THE COST STRUCTURE AND MANAGEMENT PROBLEMS OF THE DAIRY INDUSTRY IN NEW SOUTH WALES.*

* This report is one of a series presenting the results of the 1953 Dairy Survey which was conducted by the Commonwealth Bureau of Agricultural Economics in co-operation with the State Departments of Agriculture, and with the assistance of representatives of the dairy industry.

In New South Wales valuable assistance has been received in the conduct of the field work and in later stages of the survey from the Primary Producers' Union.

SUMMARY.

This report is based on an Australian-wide survey of butterfat producers conducted by the Bureau of Agricultural Economics in collaboration with the State Departments of Agriculture and industry representatives. Those dairying regions producing predominantly for the wholemilk market were excluded from the survey.

Information was obtained during the survey from over 1,000 dairy farmers throughout Australia, including 231 farmers in New South Wales; the present report relates to these 231 farmers. Separate reports are being published covering the other States.

In New South Wales the field work was carried out between October, 1953, and April, 1954, by officers of the Bureau of Agricultural Economics and the Division of Marketing and Agricultural Economics, Department of Agriculture, accompanied by dairy industry representatives. The report relates to the three-year period ended 30th June, 1953, in so far as costs are concerned, while agronomic and herd management problems have generally been analysed for the year 1952-53.

Objectives of the Survey.

The broad objectives of the survey were "to collect data which would serve both as a basis for assessment of costs and to initiate action to increase net incomes of high cost producers by cost reduction or increased productivity."

The survey was conducted on a regional basis so that analyses could be made of the reasons for differences in efficiency and costs of production between different regions and also between individual farm units. In addition to the prime purpose—of determining unit production costs of butter—the survey was designed to provide factual data regarding physical and economic features of dairy farms to enable analysis of the effects of changes in farm practices on net incomes of dairy farmers.

Scope of the Report.

The scope of this report is limited largely to a description of the economic structure of the farms included in the survey. Some description of management practices is also included, but no detailed analysis of the relationship between different practices or management systems and incomes earned has been included. However, elsewhere in this issue, another article is published in which a detailed study, based on this survey, is made of dairy farmers' incomes in the Richmond-Tweed Region. In this study an examination is made of factors affecting dairy farmers' incomes in the region concerned.[1]

Unit production costs as disclosed by the survey are not discussed in this report. However, some calculations of costs per pound of producing commercial butter during the period of the survey are shown in Appendix I, where the assumptions on which the particular cost estimates were based are also presented.

[1] See "Incomes of Dairy Farmers in the Richmond-Tweed Region", F. H. Gruen, pp. 177-205.

Survey Techniques.

Sampling and costing techniques used in the survey are dealt with in some detail in the body of the report (Part II).

Survey farmers were drawn at random from dairy factory lists, provision being made for replacements. The sampling rate was one in 44, giving a "quota" for the State of 242 farmers; only 231 interviews were completed. Only "typical full-time" producers who derived 50 per cent. or more of their gross sales of dairy produce from butterfat and whose returns from milk products and pigs represented 75 per cent. or more of total gross income were included in the sample. Numerous rejections from the original sample were necessary for a variety of reasons, and consequently the final sample may not be representative in several respects.

The Survey Farms.

The farms surveyed had an average size of 254 acres, carried 50 cows and produced 7,866 lb. of commercial butter per annum. For purposes of analysis the State was divided into six regions. The figures in brackets indicate the number of survey farms in each region:

Richmond-Tweed—"Big Scrub"[2]	(30)
Richmond-Tweed—Other[2]	(84)
Clarence	(34)
Macleay	(39)
South Coast	(29)
Inland	(15)

There were marked differences both between and within regions in the organization and capital structure of farms included in the sample. In general, farms on the South Coast and in the Big Scrub region of the Richmond-Tweed were in a more favourable economic position than were farms in other regions. Average farm incomes, family incomes and returns to both labour and capital were appreciably higher in those two regions than elsewhere in the State. Production per cow was also notably higher in these two regions than in other regions, except the Inland region (in which the number of sample farms—only 15— was too small to allow of any significant comparisons being made).

Production per Farm.

Approximately one-quarter of the farms produced less than 5,000 lb. of commercial butter per annum, while over half of the survey farms produced less than 7,500 lb. of commercial butter per annum.

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[2] Unless otherwise stated, these two regions will be referred to throughout the report as the "Big Scrub" and the "Richmond-Tweed" regions respectively. "Richmond-Tweed" as used in the text of this report will not, then, refer to the whole of what is normally known as the Richmond-Tweed region, but to that part of it exclusive of the "Big Scrub".

The higher producing farms (7,500 lb. c.b. upwards) made use of more labour, but production per labour unit was much higher on these farms. The higher-producing farms were larger in terms of labour force, cows milked, total capital invested and in the value of land per farm.

It appears that the scale of operations on many farms, particularly those producing less than 7,500 lb. c.b. per annum, is a major factor limiting not only the incomes earned but also the efficiency with which available resources are used.

Although all items of cost were higher in the high-producing groups the difference in costs was much smaller than the difference in gross income. Farms producing between 7,500 and 10,000 lb. of c.b. per annum were generally at about the "break even" point after account had been taken of all costs, including depreciation and imputed items such as labour and interest charges. Farms producing less than 7,500 lb. c.b. generally experienced book losses.

Farm Earnings.

Average farm incomes (gross income less depreciation and cash costs) varied from £1,448 on the South Coast and £1,279 in the Big Scrub to £824 in the Macleay region. Family incomes showed a similar variation, from £1,349 on the South Coast to £704 in the Macleay region. The average return to capital varied from 7 per cent. in the South Coast and Big Scrub regions to 1 per cent. in the Macleay region.

Level of Indebtedness and Capital Expenditure.

The average level of indebtedness on survey farms was relatively low at £739, representing 17 per cent. of the security value of land and improvements and 10 per cent. of the total capital investment.

This relatively low level of farm indebtedness is important, particularly in view of the fact that the survey points to the need for additional capital investment especially on lower-producing farms.

An analysis of capital investment in relation to farm income revealed a marked increase in the rate of investment in the higher income groups, particularly the group with incomes above £1,500 per annum; increased investment in water improvements, fences, buildings and livestock was particularly evident in this group.

Farm Labour.

The predominant feature of the farm labour force revealed by the survey was the almost complete dependence on family labour. In 1952-53 only 11 per cent. of the farms had any hired labour at all, though on the majority of farms—64 per cent.—the farmer's wife assisted with the farm work.

An analysis of the farm labour force relative to herd size revealed a great variation in the number of cows managed per adult male unit. The costs imputed for labour comprised a major item of cost and the prevalence of a low ratio of cows managed per man was a major factor leading to high costs.

Livestock Production.

Of 231 herds surveyed, 14 had an average annual production per head of less than 100 lb. commercial butter and 10 produced in excess of 250 lb. c.b. per head. Twenty-five per cent. of herds produced between 125 and 149 lb. c.b. per cow and a further 20 per cent. between 150 and 174 lb. c.b. per cow. Eighty-two per cent. of herds averaged less than 200 lb. c.b. per cow.

