Proceedings of the New Zealand Grassland Association 48: 9-14 *(1987)*

TOWARDS 2000: FARMING AND POTENTIAL: CENTRAL OTAGO

J. KELLY
MAF, Alexandra

INTRODUCTION

Central Otago is the driest, the coldest, as well as one of the hottest areas in New Zealand.

Within Central Otago an enormous diversity of land use occurs. This ranges from intensive horticulture to extensive high country pastoral farming. Pastoral farming is perhaps best known for wool production, in particular merino wool.

History tells us that sheep farming was profitable for many years and in 1871 Otago had 3.7 m sheep or about 4% of the national. Things were done on a grand scale in those early days. As an example, the woolshed on the Teviot run held 8,000 sheep and 40 shearing stands.

History will also tell us that the Land Development Encouragement Loan Scheme (LDEL) and the Livestock Incentive Scheme (LIS) had an enormous impact on Central Otago. In Otago 195,000 ha of tussock country was oversown and topdressed and this accounted for 27% of the national total spent on LDEL.

History will also tell us that 1985186 was catastrophic financially for most pastoral farmers and the outlook for 1986167 shows little improvement.

This then sets the scene for Central Otago over the last 10 years. Table 1 illustrates the impact of land development under the various incentive schemes.

Table 1: Livestock numbers — Central Otago

	1956	1966	1976	1962	1964	1966'	1990'
Ewes	796,000	1,171,000	1,505,000	1,785,000	2,050,000	2,260,000	2,170,000
Total Sheep	1.367.000	1,363,000	2,142,000	2,617,000	3,010,000	3,600,000	3,800,000
Cattle	2,000	50,000	95,000	65,000	88,500	86,000	65.000
Deer						15,000	2,500
Goats						6.500	40,000

'MAF ESTIMATE

Central Otago has 2.5 M merinos, corriedale, and half bred sheep. Approximately 70% of the national total of fine woolled sheep. Also of note is that deer and goat numbers have had dramatic increases Historical statistics are unreliable because they have only recently become a farmed animal.

However, much of this increase was also associated with marked improvement in feed utilisation.

With the very low rainfall in many parts of Central Otago pasture production and therefore feed utilisation varies enormously between seasons and years (Table 2).

Table 2

	MEAN DAILY YIELD (kg DM/ha)			% OF ANNUAL YIELD		
Season	Mean	Lowest	Highest	Mean	Lowest	Highest
Winter	0	0	0	0	0	0
Spring	15.6	4.9	35.7	44	27	100
Summer	13.2	0	23.6	37	0	55
Autumn	6.6	0	15.6	19	0	40
			Over 10 years			

Traditionally winter feed and feeding has been a limiting factor to stock increases. However, with development the autumn period is now extended into

April/May and spring growth starts early. This effectively has decreased the winter period, but we are still looking at 90-100 days no growth.

FINANCIAL

Pastoral farmers in Central Otago have the same short term ambitions as their counterparts nationally — this is survival. The dramatic turnaround in the economics of pastoral farming has been widely aired. The MAF farm monitoring scheme is a national "model" of many types of pastoral farming. The following examples are the Central Otago models for the July reporting time (Tables 3-6).

Table 3

	196415	1985/6	198617 (Est)
Merino Properties			
Total Area/Farm (ha)	11,000	11,000	11,000
Number Farms	115	132	132
Sheep Stock Number/Farm			
Breeding Ewes	3,800	3,800	3,800
Other Sheep	5,520	5,500	5,875
Total SSU	8,000	8,200	8,500
Cattle	160	160	160
Total SU/Farm	8,800	9,000	9,300
Hall-bred **Properties**			
Total Ares/Farm (ha)	3,000	3,000	3,000
Number Farms	214	197	197
Sheep Stock Numbers/Farm			
Breeding Ewes	4,200	4,400	4,400
Other Sheep	1,745	1 "	2,245
Total SSU	5,479	5,672	6,072
Cattle	62	62	62
Total SU/Farm	5,789	5,982	6,382

Table 4: CLASS 1: CENTRAL OTAGO HIGH COUNTRY 6000 SU based on halfbred and corridale flocks.

Financial Indices ($)	1963184	1984/85	1985186 Review	1966187 Forecast
Gross Farm Income* ($)	153,420	175,026	142,644	143,145
Cash Farm Expenditure ($)	84,700	97,804	91,000	80,823
Cash Farm Surplus ($)	66,720	77,222	51,644	62,322
Less Personal, Taxation	25,000	21,161	23,000	25,200
Financial Charges	30,858	31,458	38,035	42,035
Surplus for Ploughback	12,862	24,603	- 9,391	- 4,193
Less Development & Capital	10,000	20,000	0	0
Cash Balance	2,862	4,603	- 9,391	- 4,193

'Net of Stock Purchases

Key points to note from these figures are:

1. Influence of scale of operation on profitability. Class 1 properties are in excess of 4,000 su while Class 6A are around the 2,500 su. In the present pastoral downturn the economies of scale are evident.
2. Expenditure on development and fertiliser has virtually ceased. This raises the question — how long before benefits from previous development run out and stock performance is effected?
3. The November review is expected to show a decrease in the deficits mainly through increased lamb returns predicted for 1986187 now that schedules are known.

