective, in that it is achieving their objectives, but it is a low return considering their management skills and land base. This business would struggle to service debt of a significant size.

6.3 An existing 350 hectare dairy farm enterprise

In this case the 350 hectares is an operating dairy farm with 85% of the area as high quality land.

- A value has been used of \$3,250,000 or \$9,285 per ha (\$3,759 per acre). This reflects recent sales or attempted sales.
- It allows \$1285 per ha (\$520 per acre) differential between the grazing property and the established dairy. This does not reflect the cost of conversion, simply the added value.
- The dairy farm complies with the dairy business tower and has total liabilities of \$1,201,200 or 70% equity.
- Agistment /lease for rising two year olds is utilised as required.

Given the level of variability that can occur within this 350 hectare dairy business (depending on season, milk and input prices), the following scenarios were investigated:

- A top 25% performance milking 360 cows on this farm.(Att. 3.1 – 3.3)
- A reasonable typical performance milking 300 cows. (Att. 3.4 – 3.6)
- The best combination of external conditions the industry has experienced- 2007/2008 there were very high milk prices and input prices and the season was reasonably good.
- The worst combination of external conditions was in 2006/2007 with a moderate price high input prices and a very poor season with virtually no spring.

Table 8 provides a summary of the key issues from these scenarios but the budget details are presented in attachments.

Table 8. What does the Dairy Industry Encounter? Performance of 350 ha in Range of Conditions

	Average Price And Season		Best (2007/2008) High price/good season		Worst (2006/2007) Moderate price/poor season	
	Top 25%	Reasonable typical	Top 25%	Reasonable typical	Top 25%	Reasonable typical
Cow No.	360	300	360	300	340	275
Milk Price	4.67	4.67	6.70	6.70	4.30	4.30
Production kg MS/cow	549	432	559	452	499	369
Pasture T DM/ha	5.5	4.2	5.8	4.6	3.6	3.0
T DM/cow	4.1	3.8	4.4	4.1	2.9	2.9
% Energy Imported	34.7	30.7	31.7	26.7	53	45
Grain/cow T	1.75	1.5	1.65	1.4	2.2	1.7
Purchased fodder/cow	0.49	0.2	0.4	0.1	0.9	0.7
Dry stock feeding	Medium	Medium	Low	Low	High	High
Budget surplus	107,549	36	365,305	185,607	- 41,263	- 131,850
Operating surplus						
Farm	354,528	201,929	685,382	440,466	160,625	49,033
Per cow	985	673	1,904	1,468	472	178
EBIT						
Farm	187,458	34,859	518,312	273,396	- 6,445	- 118,037
Per cow	520	116	1,349	911	0	- 1.20
Per ha	535	99	1480	781	- 18	-337
Return on Assets	4.7%	0.9%	12.4%	6.7%	- 0.2%	- 2.9
Equity%	70.1	69.2	70.1	69.2	70.1	69.2
Annual debt servicing						
Per cow	368	442	368	442	390	482
Per kg MS	0.70	1.00	0.70	1.00	0.80	1.30
Farm Working Expenses \$/kg MS	3.11	3.39	3.52	3.72	3.63	4.18

(Note: Imputed labour allowance on these farms of \$137,070 used to calculate EBIT)

Table 8 clearly indicates the concept of risk and return; the farm business, if managed to top 25%, will vary from 12.4% ROA with a budget surplus of \$365,305 to a -0.2% ROA and a budget deficit of \$-41,263. If managed as a “reasonable/typical”, and more conservatively it will vary from 6.7% ROA with a budget surplus of \$185,607 to -2.9% ROA and a budget deficit of \$-131,850.

Table 9 provides “real world” historical client data that supports the estimated returns on the example 350 ha farm.

Table 9. *Real World vs Modelling*

	ONFARM Consulting Client Data						DPI Dairy Farm Monitor Program (3 yrs and 3-5 farms)	
	5 Yr Av		Best 07/08		Worst 06/07		Best 07/08	Worst 06/07
	Top 25%	Gr Av.	Top 25%	Gr Av	Top 25%	Gr Av		
Return on Asset %	8	4	13	11	0.8	-5.0	12	-5.0
EBIT/cow	699	366	1,770	1,042	87	-383	1,406	- 512
FWE/ kg MS	2.87	3.66	3.42	4.17	3.54	4.39	4.36	4.20
Operating Surplus/cow	1,067	860	1,930	1,508	509	186		

In summary, when the 350 hectares is used as a dairy farm, with 71% equity and \$1.2 million debt, it is able to service the majority of debt P & I, draw personals and tax at \$58,676, allow \$10,725 on capital (shares) and still be cash neutral. If the business is in the top 25% then there is a budget surplus of \$107,549 given a reasonable season and long term average milk price.