Farmers' Attitudes towards Increased Production.

The majority of farmers recognized that it would be feasible to increase production on their farms. Only 11 of the 231 farmers considered that their production could not be increased, five of these were located in the Big Scrub region.

The outstanding method by which farmers considered production could be increased was by means of pasture improvement. More than half (119) mentioned this, while 38 mentioned sub-division as well. Thirty-eight farmers considered that production could be increased by supplementary irrigation on their farms.

Of the 179 farmers who were actually considering changes in management which could be expected to result in production increases, 75 were considering pasture improvement; of these, over half (40) had already commenced a pasture improvement programme. Relatively few farmers mentioned improvement of herd quality or fodder conservation as means of increasing production.

Extension.

Of 99 farmers who had sought advice on "prospects and problems of establishing or maintaining pastures", 42 had approached agricultural advisers, 34 had consulted neighbours and 17 had seen seed merchants. Only 5 farmers mentioned publications as a source of information.

Farmers were asked a number of questions regarding their contacts with district advisory officers and their attendances at field days. Thirty-five per cent. had consulted an advisory officer and over 50 per cent. had attended field days.

Comparatively few survey farmers had visited Dairy Grant Demonstration farms. Of 59 such farmers 33 were favourably impressed, but 26 were critical of the demonstrations. A common form of comment meriting attention related to the economics of the demonstrations and to the fact that frequently insufficient information on the financial aspects of the demonstrations was available.

Attitudes towards Investment and Borrowing.

The survey makes it clear that the scale of operations exerts a very strong influence on farm earnings in the dairy industry. Consequently the accessibility of additional supplies of capital is of major importance. The attitude of dairy farmers to borrowing is also critical in determining the level of capital investment which occurs.

Farmers were queried on their attitudes towards investment and borrowing and it was found that 60 per cent. considered that lack of finance had hindered the development of their farm. However, 36 of the 137 farmers who complained of lack of finance had no debts and were apparently unable or unwilling to borrow for developmental purposes.

Ninety-four farmers considered lack of finance had not held up development. Of these, 48 were in debt at the time. Thus 46 of the 231 farmers interviewed were in a financial position which enabled them to report that lack of finance had not held up development and that they were free of debt.

1. TERMS OF REFERENCE.

On 15th July, 1953 the Dairy Industry Investigation Committee submitted a report to the Minister for Commerce and Agriculture which included the recommendation: "That a new survey of the industry be made to collect data which would serve both as a basis for assessment of costs and to initiate action to increase net incomes of high cost producers by cost reduction or increased productivity."

This recommendation was accepted by Federal Cabinet, and the Bureau of Agricultural Economics was directed to conduct the survey. The Bureau was instructed that the survey should cover the general structure of production and not be limited to cost of production and that it should provide broad regional comparisons as well as analyses of the causes of variation between farms.

The conduct of such a large scale project as the 1953 Dairy Survey required the assistance and co-operation of a large number of organizations. The working arrangements were discussed at a conference held in Canberra on 9th-10th September, 1953, attended by representatives of the State Departments of Agriculture and the Australian Dairy Farmers' Federation.

Two distinct objectives were recognized:—

(*a*) The cost analysis was to be conducted by the Bureau with whatever assistance was necessary and could be provided to facilitate access to farmers and to assure their co-operation by State Departments of Agriculture and industry representatives.

(*b*) The investigation of management and other problems which are associated with particular farms would be undertaken on a co-operative basis. The State Departments of Agriculture, and industry representatives would provide the necessary technical and other assistance, in the planning stages, during the survey, and in the analysis and interpretation of facts collected.

Separate reports are being prepared setting out the management problems in each State. The main purpose of this report is to describe the economic structure of the farms included in the survey in New South Wales and to describe the range in incomes and in the financial position of the farmers surveyed. Some description of management practices is also included, but no detailed analysis of the relationship between different practices or management systems and incomes earned has been included.

2. TECHNIQUE OF SURVEY ANALYSIS.

Field Interviews.

Field interviews were conducted by officers of the Bureau of Agricultural Economics and of the New South Wales Department of Agriculture. Field work began in October, 1953, and was completed by April, 1954. The interviewing officers were accompanied by representatives of the Australian Dairy Farmers' Federation (in New South Wales the Primary Producers' Union) who assisted in the location of farmers and in their orientation towards the interviews.

Three-year Survey.

The costs analysis has been conducted on the basis of the total costs incurred over the three-year period July 1st, 1950 to June 30th, 1953. All results presented are based on aggregate costs for the three-year period for each farm. Agronomic and herd management problems have generally been analysed for the year 1952-53.

Sources of Data.

Information relating to production of milk products from the farms included in the sample was obtained from the butter factory supplied by the farmer. Financial data relating to costs were obtained from the copies of income tax returns retained by farmers or by their tax agents.

Objectives of Management Analysis.

Other information relating to management practices on the farms was obtained during the interview with each farmer drawn in the sample. The questions relating to farm management were designed to fulfil the following objectives:—

(*a*) Analysis of the reasons for differences in efficiency and costs of production between regions and individual farm units;

(*b*) Definition of management problems and attitudes influencing the adoption of improved practices by farmers and their response to recommendations made by extension workers;

(*c*) Provision of factual data regarding physical and economic features of dairy farms to enable analysis of the effects of changes in farm practices on net incomes of dairy farmers.

Definition of Regions.

The regions for purposes of sampling and as groups for analysis were defined by the State Department and the industry representative. The boundaries of these regions correspond with boundaries of shires.

Regions entirely devoted to supply of whole milk for consumption as such were excluded from the survey. There was some difficulty encountered in defining boundaries between liquid milk supply areas and those devoted primarily to butterfat production either as cream or as milk, owing to changes in production patterns and in the structure of the industry in recent years. The criterion used in such instances was to analyse the proportion of milk produced which was sold as liquid milk, compared with the quantity sold on a butterfat basis, and to exclude areas where more than half of the supply was devoted to liquid milk. This followed the principle defined for eligibility of individual farms, as set out below. Furthermore, knowledge of management practices enabled judgment to be made as to whether or not the cost structure of the majority of farms had been distorted (relative to their position had they been cream producers) by a change-over to liquid milk supply. Such distortions generally depend on attempts to increase winter production, and on heavier feeding of concentrates. In each case, with each region, farms were excluded if less than 50 per cent. of their milk products were sold on butterfat basis, as explained below.

Ineligible Farms.

The September Conference Report records the following decision in respect of the farms to be excluded from the survey:

> "It was agreed that the following farms would be *excluded* from the sample:
>
> (i) farms on which less than 50 per cent of the total proceeds of sale of milk or milk products were derived from sale of butterfat.
>
> (ii) farms on which the size of the dairy herd (milking and dry cows) was less than 15 cows. (This is not necessarily accepted as a size of farm requiring the full-time labour of one man.)
>
> (iii) farms on which income from the sale of butterfat and/or milk products and pigs represented less than 75 per cent. of gross income.
>
> (iv) atypical farms such as farms engaged in the sale of stud stock, producers of milk for local town supply and farms operated by paid managers for absentee landlords, which were not already excluded by categories (i) and (iii) above."

