Cattle - Cost of prod. o.s.

AN ASSESSMENT OF BEEF PRODUCTION IN TRADITIONAL DAIRYING AREAS OF THE FAR NORTH COAST OF N.S.W.

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1. INTRODUCTION

In the eight shires of the Richmond-Tweed Statistical Subdivision[1] the numbers of beef cattle and beef cattle producers have increased rapidly over the last decade. Between 1965 and 1971 beef cattle numbers increased by 85 per cent to 386,000. This increase has roughly corresponded to the decline in the number of dairy cattle. In 1965 beef cattle comprised 38.8 per cent of all cattle but by 1971 this percentage had risen to 67.7 per cent of the total.

In 1971 in the Richmond-Tweed shires there were just over 3,000 holdings with beef herds containing twenty or more head of cattle. A further 1,800 were located in the Clarence shires. Little appears to have been documented about the nature of these holdings. In the western parts of the region beef production is a specialist activity on relatively large holdings. Towards the coast, beef grazing is commonly found as a sideline to dairying and other enterprises such as sugar cane and bananas. Especially in the coastal shires beef is often seen as the enterprise of part-time farming with landowners either semi-retired or having off-farm employment.

Table 1 gives some information on the extent to which beef cattle are run on dairy farms. About 20 per cent of beef cattle in the Richmond-Tweed shires are found on dairy farms but the percentage appears to be declining though not the absolute numbers. This percentage is much less in the Clarence shires being about 7 per cent in recent years. All but a few of the 2,936 dairy farms on the North Coast in 1971 ran beef cattle and the average size of beef herds on dairy farms was about 29 head.

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(1)

The North Coast Statistical Division contains the Sub-divisions of Richmond-Tweed, Clarence and Hastings which was added very recently. The North Coast region for the purposes of this paper comprises the Richmond-Tweed and Clarence Sub-divisions; it extends from the Queensland border south to and including Nambucca shire.

TABLE 1

Number and Percentage of Beef Cattle on Dairy Farms

	1969	1971
Richmond-Tweed		
Beef Cattle on dairy farms	55,399	63,009
Beef Cattle on other holdings	248,889	322,552
Percentage Beef Cattle on dairy farms	18.21	16.34
Clarence		
Beef Cattle on dairy farms	17,764	18,140
Beef Cattle on other holdings	226,350	261,330
Per Cent Beef Cattle on dairy farms	7.28	6.49

Source: Commonwealth Bureau of Census and Statistics

The range of sizes of beef cattle herds is one indicator of the nature of holdings producing beef cattle. The size distribution of beef cattle herds for the North Coast region as a whole is given in Table 2. Unfortunately size distributions are not available for Sub-divisions or shires so that traditional beef producing areas, and areas currently changing from dairying cannot be distinguished. The size distribution of herds is given for four points in time between 1956 and 1969 the last year for which the distribution is available. It can be seen that the number of herds in all size classifications has increased between 1956 and 1969 but the greatest increase has been in the number of herds with fewer than 200 head.

Table 2 also shows that fewer than 750 of the 4,463 beef herds on the North Coast in 1969 contained more than 200 head of cattle; fewer than 420 herds contained more than 300 head. It needs to be emphasised that the size of herds is measured by counting all animals including calves and replacement stock as well as adult cattle. It is measured at the end of March when perhaps the greatest number of calves and young stock are in the herds.

This classification of the size of North Coast beef herds is particularly significant when compared with the Home Maintenance Standards set down by the Closer Settlement Advisory Board (now the Rural Assistance Board). Home Maintenance Standards specify the minimum number of animals

TABLE 2

Distribution of Beef Cattle Herds by Size of Herd

North Coast Region

Number of Cattle in Herd	Number of Herds at March				Per Cent Increase
	1956	1960	1965	1969	1956 to 1969
20 - 49	668	769	1034	1345	101
50 - 99	496	654	909	1354	173
100 - 149	250	320	420	686	174
150 - 199	149	174	246	334	124
200 - 299	178	195	262	328	84
300 - 499	135	179	191	260	93
500 or more	98	103	134	156	59
Total	1974	2394	3196	4463	126

Source: Commonwealth Bureau of Census and Statistics.

required to "maintain an average family in average circumstances". These standards can be criticised especially because they do not consider the level of owner equity but even assuming high levels of owner equity they are often too low.