6.4 A conversion from grazing to dairy 350 hectare enterprise

It has been established that in general a dairy enterprise, when well managed, is able to generate higher profit levels and enable higher drawings than a grazing enterprise. These are general figures and there would obviously be very well managed grazing properties more profitable than a poorly managed dairy farm. Good farmers will be profitable in most industries unless the fundamentals are out of balance completely (prices for outputs relative to prices for inputs).

A simple figure of \$700-\$1,000 per milking cow retained as operating surplus after farm working expenses compared to \$200-300 per cow in grazing highlights the difference. However if in converting from grazing to dairy the debt servicing on capital expenses to fund the conversion increases by \$400 -\$500 per cow then irrespective of EBIT or ROA% changes the family operated business will be in a worse cash position than previously.

The key to conversions is minimising the cost and correctly structuring debt. There have been many successful conversions and probably an equal number which end up

being under-funded and seeking additional funds on short term debt demanding high P & I payments which drains cash flow.

To provide a guide to the cost of conversions is extremely difficult as indicated by the following examples over the past year:

- High rainfall Victoria: 600 cow complete conversion on 356 Hectares from grazing to dairying, but reasonable pastures were present. Conversion cost \$5700 per hectare (\$2307 per acre). Farm could milk 700 cows in the future. This included sophisticated dairy 60 unit rotary, large vat capacity etc. Estimated equity level now is 41%.
- High rainfall NSW: 900 cow complete conversion including major pasture renovation on 500 hectares. Conversion cost \$7163 per hectare (\$2900 per acre). This included facilities to milk 1200 cows. Fixed price milk contract 50% higher than current exporting processor price.
- Alpine Valleys smaller scale 150-160 cows 148 hectares conversion back to dairying after 15 years of non- milking. New dairy site, some old laneways salvageable, second-hand milking plant, vat etc. Conversion cost of \$2026 per hectare (\$820 per acre) Equity now 77.5%.

These examples highlight the need to carefully assess each situation, but invariably conversions operate at 10-20% above the best budgeted figures. Converting is a skill in itself. Some operators have the ability to greatly reduce conversion costs by assisting the process, and by accessing high quality second-hand equipment. They farm in a very similar manner and often get the same annual result at lower cost.

Attachments 3.7 to 3.8 provide an estimate of converting the 350 hectare reasonably well managed beef property described in Section 6.2 into a dairy farm, and then perform at similar levels to the budgets presented in Section 6.3 milking 300 to 360 cows.

The figures are based on a 35 unit swing over dairy with enough sophistication to enable minimum labour requirements. The estimates are based on a recent construction of a similar dairy in Gippsland. A rotary dairy was not considered because it is unlikely that the farm will milk more than 360 cows in the future. If there was significant potential to milk more in the future a rotary would have been considered but the capital costs would have increased by an additional \$480,000.

The attachment has estimated two levels of conversion a “bare bones” type approach seeking high quality second-hand equipment, assisting, and monitoring. In addition, a

more expensive “new” conversion has been completed but this is by no means the highest level.

The dairy Industry is very good at insisting on “building for the future” with all the latest technology because the “cash flow is so strong and regular”. It must always be remembered that it is fine to plan for the future but someone has to pay for the capital in the present.

An interesting and concerning trend in the industry has been the shift away from servicing farm debt regularly on a principal and interest basis, not just interest only. This has been because the level of capital expenditure and hence debt has not allowed substantial principal reductions. These factors have been taken into account in the estimates for conversion on the 350 ha grazing property to dairying.

Table 10. Conversion Costs for 350ha

	Average Conversion	Bare Bones/ Second hand
Total Infrastructure cost	\$1,166,166 (\$3,332/ha)	\$636,095 (\$1,817/ha)
Total pasture costs (if required)	\$110,120 (\$315/ha)	\$110,210 (\$315/ha)
Total farm conversion cost	\$1,276,286 (\$3,647/ha) (\$1,475/acre) (\$1,916/grazing acre)	\$746,215 (\$2,132/ha) (\$863/acre) (\$1,120/grazing acre)
Borrowing required depending on existing stock, plant equipment	\$1,750,286	\$1,068,215
Capital (land and infrastructure) position:		
Initial total value	\$2,800,000 (\$8,000/ha)	\$2,800,000 (\$8,000/ha)
Additional capital spent	\$1,276,286 (\$3,646/ha)	\$746,215 (\$2,132/ha)
Total land value/price required to cover additional expenses	\$4,076,286 (\$11,647/ha) (\$4,712/acre)	\$3,546,215 (\$10,132/ha) (\$4,100/acre)

In regard to capital pasture production costs, it has been assumed that

- There was a significant requirement for capital phosphorous on the milking area,
- Lime on approximately 140 hectares.
- Some form of resowing was also incorporated into 140 hectares.