Dairy farmers whose sideline income exceeded 25 per cent. of gross income were excluded from the survey, and the analysis which follows refers to a sample of this specific group of "eligible" farms which constitute an important part, but not the entire population, of farms engaged in dairy production in Australia.

There were many farms encountered in the course of the field work which were ineligible on the basis of the above eligibility clauses. The reasons for rejection of each of the farms are shown in Table I. In order to obtain the 231 farms included in this analysis, 341 farms were rejected because they were ineligible on the basis of the definitions.

TABLE I.

Reason for Rejection of Farmers Drawn in Samples but not included in Survey: By Regions.

Reason for Rejection.	Region.					State.	Percentage of Total Rejections in the field.
	Total Richmond–Tweed.	Clarence.	Macleay.	South Coast.	Inland.		
	Number of Farmers.						Per cent.
Farmer unwilling to co-operate	7	2	5	1	1	16	4·8
Farmer absent	2	1	1	...	1	5	1·5
Farmer ill, unable to assist ...	5	...	...	...	...	5	1·5
Proceeds from sale of butterfat or sale of milk on a butterfat basis did not exceed 50% of the total proceeds of the sale of milk and milk products in 1952–53.	1	1	...	...	18	20	6·0
Income from sale of butterfat and/or milk products and pigs did not represent more than 75% of gross income in 1952–53.	15	11	7	1	33	67	19·9
Farm did not have 15 or more cows (milking or dry) in 1952–53.	4	1	1	1	27	34	10·1
Farm was not typical, e.g., sells stud stock produces for local milk supply or operated by a paid manager.	9	...	1	...	...	10	3·0
The farmer had not been engaged in dairy farming on the one farm since July, 1950.	54	12	13	8	16	103	30·6
Records and costs for the farm could not be separated from those of another farm.	17	5	7	2	7	38	11·3
Sold out	5	1	...	...	2	8	2·4
Other reasons	10	3	9	...	8	30	8·9
Total	129	37	44	13	113	336	100·0
Rejected during processing (Inadequate records and excess sidelines).	2	2	1	...	...	5	...
Grand total	130	39	45	13	113	341	...
No. of farmers in final analysis	114	34	39	29	15	231	...

Of the total rejection of 341 farms, 103 were farms on which the farmer had not been engaged in farming for the three years of the survey period. This suggests a rapid turnover of share-farms in the regions surveyed. In the group of 572 farms contacted in relation to the survey (231 included, plus 341 ineligibles), 103 farms or 18 per cent. had changed hands in the survey period (including change of share-farmers). This represents a turnover of 6 per cent. of farms each year.

Rejections in the Inland area were at a high rate, because the dairy enterprise was a sideline on the farm concerned and because farmers were engaged primarily in milk production, or had less than 15 cows.

Some evidence of the prevalence of joint ownership of several farms is provided by the fact that 38 of the 341 rejections were farms for which it was impracticable to secure separate records, because the records of operations and costs on several farms could not be separated from one another.

Sampling Procedure.

Distribution of Sample.—The basic sample in the Commonwealth survey was distributed among States in proportion to the number of farms in each State with herds of 20 dairy cattle or more. (This category in the Commonwealth Bureau of Census and Statistics data corresponds to a herd of 15 or more milking cows.) The quota for New South Wales was 242 farms.

The basic sample was designed to be distributed as follows:

State.	*Number of Farms.*
New South Wales	242
Victoria	322
Queensland	288
South Australia	61
Western Australia	49
Tasmania	38
	1,000

In New South Wales the numbers of suppliers to each factory were known and on the basis of this total number, a sampling rate of 1 in 44 suppliers to each factory (with suppliers in the regions defined for the survey) was adopted. The rate was estimated to result in a State sample equal to the quota of 242.

Replacements.—The eligibility clauses resulted in the exclusion from the survey of many farmers drawn in the initial sample from the factory. When a farmer was found to be ineligible he was replaced by another farmer drawn from a reserve list which was established for this purpose. The order of replacement from the reserve list was kept in sequence with the actual random order in which they were drawn from the factory list.

In the Inland region, extreme difficulty was experienced in locating farmers who were eligible, and in fact the sampling in regions such as this became a matter of testing the entire population for eligibility.

TABLE II.

Composition of the Sample.

Regional Number.	Region.	Quota.	Sample.
00	Richmond-Tweed*(*a*)	37	36
01	Richmond-Tweed (*b*)	40	38
02	Richmond-Tweed (*c*)	43	40
03	Clarence	37	34
04	Macleay	53	39
06	South Coast	16	29
07	Inland	16	15
	Total	242	231

* During the analysis the three Richmond-Tweed regions were sorted into two regions, consisting of farms on "Big Scrub" soils and other Richmond-Tweed farms. (See footnote 2, p. 113.)

Capital Investment.

Land Values.—The Commonwealth Bank assisted in the survey by estimating the values of land and of improvements (separately for each item) on the farms included in the sample. This has provided a detailed picture of the investment of capital in land and improvements, at bank security levels of valuation.

The level of values used—the long term security value—was defined in accord with Commonwealth policy relating to the values to be used in the cost analysis as a basis for decisions relating to the level of guaranteed returns to dairy farmers. This level of values has also been used in the management analysis, and the analyses of capital structures which follow should be viewed in this light. The values used are below current market values, but are nevertheless not below the market values prevailing during the years immediately preceding the survey period. They therefore do not underestimate the actual level of investment of capital incurred by each of the farmers in the sample.

All capital values were estimated by taking average values for each of the three years of the survey. The average value was a weighted average of the value at 1.7.50 (weighted once), 1.7.51 (weighted twice), 1.7.52 (twice), and 30.6.53 (once). The effect was to take an average of the opening and closing values each year.

If sales or purchases of part of the land occurred during the survey period adjustments to the capital investment in land were made by applying an average value per acre to the land transferred, the average value being based on the security value recorded for the whole farm and on the purchase price.

In all cases, land was treated as freehold irrespective of its actual tenure. Its value was included in the capital on which interest was calculated and any payments for rent were not included in costs.

Land improvements and structural improvements were valued by bank officers on a similar basis to land, but adjustments were also made to incorporate allowances for depreciation during the three-year period of the survey. Consequently the value of improvements was "written up", as at the times 30.6.50, 30.6.51, 30.6.52 in such a way that by allowing the appropriate depreciation rate[3], the value at 30.6.53 became the "written down" value for each asset.

When purchases of improvements were made during the survey period, their capital value was included only for the period during which they were on the farm. New assets were written in at the end of the year during which they were purchased, so that the effect was to incorporate them in the capital investment for half of the year of purchase. (An asset purchased during the year 1950-51 was written in at 30.6.51, so that in effect interest was allowed for 6 months of 1950-51). A full year's depreciation was allowed in the year of purchase, and this depreciation was deducted before determining the value at the end of the year.