Disregarding these criticisms the current standards for beef units are:

320 breeders for breeding (without fattening) herds.

250 breeders for herds producing vealers.

These standards suggest that no more than a few hundred beef herds on the entire North Coast are of sufficient size to be the basis of efficient full time units.

It is useful to examine the range of herd sizes on holdings that fall into particular ranges of area. Table 3 sets out the range of herd sizes on holdings of less than 400 hectares and of less than 200 hectares. There would be few holdings exceeding 400 hectares in areas changing from dairying to beef. Table 3 should therefore give some indication of the maximum number of beef units of various sizes in traditional dairying areas. If this proposition is acceptable then Table 3 indicates that there could be fewer than a hundred beef herds providing the basis for efficient full time units in traditional dairying areas throughout the entire North Coast.

TABLE 3

Size of Beef Cattle Herds on Farms of Less than 400 and 200 hectares, 1969

North Coast Region

Number of Cattle in Herd	Less than 400 hectares	Less than 200 hectares
20 - 49	1307	1188
50 - 99	1271	1078
100 - 149	592	438
150 - 199	241	142
200 - 299	176	80
300 - 499	53	7
500 or more	6	1

Source: Commonwealth Bureau of Census and Statistics.

These results suggest that the economic status of large numbers of beef producers throughout the North Coast may be unsatisfactory. The rapid swing to beef in traditional dairying areas might merely be replacing one low income problem with another. Particularly in these areas, operators changing to beef, new operators buying-in, administrators of reconstruction programmes and lending authorities seek and need to know the economic status of existing producers and the requirements and prospects for successful and profitable beef production by new producers.

To provide some of this information two surveys were made of beef producers in four traditional dairying shires of the Richmond-Tweed in 1971 and 1972.

2. THE FARM SURVEYS

2.1 SURVEY LOCATION AND AIMS

The producers surveyed were located in the shires of Tintenbar, Byron, Gundurimba and Terania. In these shires the number of beef cattle has risen from 23.5 per cent of all cattle in 1965 to 55.2 per cent in 1971. Counting only beef cattle in herds of 20 or more, beef cattle numbers totalled 113,000 head in these four shires in 1971.

Producers of both beef and dairy products were not surveyed because of the difficulty of separating costs and returns for the two enterprises and because of the small percentage of beef produced on dairy units.

The specific aims of the surveys were to collect information which could be used:

(i) To measure the income, cost and capital structure of typical beef units.

(ii) To describe the circumstances of farm production including acreage of units, size of herd, type of beef produced, pasture and cropping programmes, and other management practices; and to relate these circumstances to levels of farm income and costs.

(iii) To indicate aspects of beef production where further economics research should be undertaken with greatest benefits.

2.2 THE 1971 SURVEY

(i) The Survey Sample

The names and addresses of all stockowners in the four shires who owned 200 head of cattle or more at December 31, 1970 were collected from the Richmond-Tweed Pastures Protection Board. No distinction is made between young and adult stock in the P.P.B. register and it was considered that herds with less than 200 head of beef cattle of all

ages were unlikely to provide a net farm income of the order of $3,000 per annum for a full time operator. No distinction is made between beef and dairy cattle in the register so that the sample initially contained dairy farmers as well as beef producers.

A total of 60 stockowners qualified for inclusion in the sample. Informal enquiries were made to identify dairy farmers and those that were excluded from the sample. Three beef units were also excluded. One was attached to an abattoir and two were operated by stock and station agents holding and dealing in cattle. Also excluded were a number of farms on which dairying had only recently ceased and a beef programme was in the early stages of development.

The exclusion of these units reduced the number in the sample from 60 to 28. A further 4 stockowners were excluded during the course of the survey when it was found that they were still in dairying or had ceased only recently.

The most surprising feature of this sample is its size. Although in December, 1970 there were over 100,000 head of beef cattle in the four survey shires, only 24 stockowners were registered as having 200 or more head and in production. This suggested that most beef cattle in the four shires are run in small herds as sidelines to other enterprises, or as small units providing less than full-time employment for the operator.