Table 5: Class 6a : fattening/breeding. These are extensive fattening properties on the downlands or valley floors, generally breeding their own replacements. Many have limited irrigation and are prone to summer droughts. Some run fattening cattle and grow a small amount of cash crop.

	1984/5	196516	1986/7
Total Area/Farm (ha)	375	375	375
Number of Farms	289	289	289
Sheep Stock Number/Farm			
Breeding Ewes	2,100	2,000	1,750
Other Sheep	656	640	1,056
Total SSU	2,570	2,450	2,540
Cattle	15	15	15
Total SU/Farm	2,645	2,465	2,615

Table 6

	1983/84	1984/85	1985/86 Review	1986187 Forecast
Gross Farm Income ($)	91,479	99,961	70,930	71,631
Cash Farm Expenditure (5)	47,476	57,965	46,032	50,920
Cash Farm Surplus ($)	44,023	42,021	24,898	20,711
Less Personal, Taxation	13,958	15,000	16,400	13,000
Financial Charges	20,908	20.908	23,667	29,166
Surplus for Ploughback	9,157	6,113	15,369	21,457
Less Development & Capital	0	2,000	0	0
Cash Balance	9,157	4.113	15.389	21.457

To date approximately 800 farmers have applied for restructuring under the restructuring proposals. Many more could be expected to apply before the end of the year. This restriction has also ensured the survival of lucerne in Central Otago for both hay, grazing and increasingly silage production. Unlike other areas, lucerne still grows extremely well in Central Otago and I expect it will continue to do so for many years to come — for one very simple reason — farmers know it is the key plant on their farm and hence manage it properly.

The lucerne area in the Maniototo has decreased because of soils with impeded drainage really had wet feet during wet winters in the early 1980's (Table 7). I would also expect that the prospect of the full Maniototo irrigation scheme covering 11,000 ha meant that many farmers did not replace lucerne on the expectation that irrigation would be available.

Table 7: Lucerne Land Area (ha)

	1975	1965
Lucerne Area NZ (ha)	220,000	104,000
Central Otago	32,500	30,100
Maniototo	17,000	12,300
Vincent	14,000	16,400
Lake	1,300	1,400

Cattle numbers have declined since the mid 1970s because of better feed utilisation, poor cattle returns and increased costs of winter feeding. There are now very few properties where cattle can be withered in "the rough gully" at virtually no cost.

Deer and goat numbers have had spectacular increases in the last 10 years. Several of the pioneers of the deer farming industry have been Central Otago people. Similarly Central is at least up with the play nationally in terms of several aspects of the goat industry.

IRRIGATION

Problems have existed with irrigation in Central Otago in relation to the funding of schemes. The return from water sales has always been less than the operating and maintenance costs. John Hercus put it rather politely to the 1966 Grasslands Conference in Alexandra when he said "It is perhaps pertinent to state here that, considering all the present Government schemes in Central Ctago, annual revenue from water charges is considerably less than costs of repairs, maintenance and operation".

There are 16 schemes in Central Otago irrigating in excess of 27,000 ha on over 800 properties. Several of these schemes suffer from low unreliable flows with resultant management problems. Over the years cheap water has resulted in:

1. A low level of on farm development because water is not valued at its true costs.
2. Poor utilisation and low efficiences of irrigation.
3. An accumulated deficit in scheme running costs of over $20M and cost recovery in the region of 1530% depending on the scheme.

On the other side of the ledger much of the land being irrigated does not itself to automation or border dyking. The dilemma now being faced by Government and the irrigators is how to put the schemes on a realistic user pays basis. On the one hand the Government wants user pays and on the other hand the users say they cannot afford to pay.

This is shown in Table 8.

Table 8: Irrigation schemes in Central Otago

Scheme	Water Quota (mm)	1966167 Water Charge ($/ha)	Additional Water Charge ($/1000 m³)
Arrow		51.92	6.92
Ardgour	600	46.73	7.79
Tarras	600	46.73	7.79
Last Chance	450.600	41.54 46.73	9.22 7.79
Hawkdun	300	36.34	12.11
Idaburn	450	41.54	9.22
Manuherikia	750	51.92	6.92
Omakau	300	36.34	12.11
Galloway	750	51.92	6.92
Ida Valley	Variable	36.34	12.11
Plsa	600	46.73	7.79
Ripponvale	750	51.92	6.92
Teviot		51.92	6.92
Earnscleugh		51.92	—

Because of inefficiencies in irrigation the basic water quota will in many cases only give three or four irrigations. Hence, considerable extra water can be required. It is obvious that the present economics of pastoral farming simply mean that meeting the full cost of water is just not on. The two answers are either not using water or finding a more profitable use for the water than traditional pastoral use. Water charges can no doubt be reduced by closer co-operation between irrigators and MWD. Administration and maintenance are two areas presently being investigated to achieve some reduction.