No inventory of trading stock is recorded in the analysis, as it was assumed no substantial changes occur from year to year.

Plant.—Plant was valued by the best available estimate of depreciated original cost. In many cases original cost was determined from the farmer; and when this information was not available the make, model and age of the machine was used as a basis to estimate original costs. These costs varied in accord with the year of purchase of the machine; detailed price records available in the Bureau of Agricultural Economics were used to estimate the original prices of the machines. Very old plant, e.g. scufflers, harrows, were included at a nominal value of £5—£10 per item if no information on value was available. No machine was written down to a value less than 20 per cent. of its original cost, providing that it was still in use on the farm. It was considered that some capital investment remained in such plant and even though no depreciation was allowed after the expiration of the time required to depreciate the asset to 20 per cent. of original cost (8 years of life in the case of an asset depreciated at 10 per cent. per annum), it was considered that the "depreciation" in this case would in fact be represented by additional repair bills which maintain the asset in working order and at a fairly constant capital value.

Capital investment in one vehicle was included if a car or utility were on the farm. If both car and utility were on the farm, only the utility was included. An investment of £30 in dairy utensils (milk cans, etc.) and £30 in sundry tools were included for each farm, unless a higher value for these items was recorded during the field interview, or a complete listing of these items had been made by the field interviewer and it was apparent that the items would be over or under-valued at £30.

[3] Depreciation rates allowed were those used in estimating annual depreciation allowed for income tax purposes prior to the introduction of the 20 per cent depreciation rates. These rates are set out in Income Tax Order 1217 (1950 revision).

Livestock.—Average values of livestock were taken as follows, on a uniform basis throughout all States and regions:

	Value per head. £
Dairy Stock:	
Milkers	25
Heifers mated	20
Unmated heifers over 6 months	15
Heifer calves under 6 months	10
Bulls	50
Other Stock:	
Beef Cattle	25
Sheep	3
Horses	30
Pigs	12

These were based on information on stock values supplied by State Departments of Agriculture, and on an examination of market reports. Generally they represent a write-up of 33⅓ per cent. in value compared with those used in the 1951 Joint Dairy Industry Advisory Committee Survey which referred to the 5 years ended 1949-50.

Depreciation.

In the cost analysis the depreciation claimed in the tax return was used as a measure of depreciation costs on the farm. The 40 per cent. initial depreciation rate applied during 1950-51, and the 20 per cent. annual rate of depreciation, on a wider range of items, applied during 1951-52 and 1952-53.

Apart from the above depreciation based on taxation returns, separate calculations of depreciation were also made based on the inventory of assets on the farms as recorded during the interview. These were used as a basis for establishing capital values of depreciating assets, in both cost and management analyses, and were also used as the measure of depreciation in the management analysis. For land improvements, depreciation was based on the security value of each asset.

In the case of plant, an estimate of original cost was used as a basis to calculate the depreciated value of each asset for each year of the survey. The method used was the straight line depreciation based on prime cost so that depreciation charges on any one item were equal for each year of its life during which depreciation was charged. In the case of water supply, fences, and buildings, values had been inserted by the Bank valuers as at 30.6.53. These values were written up to their values at 30.6.52, 30.6.51 and 30.6.50, by adding depreciation for each year successively to the value at 30.6.53. The depreciation used for this purpose was based on the value thus estimated as at 30.6.50.

Income Tax Returns as a Source of Data.

The source of information on cash costs was the income tax return of the individual farmers interviewed. Wide variations exist in the details of expenditure kept by farmers, and in methods by which cost items are classified by different tax agents, particularly in respect of repairs, and of operating expenses for plant and machinery, which are often merged with car expenses and with capital expenditure on

overhauls of machines. Similarly, there are some items of capital expenditure (land clearing, new fences and buildings) which may be included as deductions for taxation purposes, but which are not a reasonable charge to annual operating costs. Efforts to identify such times were made in the field work and during office tabulation.

Livestock accounts in the income tax returns were accepted (provided each account was internally consistent) for purposes of estimation of the gain or loss on livestock, and for estimation of inventories of livestock to which average capital values could be applied to estimate capital investment in livestock.

Cash Costs.

The cash costs incorporated in the income tax return were used as a basis for estimation of costs, subject to the following adjustments:—

(i) For purposes of estimation of costs of production actual cash payments made to full-time hired labour, for interest on borrowed money and for rent of land, were not included. In each case the cost allowed for these items is imputed, in accord with the procedure defined below for imputed costs. Contract work and hired labour for short periods were included at actual cash costs.

(ii) Items which were obviously of a capital nature (mainly any large-scale land clearing) were excluded from costs.

(iii) In the tax returns an item "seeds, fodder and fertilizer" incorporates costs for these items as a whole. In cases where there was no separate listing of each item, the expenditure on fertilizers was estimated by assuming prices of £10, £14 and £15 per ton for superphosphate in 1950-51, 1951-52 and 1952-53 respectively, and applying these rates to the actual amounts of superphosphate which the farmer applied each year. This information was obtained during the field interview. Similarly, lime was assumed to cost £5 per ton throughout the survey period. These estimated expenditures were listed against fertilizer and lime, and the remainder of the item "seeds, fodder and fertilizer" was assumed to be costs of seeds and fodder. This procedure generally did not influence total costs of production (though in a minority of cases it involved adding fertilizer or lime costs which were not claimed in the taxation return), and yet it provides a means of measuring and comparing inputs of fertilizer on each farm.

(iv) Cartage costs were not included owing to the difficulty of ascertaining the actual cartage charge paid by farmers in cases where the factory paid some or all of the cartage. It would have been feasible to include cartage costs as claimed in tax returns but aggregation of these costs would not have provided an accurate measure of average cartage costs per farms. (Some factories deduct cartage from the cream cheque, others pay a rate which is "net" of cartage). The position is also complicated in the case of milk producers where cartage rates are often inextricably mixed with payment for solids-not-fat.

Costs are estimated at the farm gate, and income from milk products is estimated at the farm gate. The broad categories of expenditure defined on the tax return forms have been used as a basis to classify the cost items. The variations in methods of grouping costs items[4] adopted by different farmers and by different tax agents imply that individual farms may not be strictly comparable in terms of their expenditure on various items of cash costs. The expenditure claimed in the tax return by the farmer for operation of his motor vehicle in the conduct of the farm business was included in the costs of production.

Imputed Costs.

Labour.—Field teams secured information on the number of weeks worked on the farm by the different persons working on the farm, whether members of the farmer's family or permanent hired hands, with statements by the farmer interviewed of the hours worked by each person per week in slack and in peak months.

This information was used as a basis for the allocation of labour costs to each farm. In cases where persons worked on the farm throughout the year, a full time labour charge was inserted; if part only of a year was worked, the number of weeks worked was used as a base to determine the proportion of full-time labour to be included as a cost. In cases where less than a normal number of hours were worked on the farm, a proportionate reduction was made in the labour cost.