Firm conclusions cannot, however, be drawn from these results because some herds which are operated as single units may not have appeared in the sample through divided nominal ownership. Several cases of divided nominal ownership were detected and the stock numbers were therefore consolidated into producing units but it is possible that some instances went unnoticed.

(ii) <u>The Structure of the Surveyed Beef Units</u>

A classification of the units surveyed is shown in Table 4.

TABLE 4

Classification of Survey Farms

	No. of Farms
(a) Farms comprising 3 or more separated holdings of which 1 is in survey shires	4
(b) Farms with unusual enterprises or circumstances of production	3
(c) Farms where beef is a sideline to cane or bananas	3
(d) Farms purchased within last 2 years	7
(e) Farms in specialist beef production 2 or more years	4
(f) Farm sold or not located	2
Total	24

Group (a) comprises units which typically have at least one holding on hill country in the western part of the region with another holding in the high rainfall areas close to the coast within the survey shires. In some cases a holding on alluvial flats along the Richmond is also integrated with the other holdings. All of the operators of these units - all family ventures - have been in beef production and the holdings put together over many years. The operators are widely regarded as having rare skills and astuteness in buying cattle. Three of the units in this group bought in steers for fattening and the other one traded large numbers of cattle of all types.

Group (b) comprises units of single holdings with peculiar enterprises or circumstances of production. One unit raises dairy heifers for resale, another consists entirely of swamp land and the other is located on a mountain top with pecular topography and problems of pests, weeds and regrowth.

Group (c) comprises holdings which run beef cattle as a sideline to sugar cane and banana production. Beef provided less than half the gross income and it was not possible to allocate costs to the different enterprises.

Detailed physical or financial information was only sought from units in groups (d) and (e). The units in these two groups were in beef production and could be expected to indicate the level of attainment for the area generally.

(iii) Specialist Beef Units Operating Less than Two Years (Group (d))

Of the seven farms in this group, five were surveyed in detail. The financial situation of each was examined but no economic analysis made of any because of the short period of operation and the abnormal costs and revenue situation during establishment.

Farm Sizes

Average size of the units was 157 hectares, the largest having 214 hectares and the smallest 105 hectares.

Two units were each formed by amalgamation of three previously independent holdings. Two units were an amalgamation of two formerly independent holdings, and the remaining unit involved no amalgamation.

The operators had generally commenced beef production by purchasing one or two holdings with no immediate intention of enlargement. When adjoining properties became available however, the operators found that they were in a position to buy the extra land and that the proposition was attractive.

Pasture and Crop Development

When the holdings were purchased the pastures were generally unimproved consisting largely of compressum and buffalo grass. Areas of kikuyu occurred around former dairies and some pastures had minor components of paspalum and kikuyu.

On only the largest farm were there are no immediate plans for pasture development. On this farm existing areas of kikuyu (about 20 hectares) are topdressed annually with 250 kg of urea per hectare.

Two of the operators are undertaking broad acre pasture development. An annual topdressing of 250 kg/ha of superphosphate is made in the expectation that balanced productive pastures of kikuyu and naturalised white clover can be achieved without the use of nitrogen fertiliser.

On the other two farms between 6 and 8 hectares of pasture are being developed annually by means of sowing improved pasture species into a prepared seedbed after initial forage cropping.

Livestock

Vealer raising is the predominant type of enterprise. A precise definition of the grade "vealer" is not possible as the grade is largely subjective. On the north coast it applies to steers or heifer calves aged between about 8 and 12 months with sufficient condition to be sold for slaughter.

On all the farms surveyed a proportion of calves fail to develop to vealer grade. On three of the farms operators claim that no more than 10-15 per cent of calves fail to make vealers off the grazing breeder. On the remaining two farms, a much greater proportion cannot be sold as vealers. Calves that do not make vealers are sold as weaner stores or are carried on to an older age when they may be sold in fat or store condition. On one farm, calves not making vealer grade have been grain fed and sold fat as yearlings.