This totalled \$110,210 or \$408/Ha but in some cases may not be required. However a common observation with conversions is that the infrastructure often ends up over budget and restrictions are then placed on the pasture costs, which actually generates the milk.

The key issues that have been identified in regard to the conversion process are:

- The cost of conversion will impact on borrowings and debt servicing which will impact on cash flow of the business.
 - In the example, borrowings required will be between \$1 million and \$1.75 million depending upon the situation with mobile plant and livestock.
 - In the budgets completed in Section 6.3 the debt level was \$1.2 million with \$150,000 or 12.5% in short term 7 year P & I and the remainder long term with a proportion over 15 years.
 - Equity is 71.2%.
 - If the conversion cost is significantly greater than \$1.2 million then the farm MUST operate in the top 25% performance zone or accept that the ability to reduce debt will be limited. Lenders will also have to be aware of these aspects of the expansion. The ability to service the debt is reflected in the top 25% and good typical budgets completed.
- In regard to the additional capital spent on land and infrastructure:
 - A total of \$3,646 per hectare has been spent
 - It is likely that in the immediate short term only half of this would be retrievable via an increased farm value.
 - This means that if the base value was \$8,000 per ha and the extra was \$3,646/ha, a value of \$11647/ha or \$4,712 per acre would be necessary, which the market is not paying. A sale value of \$8,823/ha or \$3,976/acre would be more likely.
 - It would probably take approximately 4-5 years of capital growth at 5% per year to recoup the additional capital investment, which is a reasonable expectation.

- The Alpine Valleys region has been achieving comparable annual capital growth rates. These figures need to be considered against other potential investment growth. Figure 13 indicates how the EBIT of the business has changed relative to the additional capital actually spent.

Table 11. Change in Business EBIT Relative to Additional Capital Spent

Beef Position	Dairy Position
Total Assets: \$3,155,000 (See Attachment 2.2)	Total Assets: \$4,791,450 Land: \$4,076,450 Plant and stock: \$715,000
EBIT: \$13,159	EBIT (if between typical and Top 25%): \$111,158
ROA : 0.42%	ROA: 2.3%
Return on Additional Capital Change in EBIT: \$97,999 Change in <u>actual</u> capital invested: \$1,636,450 (\$4,791,450 - \$3,155,000) Return on additional capital = 6.0%	

- Table 11 indicates that
 - Under beef there is a large amount of capital returning a modest return 0.417%.
 - If as a dairy farm the performance can be between typical and top 25% then after spending \$1.6 million the return is still modest at 2.31%
 - But the additional capital is returning 6.0% , indicating that the new enterprise is utilising the old capital for a significant gain.
 - The additional capital is not retrievable for a period of 4-5 years. Consequently the operator of a grazing enterprise would not convert if there is any suggestion of a farm sale in the next 5-8 years.
- The skills required in converting to dairy cannot be under-estimated. However the sad aspect of the grazing industry is observing a good operator extract a minimal profit because of external factors, while the same skills applied in the dairy industry would achieve top 25% performance and profit.

If a reader of this report is considering a conversion they are advised to read the “Dairy Conversion” Warrnambool conference notes produced by DPI in September 2002

(Contact DPI Warrnambool). The figures are now out of date but the issues and discussion the same. Some comments from “Converters” at that conference include:

- *“Our major mistake was running out of money”*
- *“We should have gone for our optimum position earlier by borrowing a little bit more”*
- *“We should have renovated more pastures at the start and used a lot more annuals on the way just to grow feed”*
- *“Having a conservative budget so that all family members have confidence”*
- *“Seek out advice from a range of advisors who have been around for a reasonable period”*
- *“Don’t try and do it all yourself, but be smart with contractors”*

7. LAND VALUES AND PRODUCTIVITY IN THE ALPINE VALLEYS RELATIVE TO OTHER DAIRY REGIONS

Land values are affected by different variables in different areas. In the irrigation districts of Northern Victoria land value is now based on its productive ability and infrastructure; it is not linked to irrigation water values. In Gippsland, close to Melbourne or the coast, land values will be inflated due to the encroachment issues although sub-divisional limitations have slowed this process. How should the Alpine Valleys land be valued?