In cases where the farm wife assisted in milking, washing up and feeding the calves—as was often the case—her labour input was assessed at half of an adult female. The estimates were made in terms of the full-time equivalent of the type of labour involved, whether it was adult male, adult female, or persons of younger age. The imputed labour cost in each case was allowed at the Federal Dairy Industry Award rate for each class of labour. The actual rates included in the estimates were an average of those prevailing throughout the three-year period of the survey, weighted by the number of months during which each rate prevailed, and were as follows:-

	£
Adult males (20 and over)	496 per annum
Boys aged 19	402 " "
Boys aged 18	328 " "
Boys aged 17	251 " "
Boys aged 14-16	177 " "
Adult females (20 and over)	354 " "
Girls aged 18 or 19	267 " "
Girls aged 17	216 " "
Girls aged 14-16	177 " "

The term "Adult male equivalent" is used in the subsequent analysis to measure the total farm labour force. It is the sum of all the different classes of labour each included at its appropriate wage, divided by the adult male wage.

[4] The most common variation was in methods of recording machinery and tractor expenses. Expenses on renovations (of a capital nature), on repairs, and on fuel were sometimes (in extreme cases) merged as "tractor expenses".

Interest.—The trading bank overdraft rate was at 4.5 per cent. from July 1st, 1950 until August 1st, 1952, when it rose to 5 per cent. A weighted average (weighted by the number of months when each rate prevailed) for the three-year period is 4.65 per cent., and this rate was incorporated in the estimates of costs of production.

Interest was allowed on the total capital value of the farm, irrespective of the farmer's equity in the farm. Interest on borrowed money was not included in costs, as the imputed interest charge was based on the total capital.

Conversion Factors.

In cases when actual production of commercial butter was not available, all production was converted to commercial butter, at the rate 1 lb. butterfat = 1.2175 lb. commercial butter and 1 gallon of milk = .482 lb. commercial butter, equivalent to a 3.84 per cent. butterfat test.

Measures of Farm Income.

The income earned from the farm as a whole provides a measure of efficiency of production and of the living standard of farmers. The methods used to calculate different income measures in this analysis were as follows:—

A. Gross Income = Butterfat Income and Sideline Income.
B. Gross Costs = Cash Costs
+ Depreciation.
+ Interest.
+ Labour.
C. Farm Income = Gross Income − (Cash Costs and Depreciation).
D. Return to Labour = Gross Income — (Cash Costs, Depreciation and Interest).
E. Return to Capital = Gross Income — (Cash Costs, Depreciation and Labour).
F. Return to Management = Gross Income − Gross Costs.

It follows from the above that return to management may be positive or negative and:

Farm Income = Return to Management + Interest + Labour.
Return to Labour = Return to Management + Labour.
Return to Capital = Return to Management + Interest.

Since interest and labour costs are imputed, the level of costs allowed for these items influences the level of computed measures of return to labour and return to capital, but *not* farm income. The effect is important because an over-estimate or under-estimate of one individual item affects different income measures to a different extent. The influence of the over-estimate depends also on the size of the interest and of the labour charge on the farm concerned.

Example of Calculation of Farm Income.

	Per annum. £	£
Gross Income:		
Butterfat Income	1,193	
Sideline Income	454	
Total		1,647
Gross Costs:		
Cash Costs	574	
Depreciation	110	
Interest	343	
Labour	673	
Total		1,700

Farm Income
$= £1647 - £574 - £110 = £963.$

Return to Labour
$= £1,647 - £574 - £110 - £343 = £620.$

Return to Capital
$= £1.647 - £574 - £110 - £673 = £290.$

Return to Management
$= £1,647 - £574 - £110 - £343 - £673 = - £53.$

$$\text{Rate of return on capital} = \frac{290}{\text{Total Farm Capital}} \times \frac{100}{1} = 3{\cdot}9 \text{ per cent.}$$

$$\text{Return per adult male equivalent} = \frac{£620}{\text{No. of Adult Male Equivalents}}$$

$= £457$

The return to capital can be expressed as a rate (percentage) of total capital invested, and return to labour can be expressed as the labour return per adult male equivalent working on the farm.

It is notable that *farm income* is affected by the size of the farm *since it includes return to capital and labour.* The deduction of interest and labour costs—which vary with farm size—eliminates part, but not all, of the differences between farm income attributable to size alone. Farm income includes no allowances for use of farm perquisites and no allowance for use of the farm home.

3. COSTS AND INCOMES.

Economic Characteristics of the Farms.

The data in Table III set out the major economic characteristics of the farms in the survey, in terms of averages for each region.[5] As is the case for all of the data presented in this report, the results are averages for the three years 1950-51 to 1952-53, unless otherwise specified.

[5] During the analysis of the schedules, the original regional classification of the farms in the Richmond-Tweed region was amended. Farmers in the three sub-regions (see Table II) within the Richmond-Tweed were grouped into two groups—those on "Big Scrub" soils and those on other land types within the Richmond-Tweed region.

It should be noted that the following notes refer to "eligible" farms (see p. 118) in each region and are not necessarily representative of all farms in the region.

TABLE III.

Economic Characteristics of the Farms: By Regions.

Characteristics.	Unit.	Region.						State.	Commonwealth.
		Richmond–Tweed.		Clarence.	Macleay.	South Coast.	Inland.		
		Big Scrub.	Other.						
Number of farms ...		30	84	34	39	29	15	231	1,042
				Average per farm.					
Production	lb. c.b.	8,766	7,727	6,727	6,303	10,165	9,045	7,866	8,462
Number of cows ...	No.	51	56	43	41	54	45	50	44
Adult Male Equivalents	No.	1·6	1·6	1·6	1·5	1·8	1·7	1·6	1·6
Total Area	Acres.	146	261	248	210	406	259	254	296
Capital	£	7,047	7,205	6,525	5,976	8,170	8,755	7,099	7,816
Production—									
Per Adult Male Equlvalent.	lb. c.b.	5,464	4,700	4,313	4,103	4,658	5,378	4,842	5,286
Per cow	lb. c.b.	174	139	158	153	187	201	158	192
Per Acre	lb. c.b.	60	30	27	30	25	35	31	29
Per £100 Capital ...	lb. c.b.	124	107	103	106	124	103	111	108

Table III indicates the structure of the dairy farms in each region. On the average for the state as a whole, the farms surveyed had an average size of 254 acres, carried 50 cows, were operated by 1.6 adult male equivalents[6] and produced 7,866 lb. of commercial butter per annum. Average capital invested per farm was £7,099.

As compared with the average throughout the Commonwealth (which is influenced mainly by Victoria and Queensland in addition to New South Wales) the farms in New South Wales had more cows, smaller areas, smaller capital investment per farm and lower average production per farm.

Differences in the organization of the farms between regions are revealed in the table. The Clarence and the Macleay were characterized by lower production per farm, smaller herds, and by labour costs per farm which were almost as high as those in other regions. Farms in the Clarence and Macleay were also characterized by a lower capital investment than in other regions. Farms in the South Coast were larger than average in terms of the labour force, acres, number of cows carried and capital investment per farm.