One operator estimated that more than half of the calves sold by him could not be classed as vealers but rather as "forward store weaners". This resulted from a deliberately high stocking rate which the operator believed would give him a higher total return, even though return per animal would be lower.

The operator of the smallest farm bought weaner heifers (7 to 10 months) and sold them a year or more later in calf as springing heifers. During winter the herd on this property typically comprised 60 breeders and 120-140 heifers aged 9 to 18 months.

The three largest properties carried 210,230 and 220 breeders by spring 1971. Numbers had risen rapidly to these levels over the preceding two years and the operators intended to further increase herd size. The other two properties had breeder herds of 60 and 146. The latter intended to increase numbers as development proceeded.

Dairy or dairy cross breeders constituted almost the entire herd on all except one property. Fifty per cent of the herd on this property was Hereford. One farm bought in a dairy herd in 1970/71 to replace a Hereford herd which had given disappointing performance during the first year of operation of the property; Jersey and Friesian cows are now used with Brahman bulls. Hereford bulls are used on all other herds. The intentions of the operators with straight bred dairy herds is to replace them with first cross Herefords from the herd. These operators could not afford or could not obtain first cross animals to start off with.

On none of the properties is mating controlled; the bulls being run with the breeders all year. Despite this the main breeding period on all the farms is June, July and August. None of the farmers had accurate records of calving but all estimated that calving percentages are in excess of 90 per cent per annum. Two farmers estimated their calving percentages at near 100 per cent.

(iv) Specialist Beef Units Operating More than Two Years (Group e)

Introduction

All four farms in this group were surveyed. The average area of the units is 136 hectares, the largest being 162 hectares and the smallest 129 hectares.

Three of the units are the amalgamation of three formerly independently operated holdings. All of these holdings had been in dairying at some time and the present operators of the amalgamated units had been sufficiently successful in dairying to purchase adjoining holdings. They had then changed from dairying to beef. The amalgamations had taken place after a long period, the third holding being added up to 10 years after the second.

The fourth unit (130 hectares) had been a single holding since original selection and had been inherited by the present operator. This operator had no other employment but did not appear to be fully employed.

The operators of the three amalgamated units are past or approaching retirement age. The operators are employed only part-time and spend time in recreation or civic affairs. One operator does almost no work on the holding but leaves most to an adult son who operates a 50 sow piggery on the unit.

Pasture and Crop Programmes

Two of the operators rely entirely on natural pastures which consist of mixed carpet grass/paspalum swards. No fertilizer is applied, no crops are grown and no grain is fed. The most that appears to be done on these holdings is the maintenance of boundary fences. Income data for these two farms is given later.

On the other two farms no crops are grown but pasture development programmes are undertaken. On one, the entire property is topdressed with superphosphate. The property has extensive areas of kikuyu with some white clover. On the other property, about 40 hectares of kikuyu - a quarter of the property - are topdressed annually with 250 kg nitram per hectare, the aim being to provide feed and spread the kikuyu. On both properties the fertilizer is spread by contract.

Livestock

Vealer raising is the predominant activity but on one property - running Herefords - only a small proportion of calves make vealers. The rest are carried on and sold as steers at 2-4 years; heifers are sold with calf at foot.

On the other three properties, dairy or dairy cross animals are used as breeders. One uses straight Australian Illawarra Shorthorn (A.I.S.), another uses Jersey-Hereford cross and A.I.S. and the other uses a mixture. On two, a Hereford bull is used; on the other, second cross Santa Gertrudis are used.

The property running Herefords had about 100 breeders with a range of animals of different age and sex up to steers about 50 of which are sold each July-August.

The other properties carried about 140, 135 and 180 breeders.

On none of the properties was controlled mating practised.

Income

Only two of the operators were prepared to disclose details of income and cost. These operators had the herds of 135 and 140 breeders and did not have any pasture improvement programme. For neither of these properties, however, were there records of the value of cattle on the properties at the beginning and end of each financial year. Differences in the opening and closing values of livestock are required to adjust the cash income position. Particularly where livestock numbers fluctuate from year to year or where long term changes are occurring, cash income calculations will not give an accurate account of real income. The details which were available for the two farms are presented below merely as two observations and without implying that they are necessarily typical. The capital value of the land and livestock of the farms is of the order of $75,000 depending on the land values. Sales of neighbouring farms indicates that land values are rising rapidly in the area.