Earlier in the report, the land value was expressed as per cow and was competitive in the Alpine Valleys region with other dairying areas of Victoria.

Another approach is to link the capital value of a hectare to its ability to grow pasture which is then consumed (expressed as tonnes of dry matter consumed per hectare). This gives a measure of the efficiency of the hectare. See Table 12

Table 12. Comparing Land Value in Terms of Pasture Consumption

Land Type	Pasture Consumed/ha/year	Value \$/ha	\$/T dry matter/ha
High Rainfall Gippsland and South West (Not impacted by non-agricultural factors e.g. urban pressure)	9.5	\$17,500 achieved at sales	\$1,842
Expectation for NE (based on \$1,842/T DM)	River flats	12,894	\$1,842
	Lighter rising country	6,477	\$1,842

In higher rainfall areas (not being impacted by non-agricultural factors)

- Achieving sales of \$15,000 to \$20,000 per hectare with a pasture consumption of 9.5 TDM/ha is achievable
- This equates to \$1,579 to \$2,105 (average \$1,842) of capital investment per TDM.

In the Alpine Valleys region

- An expectation of 7TDM/Ha is reasonable from the productive river flats and 3.5 TDM/Ha on the lighter drier areas in the region.
- This would place a value on the flats of \$12,899/ha (\$4,550/acre), and on the significantly lighter rising country \$6447/Ha (\$2610/acre).

It is interesting to note that this is below the range of current sale values for land in the Alpine Valleys region. This again indicates that the value of land is competitive with other dairy regions of Victoria.

8. SUMMARY OF ECONOMIC RATIONALE TO EXPAND DAIRYING IN THE ALPINE VALLEYS REGION

The preceding sections have presented considerable data in relation to the dairy industry, state-wide and in the Alpine Valleys region, as well as the grazing industries in the Alpine Valleys.

There will be a small number (possibly less than 5%) of grazing enterprises that perform as well as a top 30% dairy enterprise. However, the trend is clear that the profitability of a dairy enterprise most often exceeds that of a grazing enterprise and there is a case for exploring and encouraging the expansion of dairying in the Alpine Valleys region.

Important issues to emphasise in relation to future dairying in the Alpine Valleys:

- While being climatically variable, the Alpine Valleys region will remain a pasture/ forage “rain-fed” region into the future (in some cases assisted by what irrigation is available).
- Compared to other dairy regions in Victoria, the region is competitive, having lower farm working expenses per kg milk solids than Northern Victoria and

slightly higher farm working expenses than the higher rainfall districts. Farmers in the irrigation districts of Northern Victoria will be assessing the relative merits of lower capital investment in land and water versus high working expenses in importing or growing and processing feed. There will be those who are comfortable with this semi-feedlot system and those who will seek to relocate to a more traditional pasture or forage based system such as that in the North East.

- The Alpine Valleys region appears to have an advantage in land and water capital cost per milking cow compared to Gippsland and South West Victoria (\$10,900 per cow in Gippsland and South West Victoria versus \$8,660 in the North East). This is probably due to proximity to Melbourne and coastal areas and more reliable rainfall.
- Overall, once established, a dairy business generates three times more EBIT than a grazing one. In regard to Operating Surplus available to service personals, capital requirements, tax and debt, this figure is more like 4 – 5 times as much. There are of course instances where an individual grazing enterprise is more profitable than an individual dairy one but this report is concerned with the general picture.
- The additional capital expenditure used to convert to a dairy will provide a return of around 6% and increase the return on asset base from 0.42% to 2.3%, in an above average situation and 6% if performance is in the top 25%.

9. POTENTIAL BARRIERS TO THE GROWTH OF DAIRYING IN THE NORTH EAST

The economic analysis is indicating that many grazing enterprises are struggling to cover farm working expenses and draw reasonable personals. Consequently the majority rely on off farm income. It seems logical that if an alternative enterprise was significantly more profitable then growth in the more profitable area should be observed.

But the issue is clearly not just about profit. For example, broiler production is consistently more profitable than both dairying and grazing and yet there is not a mass move towards this type of enterprise.

There are a number of potential barriers to expanding dairying in the Alpine Valleys.