[6] Adult male equivalents is a term used to measure the total farm labour force. It is the sum of all the different classes of labour (adult males, adult females, boys and girls) each included at its appropriate annual wage based on the Federal Dairy Award, divided by the annual wage for an adult male.

These differences in organization are also reflected in the measures of production per adult male equivalent, per cow and per acre in the different regions. Production per cow, which largely reflects the standard of feeding, was notably higher in the South Coast and Inland regions, and was also above average in the Big Scrub region.

Production per £100 of capital invested was highest in the Big Scrub and South Coast regions. In the Big Scrub, this high level of production per £100 of capital, in conjunction with the high production per labour unit, together reffected the favourable environmental conditions in this region. In the South Coast, the high production per £100 of capital reflected a more intensive and larger scale of operations—the production per labour unit being low as compared with the production in the Richmond-Tweed and Big Scrub regions. More intensive use of labour in the South Coast had resulted in a decline in production per labour unit, but a high level of production per cow and per £100 of capital.

Use of the measure *output per adult male labour unit* shows that the Macleay region, on the average, produced 4,103 lb. c.b. for each male labour unit employed, whereas the corresponding output in the Big Scrub was 5,464 lb. c.b. This is one of the most critical factors influencing costs of production, because labour costs are such an important proportion of the total. Relatively large increases in expenditure on other items of costs can be profitably incurred to increase the production obtained from the fixed quantities of available farm labour. There is evidence in the cost structure revealed by the survey of underemployed labour and a shortage of capital in the industry. If this is so, it follows that additional expenditure on cost items other than labour will increase production and reduce labour costs per unit of production.

The majority of the farmers in the Big Scrub, South Coast and Inland regions produced above 5,000 lb. per labour unit. Some farms in the Richmond-Tweed were affected by floods during the survey period and this would reduce production on these farms. The majority of the farms in the survey in the Macleay region produced less than 5,000 lb. per adult labour unit.

The criterion of production per adult male labour unit is an important one because labour costs represent such an important part of total costs. The relative position of each region in this respect can be assessed from the data in Table IV which shows the number of farms in each region which produce above 5,000 lb. commercial butter per adult male unit.

TABLE IV.

Classification of Farms According to Production Per A.M.E.

Production per A.M.E.	Region.						State.
	Richmond-Tweed.		Clarence.	Macleay.	South Coast.	Inland.	
	Big Scrub.	Other.					
lb. c.b.	Number of Farms.						
Below 5,000 ...	14	50	22	34	12	6	138
5,000 or above	16	34	12	5	17	9	93
Total ...	30	84	34	39	29	15	231

The Inland, South Coast and Big Scrub were the only regions in which there were more farms producing above 5,000 lb. c.b. per A.M.E. than below. Only 93 of the 231 farms produced above the 5,000 lb. c.b. level.

Costs of Production and Incomes.[7]

An adequate description of the financial position of the farmers during the survey period depends on information relating to the incomes earned, costs incurred, the level of debts and on the amount of capital available for use by the farmer.

Data relating to average costs and average income per farm are presented in Table V. A detailed description of the method by which these calculations were made is presented in Part 2, but the following main features need to be borne in mind when considering these data:

Cash Costs.—Include all annual cash operating expenses paid by the farmer. (For details see Appendix, Tables II and III.)

Depreciation.—Is calculated by use of annual depreciation rates based on the expected life of each asset, applied to original cost for plant and machinery, and to bank security values for land improvements.

Labour.—All labour engaged on the farm work, whether paid for in cash (as hired labour) or not (family labour) was included, the costs being imputed at award rates for all labour other than casual and contract labour.

Interest.—Was imputed at a rate of 4.65 per cent. on total capital invested. (As interest was included in this way, no additional interest cost was included for interest actually paid on borrowed money, or for rent paid on land rented.)

[7] Additional information, setting out the costs of production per pound of commercial butter, is presented in Appendix I.

In the estimates in Appendix I, depreciation is measured by the amounts claimed by farmers in their income tax return, and differs from the estimates used in the calculation of incomes earned by the farmers, as presented in the main report.

TABLE V.

*Costs and Incomes per Farm: By Regions.**

Item.	Region.						State.
	Richmond–Tweed.		Clarence	Macleay	South Coast.	Inland.	
	Big Scrub.	Other.					
	£	£	£	£	£	£	£
	Average per Farm.						
Cash Costs	477	514	412	363	503	579	472
Depreciation	98	139	124	95	173	200	132
Interest	328	335	303	278	380	407	330
Labour	796	816	774	762	870	834	806
Gross Cost	1,699	1,804	1,613	1,498	1,926	2,020	1,740
Gross Income	1,854	1,750	1,453	1,282	2,123	2,059	1,708
Return to Management	155	— 54	— 160	— 216	197	39	— 32
Butterfat Income ...	1,447	1,261	1,122	1,011	1,718	1,497	1,295
Sideline Income	407	489	331	271	405	562	413
Farm Income	1,279	1,097	917	824	1,447	1,280	1,104
Family Income	1,171	985	862	704	1,348	1,101	997
Return to Labour ...	951	762	614	546	1,067	873	774
Return to Capital ...	483	218	143	62	577	439	298
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Rate of Return to Capital	7	4	2	1	7	5	4

*In Appendix II, frequency distributions showing the number of farms in each income group in each region are presented.

Components of costs and income in each region are presented in Table V. Important facts emerging include:—

(*a*) The State average gross cost per farm was £1,740, and gross income £1,708, resulting in a net loss of £32 per farm. Since cash costs were £472 and gross butterfat income £1,295, a sum of £823 plus cash income from sidelines was available to pay wages, interest and depreciation.

Average butterfat income per farm was highest in South Coast (£1,718), Inland (£1,497) and Big Scrub (£1,447) and lowest in Macleay (£1,011), Clarence (£1,122) and Richmond-Tweed (£1,261).

Sideline income (mostly from pigs) averaged £413, varying between £271 in Macleay and £562 in Inland.

(*b*) Cash costs were fairly consistent, varying between £363 in Macleay and £579 in Inland. These were very much lower, per farm, than the level prevailing throughout the Commonwealth as a whole.

(*c*) There was little difference in labour costs between regions, the highest being South Coast £870 and the lowest Macleay £762.

(*d*) Interest costs, being imputed at 4.65 per cent. on total capital, reflect the level of total capital per farm in each region.

(*e*) Depreciation is a measure of wear and tear on plant, machinery, buildings and structural improvements. The high depreciation cost in the Inland region reflects the higher investment in plant in regions where fodder cropping or pasture conservation is a necessary part of dairy farm operations. By contrast, the depreciation cost in the Big Scrub region is low, as would be expected in a region where less pasture and crop conservation occurs.

The effects of variations in farm organization and management between regions can be assessed by use of different measures of income earned on the farms. (For details of each income measure, see page 126.)

Farm Income.—Measures the return to the farmer's labour and management and the interest yield on capital (i.e., gross income minus depreciation and cash costs). It is a measure of scale of operations as well as of efficiency of production.