2.3 THE 1972 SURVEY

One of the objectives of the 1971 survey was to gather economic data for calculating farm income levels. This objective was not met primarily because of the apparent very small sample of farms which satisfied the criteria applied in sampling. These were that farms should be large enough to have some potential for providing the operator with full time employment and a net farm income at least of the order of $3,000 per year and in circumstances which are generally attainable in the region. Because the number of experienced beef producers in the sample was so small doubts arose about the accuracy of the sample. Because of this and the remaining need to obtain financial information from beef producers, a second survey was undertaken on a

different basis.

	Farm I		Farm II	
	1968/69	1969/70	1968/69	1969/70
	$	$	$	$
Livestock Sales	8166	4763	8500	7500
Purchases	85	325	665	1837
Cash Income	8081	4438	7835	5663
Expenses:				
wages	-	383	-	50
rates	488	491	336	358
repairs and maintenance	134	267	71	186
travelling	448	328	83	100
tractor expenses	128	32	-	-
electricity/phone	86	67	-	-
weed control	-	-	-	-
fodder purchases	501	284	-	-
veterinary	165	156	20	29
agistment	38	-	-	-
seed/fertiliser	96	-	8	34
Total	2100	2017	518	757
Net cash income	5981	2421	7317	4906

Doubts about sample accuracy for the 1971 survey were supported by the possibility of inaccuracies in the register from which the sample was selected. The Pastures Protection Board levy is an incentive for stockowners to underestimate stock numbers when registering so that the accuracy of the register cannot be assured. Also the extent of divided nominal ownership of herds cannot be fully identified.

Another debatable aspect of the selection of the 1971 sample is the appropriateness of the 200 head cut-off point. Although Home Maintenance Standards and exploratory budgeting suggest that specialist units with smaller herds cannot provide a net farm income of the order of $3,000, the vast majority of units ran less than 200 head.

It was decided therefore to use an alternative register of stockowners for selecting the sample and to

reduce the herd size cut-off point to 150 head.

The alternative register was compiled from Board of Tick Control records of dipping for the same four shires covered in the 1971 survey. The numbers and owners of all cattle dipped at the compulsory "third policy dip" during December 1971 were compiled. The accuracy of cattle numbers at dipping cannot be questioned and the problem of divided nominal ownership of herds is avoided.

This register recorded both dairy and beef cattle. Dairy producers were as far as possible separated from beef producers by comparing the compiled register with a list of dairy factory suppliers. Complete segregation was impossible because dairy products are often supplied to factories under names which differ from those of the stockowners.

The size distribution of the herds in the register after the exclusion, as far as possible, of dairy producers is shown in Table 5.

About 141 or 13.5 per cent of stockowners had herds containing 150 head or more. From this population 34 were selected at random for surveying. This represented a sampling fraction of about 24 per cent.

TABLE 5

Size Distribution of Mainly Beef Cattle Herds

December 1971

No. of Cattle	No. of Herds
1 - 19	262
20 - 49	163
50 - 99	335
100 - 149	141
150 - 199	63
200 - 299	49
300 - 499	22
500 and over	7
Total	1042

A classification of the farms surveyed is shown in Table 6.

TABLE 6

Classification of 1972 Survey Farms

	No. of Farms
Still in dairying	7
Out of dairying less than 2 years	4
Bought during last 2 years	1
Sold or death of operators since sampling	7
Cattle dealer or stud breeder	4
Beef sideline to cane or bananas	2
Not located	1
In specialist beef production 2 years or more	8
Total	34

The most significant point arising from this classification is again the very small number of specialist beef producers which have been in production for at least two years. Another point is the high proportion of dairy farms in the sample. If Table 5 is corrected to exclude the percentage of dairy farms which the survey detected, the number of beef herds with 150 or more head in the 4 survey shires is reduced to 112. Of significance also is the number of stockowners who died or sold their properties in the short period from December 1971 to August 1972 when the survey was carried out. Two of the four stockowners selling out were traced; one had retired and the other had bought a small business in town. Both said the large increase in land values in recent years had made selling attractive.