- **Risk Profile.**

- Financial risk

- The cost of conversion often requires significant debt. For example, debt servicing may be \$132,000 per year – very daunting to someone who had none or little debt in their grazing enterprise.
- The conversion figures presented in the report can be the equivalent of 27 – 45 % of the initial land and infrastructure value. This is a very significant proportion of the “owned” asset and it would appear that only 50 - 60 % of this additional capital is recoverable in the short term.
- As stated earlier, if the cost of conversion is excessive and the borrowings for various assets too short term there will be no “cash” gain. The larger Operating Surplus generated in the new business (may be up to four times greater) will be cancelled out by the debt servicing.
- History shows consistent levels of capital growth in the North East so this expenditure can be offset by the capital gains.

- Input Variability

Most dairy farmers, as part of maximising profit, aim to purchase 20 – 40 % of the feed energy they require. This contrasts to 95% of grazing enterprises who often import no energy. The risk profiles are different. The dairy farmer spends on inputs to create a margin between product price and purchased input price. A grazing enterprise does not generally risk the expense to create the margin, because the margin, if it exists at all, is too small.

This situation is highlighted in the example farms presented in the report. The total beef farm working expenses (on a higher input beef farm) were \$151,835, whereas on the Top 25% dairy farm these were \$614,696. Irrespective of margins and business performance this fourfold increase in expenditure introduces a level of risk and size of expenditure that may not be acceptable to a beef farmer.

- **Land Values**

The data has indicated that land capital invested per milking cow is lower in the Alpine Valleys making it attractive. But this applies to existing dairy farms. When thinking about conversions the figures raise questions. If grazing land could be purchased at 50% of the value of a dairy farm with the same quality land then the additional capital invested would be completely covered and not at risk short term. It would appear that the same land used for grazing is worth 75 - 85% compared to the same land used for dairying. This suggests that beef land is over-priced relative to dairy. The value is not related to enterprise performance.

- **Individuals and Skills**

- Skills Required

The author of this report has been involved with individuals operating dairy enterprises in the Alpine Valleys for over twenty years. His observation is that the skills required to successfully operate a dairy farm in this region are higher than those required in the regions with more reliable and consistent pasture growth.

There are very good examples of a consistently profitable dairy enterprise operating on land with inherently low carrying capacity because the operator understands the environment in which they are operating. The profitable Alpine Valleys dairy farmer is constantly evaluating margins and monitoring stocking rate and input levels; timing and confronting risk are critical components of their success.

To quote an Alpine Valleys grazing consultant: *"...Dairy farmers seem to understand the concepts of spending to grow feed, then utilising feed and complementing it with supplements. The majority of grazing enterprises don't seem to have the same understanding, and even if they do, the risks are higher..."*

- Labour Requirements

In dairy farming there is a continuous labour demand which conflicts with the flexibility of a grazing enterprise. Despite the fact that a dairy farm with low debt and adequate personal is viable at 120 – 180 cows and the equivalent being 400 – 500 cow calf units, the beef farmer is very likely to find the dairy farm more onerous and in conflict with "lifestyle" objectives.

- Perceptions and Publicity

It is clear that unless the grazing enterprise is in the top 5-10% then profits are consistently low. However, in the dairy industry, as long as the enterprise is of average performance or above, there is significant profit (EBIT) to be made, in particular a high Operating Surplus, unless seasonal conditions are severe and milk price low.

Unfortunately, there seems to be a mindset that this shouldn't be publicised. There is a feeling that it's the exception rather than the norm and dairy farmers generally do it tough. ONFARM data shows that the worst average Operating Surplus for dairy clients of \$195/ha is only \$9 lower than the longer term average of the beef monitor and case farms visited.

The following comments were made by ONFARM Consulting dairy farmer clients, and discussion group members and service providers, when the question was posed, "Why don't more people dairy in the North East?"

- *'... I see plenty of beef farmers who have the potential to change – but:*
 - 1. Many are too old to change and too comfortable with a higher equity position (and it could be perceived to be too risky to change)*
 - 2. It has never been made clear to the younger ones how profitable it could be if they made a change. No-one has presented it as a comparison.*
 - 3. Many would simply not even have considered it or properly analysed it, past just an idea.*
 - 4. Young beef farmers have not been introduced to the skills of dairying (perhaps they think it could be too hard/too much work!)*
 - 5. Very few facilitators prepared to follow through helping with the whole change/"move" (this would be time consuming), but the "hand holding" would help build confidence with those starting out..."*
- *"...Dairying being 3 to 4 times more profitable than grazing is the main reason we do it, having come from beef. Why more people don't dairy, in the N.E. I think is not so much the long hours, which is the usual not thought out answer. But more starting from say a job in town, farm \$1,000,000 Herd min 250 \$5000,000, Plant and Dairy \$750,000, then if your new to the game hoping you don't stuff up, then*

looking at the hours, 2 or 3 Million debt, and thinking the job in town is not that bad...”