Family Income.—Is farm income *less* actual cash payments for hired labour, interest on borrowed capital and rent of land. It is a measure of the income available to the farm family.

As is shown in Table V, the level of farm and family income was notably higher in the South Coast region than in other regions; Clarence and Macleay farmers earned farm incomes some £600 less per year than those in the South Coast. The payments for cash rent, interest on borrowed capital and cash wages, which represent the difference between farm income and family income, averaged £107 per region. The farm family had, on the average, £997 available for spending. This is also the measure of the return to the farm family for its own labour and for interest on the capital equity of the farm family in the farm.

The income available to the farm family ("family income") was highest in South Coast (£1,348), Big Scrub (£1,171) and Inland (£1,101) and lowest in Macleay (£704), Clarence (£862) and Richmond-Tweed (£985).

The *return to labour* measures the return after deducting from gross income costs allowed for depreciation, cash costs, and interest on total farm capital. It is a measure of the earnings of farm labour (family and hired), and needs to be interpreted in the light of the fact that an average of 1.6 adult male equivalents per farm were working on the farms. Thus the average return to labour of £774 was a return for the labour of 1.6 adult male units, or an average of approximately £484 per labour unit.

The *rate of return to capital* is the return to capital (gross income minus labour, depreciation and cash costs), and averaged 4 per cent. for the whole State over the survey period. The South Coast and Big Scrub regions showed returns of 7 per cent., compared with returns of 1 per cent. and 2 per cent. in the Macleay and Clarence regions respectively.

Three regions showed a positive return to management, South Coast £197, Big Scrub £155 and Inland £39, and three showed a loss:—Macleay, £216; Clarence, £160; and Richmond-Tweed, £54.

Farm Capital, Costs and Income related to Production.

The analysis which follows compares the organization and cost structure of the farms when grouped in accordance with average production per farm. The farms have been classified in groups, ranging from those with less than 5,000 lb. c.b. per farm, to those producing over 15,000 lb. c.b. per farm. The results in Table VI show the analysis in the terms of the organization of the farms.

It is important to recognize, when interpreting the data presented below, that the results do not purport to indicate the changes which would occur if a farm in one production group increased production so as to move into another group with a higher average level of production. The data present the results for the farms as they exist, but do not present enough facts to enable all of the factors relating to scale of operations to be identified. The data therefore do not necessarily present a measure of trends as production increases, but represent points on a series of different production "curves".

Some of the differences recorded for production groups may be associated to some extent with the existence of relatively high representation of a region in the production group. An examination of the distribution of farms in each production group suggests that the representation of each region in each production group is not random[8]; the Macleay and Clarence are strongly represented in the producers averaging less than 7,500 lb. per farm, and the South Coast, Big Scrub and Richmond-Tweed provide most of the farmers in the high producing groups.

An examination of Table VI reveals the following:—

(*a*) The majority of the farms (54.5 per cent.) produced less than 7,500 lb. c.b. per farm, and approximately 25 per cent. produced less than 5,000 lb. per farm.

(*b*) In respect of labour, the high producing farms made use of more labour, but production per labour unit was much higher on the high producing farms. The higher producing farms

[8] The distribution of the farms in each region according to production per farm was as follows:—

Production per Farm.	Region.						State.
	Richmond–Tweed.		Clarence	Macleay	South Coast.	Inland.	
	Big Scrub.	Other.					
lb. c.b.	Number of Farmers.						
1,000– 4,999 ...	2	18	14	14	6	2	56
5,000– 7,499 ...	11	29	6	16	4	4	70
7,500– 9,999 ...	9	17	6	6	6	4	48
10,000–12,499	4	16	8	1	4	1	34
12,500–14,999	2	...	...	1	5	4	12
15,000 and above ...	2	4	...	1	4	...	11
Average Production per Farm, lb. c.b. ...	8,766	7,727	6,727	6,303	10,165	9,045	7,866

x^2 test: $x^2 = 63{\cdot}82$; $n = 25$; $P < {\cdot}01$.

produced three times as much per farm (18,076 lb., compared with 6.304 lb.) with only 150 per cent. of the labour force of the smaller producers. These differences reflect more favourable environmental conditions on the larger farms, as well as differences in efficiency of management.

(*c*) The higher producing farms were larger in terms of labour force, cows milked, total capital invested and in value of land per farm. A marked rise in production per £100 of capital occurred in the groups producing above 12,500 lb. per farm.

The general conclusion which may be reached from this presentation is that the scale of operations on many of the dairy farms, particularly those producing less than 7,500 lb. c.b. was a major factor limiting not only the incomes earned, but also the efficiency with which the available resources were actually used. It is clear that the small scale of operations restricted the income per farm. But the evidence presented above suggests that the efficiency of use of the resources available on the farm—the labour force, the cows, the plant and the land—tended to increase as the scale of operations on the farm increased. This may have been due in large part to differences in the physcial characteristics of the land on farms in different production groups but it also reflects the inability of small farmers to make efficient use of the restricted resources available to them.

TABLE VI..

Farm Characteristics in Relation to Production per Farm.

Item.	Production per Farm—lb. c.b.						
	Less than 5,000.	5,000 to 7,499.	7,500 to 9,999.	10,000 to 12,499.	12,500 to 14,999.	15,000 and above.	All Farms.
Number of farms ...	56	70	48	34	12	11	231
	Average per Farm.						
Production—lb. c.b. ...	3,988	6,304	8,653	11,099	13,413	18,076	7,866
A.M.E. (Labour Units) —No.	1·4	1·5	1·7	1·9	1·9	2·3	1·6
Cows—No.	31	43	52	68	71	103	50
Production per £100 capital—lb. c.b.	85	112	113	113	121	136	111
Capital Investment—	£	£	£	£	£	£	£
Water Supply ...	120	130	128	178	225	262	145
Fences and Land Works.	360	396	402	511	634	686	432
Buildings	506	583	695	1,118	987	1,415	727
Total Land Improvements.	986	1,109	1,225	1,807	1,846	2,363	1,304
Land	2,044	2,421	3,546	4,282	5,672	6,112	3,182
Land and Improvements.	3,030	3,530	4,771	6,089	7,518	8,475	4,486
Plant	406	540	646	944	740	949	619
Livestock	1,277	1,579	2,227	2,799	2,838	3,860	1,994
Total Capital ...	4,713	5,649	7,644	9,832	11,096	13,284	7,099

As shown in Table VII, the average gross costs per farm ranged from £1,239 in the lowest to £2,967 in the highest production group. All items of cost were higher in the high producing groups, but the difference in costs was much smaller than the difference in gross income.

The net effect was that generally profits per farm were highest on the highest producing farms and on the average, the 7,500 to 10,000 lb. production group (average production 8,653 lb. c.b.) was about at the "break even" point after including all costs, including imputed items. Generally losses were experienced below this average level of production.