HORTICULTURE

The 1960s and 1970s saw relatively a static horticultural industry but the 1980s have seen a dramatic upsurge in tree plantings which will lead to dramatically increased production (Table 9).

Table 9: Horticulture in Central Otago

	1965	1990'
Area Planted (ha)		
Pipfruit	600	
Stonefruit		
Cherries	57	
Apricots	361	
Nectarines	224	
Peaches	119	
Plums	32	
	793	
Production (tonnes)		
Pipfruit	15,000	22,000
Stonefruit	6.000	9,500

'MAF Estimate

These projected production increases will require careful planning in all aspects of the production and marketing cycle. Items such as packing sheds and labour requirements present the challenge of the late 1980s, early 1970s for the horticultural industry in Central Otago. A feature of the recent developments have been the number of syndicates and special partnerships. About 10 are underway and more are planned. The emphasis has been on nectarines and peaches but latterly the emphasis has switched to apricots, apples and cherries. The cherries are being targetted specifically at the recently opened Japanese market.

Given that profitable markets are available there is ample land available for horticultural expansion. However, at this stage there is a questionmark over the availability of profitable markets. There is a tremendous challenge here for the stonefruit industry, in particular to ensure a profitable future.

TOWARDS 2000

I believe we have only scratched the surface in identifying opportunities for the year 2000 for Central Otago farming. This may seem a strange statement in the light of the present state of pastoral farming. But the bottom line is now the $ and so inputs must be used to give the maximum return.

The "broad brush" approach to pastoral farming which has operated for the last four years has to go. No longer will we be conducting "extensive" development. We will specialise on farm.

- What do we do well?
- What areas give greatest returns?
- How can inputs be utilised to give these maximum returns?

When it boils down it is fertiliser and plants are the key to the pastoral system. We do not have homogenous farms in Central Otago. They can range from 200 m to 2000 m and dryland to irrigated. Hence we must be selective and capitalise on the different attributes of different areas to develop into a system. To develop this system we need good records. In general these are either not there or not used to their maximum if they are there. To develop this system and put inputs in the most profitable areas we must be able to answer the following:

- How many stock do different blocks carry?
- What type of stock?
- Where are the best producing areas?
- Why is this?
- How much stock could these blocks carry?

All this can be put together to build a management picture of the property.

The following issues can then be tackled. These issues are going to be major

factors in the pastoral industry in the next 10 years.

- Strategic fertiliser application — how much, where and how often give the most economic responses?
- What new plant species are needed and/or best for dryland farming in Central Otago?
- Strategic irrigation — maybe more special purpose crops for say heavyweight lamb production (or is it not economic in Central)?

. Renewed emphasis on lucerne.

The integration of all these factors will give a total system for a property which will make the pinpointing of problem or pressure areas much easier and hence give a clearer guide to what answers are needed.

Or-several fronts Central Otago has some significant things going for it.

1. More importantly Central Otago is the best fibre-producing area in new Zealand. The quality of wool and goat fibre is high and the potential is large. We have a good example with the Matakanui Station wether trial where wethers from 30 stations in the high country are run. At this year's field day in September, 4-tooth wethers averaged 6.6 kg wool and returned a gross value of $46/stock unit.
   The goat industry is presently small but I am confident that in a few years Central Otago will prove to be the premium growing area in New Zealand.
   Additional returns can be gained by "adding value" to this fibre production. We have not even scratched the surface in this area and it is certainly pleasing to note several innovative farmers analysing opportunities in this area.
2. We have the best tourism and recreational facilities in New Zealand. Right at our doorstep we have over 400,000 visitors spending $100 million/year in Queenstown. What is the pastoral industry doing to tap some of this? Very little. With another 25 hotels planned for Queenstown in the next few years the potential of this market is large. Farm tours, rabbit shooting and wool all offer opportunities in the tourism and recreation field.
3. Deer farming and other diversification options have potential to expand.
4. Horticultural production will expand in the fresh, dry and process areas and hence open up further opportunities.

All will have an important place in Central Otago's agriculture of the future.

There will be many changes on the pastoral scene as financial and market conditions dictate. There will be short term suffering and heartbreak, but I am confident the future holds tremendous prospects.

There is increasing pressure on pastoral lease areas from many interests including horticulture, tourism and recreation. This will no doubt lead to many changes in high country areas, after all approximately lm ha is held in leases in Central Otago.

To attain this will need a concerted effort by all involved. There will be much forward thinking and planning by many groups. MAF advisory staff have undertaken several studies in the last two years. These highlighted many areas of potential for Otago's agriculture and horticulture and importantly they were not just production orientated. They looked at industry needs and many concluded that better overall co-ordination and planning and a "whole industry" approach to tackling the problems were the best direction to go in. Now that this lead has been given it Is up to all groups to co-operate and combine to think and plan strategies so that we confidently proceed to the year 2000.