- *‘... A culture thing; we are only now starting to unravel the potential on farms, on the river flats and in this climate. Old farming practices are gradually being overhauled and new more intensive more scrutinising management is extracting more from the resource on hand. I think these managers are better utilising pasture and home grown feed and better applying key inputs like grain and fert. They are probably more enthusiastic to invest in technology and capital upgrades. Also financially I think we are finally starting to see farmers actually run businesses rather than giving it lip service. The farmers in the 3030 group and a few others are in my eyes having a go, trying things experimenting, trying to understand their conditions and making informed and well judged decisions...’*
“... Traditional family farms have most likely converted from dairy to beef, exploring other dairy opportunities probably didn’t occur and these tightly held family farms have lost their way!..”
‘...Grazing properties in the north east use lower inputs and back to the cultural issue have probably not been exposed and don’t realise the dairy potential available. How do we get these people engaged and motivated?????? I saw the same thing in Bega, where people were isolated and ended up farming like each other. I think it is important that farmers are learning from the best, around our country and even internationally and also in other ag industries (ie irrigation, cropping etc). They need to get off farm and rub shoulders with the leaders...’

10. ADDITIONAL SYNERGIES BETWEEN DAIRYING AND GRAZING IN THE NORTHEAST.

It should be noted that there are other opportunities for grazing enterprises or landowners in the Alpine Valleys region to link in with the dairy industry without purchasing a dairy farm or doing a full conversion:

- Land rental

There are already examples of dairy farmers who exit and rent their capital (generally dairy, land, water) to a younger “growing” farmer. This rental rate will generally be somewhere between 3 and 6% of capital value. This generally calculates to a net return double that of grazing.

In addition there are opportunities for dairy farmers to rent additional adjacent land owned by grazing enterprise operators and incorporate this into the milking area, to the mutual financial benefit of both parties.

These types of manipulation to existing dairy enterprises can be extremely profitable to a highly skilled lessee and provide the owner of the land with a superior return with no labour input or investment in livestock.

The rental of outpaddock areas for dry dairy stock also occurs and this is likely to return higher levels than grazing.

Curtis et. al, 2007, in their paper *“Taking over the reins: trends and impacts of changes in rural property ownership”*, have suggested that there is likely to be increasing rates of property turnover in rural areas in the next decade with a new type of owner often doing the purchasing.

This new type of owner is less likely to have a farming background - when the lack of enterprise profitability and the labour demands of owning stock become obvious then rental of the land is likely to seem an attractive proposition.

- Dairy Agistment

The high land values and/or feed costs in other dairying areas (e.g Gippsland or the Northern Irrigation districts) mean that opportunities exist in the Alpine Valleys region to develop replacement dairy stock agistment at competitive rates.

There are examples of large corporate farms that currently agist all their replacement stock at rates varying from \$9 - \$13 per week per head, based on specified weight gain targets. Less formal and less demanding arrangements operate for \$7 - 9 per head per week to produce an “acceptable” two year old calving heifer.

These types of operation are not numerous in the Alpine Valleys region and stock quite often are transported from Northern Victoria, Gippsland and the South West. The profitability of these enterprises is generally 25 - 40% above current beef grazing enterprise performance with no investment in livestock.

There is a requirement however to achieve specified outcomes, formally or informally, so some grazing enterprise operators may need to require new skills.

Promotion of these types of activities in the Alpine Valleys region is worth considering, to increase the take-up.

11. LIST OF ATTACHMENTS

- 1.1 – 1.3 A normal sized good operation
- 2.1 – 2.2 350 ha Beef Grazing Enterprise budget
- 2.3 – 2.5 Source Grazing Data from DPI
- 3.1 – 3.3 Top 25% Performance on 350 ha
- 3.4 – 3.6 Typical Performance on 350 ha
- 3.7 -3.8 Conversion of 350 ha grazing property to dairy

12. REFERENCES

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- Situation and Outlook Surveys, Dairy Australia
- “Taking Over the Reins – Trends and Impacts of Changes in Rural Property Ownership”*, Allan Curtis and Emily Mendham, 2007