The primary consideration in carrying out the survey was to obtain financial information which would enable calculation of costs and return over at least two financial years for beef producers in generally attainable circumstances. Physical and technical information was therefore only collected where the operator provided the required financial information.

Efforts to obtain detailed financial information from the 8 experienced producers were however largely unsuccessful. The main reason for this was the lack of farm

records. Tax returns usually provided records of cash income and expenditure but only three of the eight producers were able to provide records of stock numbers. Even for these three, two provided only estimates and these are open to doubt. The stocking history of the eight farms appeared to involve a build up in herd numbers, heavy culling of breeders left from earlier dairying, and opportunity buying and selling of stock of various types. This meant that accurate calculation of farm incomes was impossible without livestock records with which to adjust cash trading.

Even if all eight farms had had sufficient records to enable calculation of net farm incomes, the small number involved would make it impossible to draw general conclusions and to identify associations between net farm income and circumstances of production on farms.

3. DISCUSSION

The surveys were unable to measure income levels of beef producers operating in commonly attainable circumstances and having the potential for earning minimum income requirements in full time employment. The main purpose in attempting to measure incomes was to associate incomes with physical and technical features of farms such as farm and herd size, capital investment, management practices etc. This was to provide guidelines in studies of land use adjustment with present technology and farming methods, and would provide a staring point for assessing the economics of changes in existing technology and scale of units. The information would also have been useful to lending institutions, reconstruction authorities and potential beef producers.

The main reasons for the failure are that insufficient records of stock numbers are kept by producers but more importantly, because only a very small number of producers fitting the selection criteria are to be found in the area.

The implications of this latter reason merit further consideration. There can be no doubt that the classification of herd sizes used for the 1972 survey is accurate so that the small number of herds with more than 150 cannot be doubted and should be explained.

Perhaps the "150 head" criteria used to identify farms as having the potential for providing full time employment and satisfactory incomes as specialist units is incorrect? This suggestion is unacceptable because exploratory budgeting will demonstrate that units with a beef enterprise alone and with less than 150 head of all cattle at the December period, will only provide minimum income requirements in exceptional circumstances.

The small size of beef cattle herds must therefore indicate that beef is a sideline to other enterprises, that it is an enterprise of part-time farming, that holdings receiving beef are not separate units but are integrated

with holdings elsewhere, or that a serious low income problem exists amongst beef producers in the area.

The extent to which beef is a sideline to other enterprises cannot be determined from available information but dairy farms accounted for about 21 per cent of beef cattle in the four survey shires in 1971. Holdings producing bananas and sugar cane would also account for some but holdings with these crops are confined to restricted areas of the shires.

Little information is available on the extent to which holdings are integrated with holdings outside the survey shires and traditional dairying areas generally. The 1972 survey sample of 34 holdings contained no such integrated holdings. The 1971 sample however contained 3 integrated holdings.

It would appear that the bulk of beef production in the four survey shires and perhaps former dairying areas generally, is conducted on holdings which provide only part-time employment. Producers without off-farm employment or other income from sources such as pensions, must be in difficult economic circumstances.

These issues warrant further investigation. If part-time farming associated with off-farm employment is to be the typical method of beef production then this has implications for reconstruction and lending authorities. It also places restrictions on the forms and techniques of production and this has strong implications for agricultural research and extension. If a low income problem exists then its extent and the means of alleviating it warrant investigation.

One implication for reconstruction authorities would be that efforts to create full-time viable farms according to adopted standards would be misdirected and restrictions on credit for farms which fail to meet such standards would be inappropriate. The types of enterprises adopted in part-time farming are likely to be very different from those of larger scale farming. For example, enterprises with high seasonal peaks in labour requirements will create difficulties; small scale will make investment in substant-

ial yards and machinery unprofitable; steady income from off-farm employment might make the operator more willing to go into more risky enterprises. Research and extension authorities will need to recognise these factors if they are to anticipate the research and education needs of this rapidly changing farm situation.

D. West, Government Printer, New South Wales - 1974