Care is needed to avoid the assumption that these recorded differences represent cost levels which would prevail if a farm in any one production group altered its present system of management, and increased its average level of production. The average characteristics recorded for each production group would not necessarily apply to a farm at present in another group, if it were able to increase production.

TABLE VII.

Major Cost Items and Incomes in Relation to Production per Farm.

Item.	Production per Farm lb. c.b.					
	Less than 5,000	5,000 to 7,499	7,500 to 9,999	10,000 to 12,499	12,500 to 14,999	15,000 and over.
Number of Farms	56	70	48	34	12	11
Average Production per Farm—lb. c.b.	3,988	6,304	8,653	11,099	13,413	18,076
	£	£	£	£	£	£
Cash Costs	261	387	517	690	1,763	1,002
Depreciation	78	119	149	189	190	186
Interest	219	263	356	457	516	618
Labour	681	729	842	934	923	1,161
Gross Cost	1,239	1,497	1,863	2,300	2,289	2,967
Gross Income	898	1,360	1,870	2,422	2,788	3,952
Return to Management ...	− 341	− 137	7	122	499	985
Butterfat Income	657	1,033	1,413	1,826	2,188	3,082
Sideline Income	241	326	457	596	600	869
Farm Income	559	854	1,204	1,543	835	2,764

4. CAPITAL INVESTMENT, EXPENDITURE AND THE CASH POSITION OF FARMERS.

Capital Investment Per Farm.

The estimates of capital investment per farm which are presented in Table VIII are based on land security values for land and improvements, depreciated original cost for plant and standard values for livestock.

The average investment per farm ranged from £5,976 in the Macleay region to £8,756 in the Inland region. In each case the land and land improvements were the major items of capital, being 65 per cent. of total capital in these regions. For the State as a whole, 45 per cent. of the capital was invested in land, 24 per cent. in dairy stock, 18 per cent. in land improvements, 9 per cent. in plant and 4 per cent. in livestock other than dairy cattle.

During the field interviews, each farmer was asked his estimate of the market value (in summer of 1953-54) of his farm. Estimates were given for land and improvements, and for the walk-in-walk-out value of the farm. Average walk-in-walk-out values ranged from £14,287 in the Inland region to £9,879 in the Macleay. These estimates included the value of the farm house, which was excluded from the estimates of capital investment in the survey analysis.

TABLE VIII.

*Capital Investment per Farm: By Regions.**

Item.	Region.						State.
	Richmond–Tweed.		Clarence	Macleay	South Coast.	Inland.	
	Big Scrub.	Other.					
	Average per Farm.						
	£	£	£	£	£	£	£
Water Supplies ...	146	165	117	72	197	187	145
Fencing, etc.	301	427	400	403	627	491	432
Buildings	710	727	767	597	897	682	727
Total Land Improvements.	1,157	1,319	1,284	1,072	1,721	1,360	1,304
Land	3,652	3,059	2,724	2,845	3,400	4,347	3,182
Land and Improvements.	4,809	4,378	4,008	3,917	5,161	5,708	4,486
Plant	429	626	720	451	731	945	619
Dairy Cattle	1,516	1,803	1,502	1,392	1,944	1,723	1,665
Beef Cattle	...	129	32	53	133	...	77
Sheep	...	1	...	1	4	72	6
Pigs	218	157	147	57	106	220	144
Horses	74	111	115	105	92	84	102
Total Livestock ...	1,808	2,201	1,797	1,608	2,278	2,103	1,994
Total Capital	7,047	7,205	6,525	5,976	8,170	8,755	7,099
	Proportion of Total Capital.						
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Land Improvements ...	16·4	18·3	19·7	17·9	21·1	15·4	18.4
Land	51·8	42·5	41·7	47·6	42·1	49·6	44·8
Plant	6·1	8·7	11·0	7·6	8·9	10·8	8·7
Dairy Cattle ...	21·5	25·0	23·0	23·3	23·8	19·7	23·5
Pigs	3·1	2·2	2·3	1·0	1·3	2·5	2·0
Other Stock	1·1	3·3	2·3	2·6	2·8	1·0	2·6
Total	100·0	100·0	100·0	100·0	100·0	100·0	100·0
	Farmers' Estimates.						
	£	£	£	£	£	£	£
Land and Improvements.	10,897	9,233	8,912	7,036	9,438	11,260	9,188
Walk-in Walk-out value	13,167	12,530	11,962	9,513	13,041	14,287	12,198

* In Appendix II, frequency distributions of capital invested per farm, and of farmers' estimates of market values of the farms, are presented.

TABLE VIII—*continued.*

Item.	Region.						State.
	Richmond–Tweed.		Clarence	Macleay	South Coast	Inland.	
	Big Scrub.	Other.					
	Capital Investment per Cow.						
	Number of Cows						
Average Herd size ...	51	56	43	41	54	45	50
	£	£	£	£	£	£	£
Total Land Improvements.	22·7	23·5	30·0	26·1	31·9	30·2	26·1
Land	71·6	54·6	63·3	69·4	63·7	96·6	63·6
Total Land and Improvements.	94·3	78·1	93·3	95·5	95·6	126·8	89·7
Plant	8·4	11·2	16·7	11·0	13·5	21·0	12·4
Dairy Cattle	29·7	32·2	35·0	34·0	36·0	38·3	33·3
Other Stock	5·7	7·1	6·8	5·2	6·2	8·4	6·6
Total Livestock ...	35·4	39·3	41·8	39·2	42·2	46·7	39·9
Total Capital	138·1	128·6	151·8	145·7	151·3	194·5	142·0
	Farmers' Estimates.						
Land and Improve-	214	165	207	172	175	250	184
Walk-in Walk-out value	258	224	278	232	242	318	244

The average capital investment per farm set out in Table VIII enables the following comparison between regions to be made:—

(*a*) The South Coast farms showed high values for all *land improvements* which include water supplies, fencing and buildings. The Macleay region was well below the State average in regard to land improvements.

(*b*) Values of *land* per farm were highest in the Inland (£4,347) and Big Scrub (£3,652) regions, and in each case the land value alone represented approximately 50 per cent. of the total capital value.

(*c*) The total of *land and land improvements* were highest per farm in the Inland (£5,708), South Coast (£5,161) and Big Scrub (4,809) and lowest in Macleay (£3,917), Clarence (£4,008) and Richmond-Tweed (£4,378). The long-term security value of land and improvements per cow was highest in Inland (£127), lowest in Richmond-Tweed (£78) and between £93 and £96 in the remaining four regions. The State average for all regions for long term security value per cow was £90 compared with the farmers' estimate of £185. The farmers estimate was highest in Inland (£250), Big Scrub (£214) and Clarence (£207) and lowest in Richmond-Tweed (£165), South Coast (£175) and Macleay (£178).

(*d*) The regional averages suggest that the investment per cow in land improvements (buildings, fences and water supply) tended to decrease as herd size increased, reflecting the relatively constant investment *per farm* in these items. The major

exception was in the South Coast, where land improvements per farm and per cow were much higher than in the other regions.

(*e*) Investment in plant was substantially higher in the Inland region (£945) compared with other regions, and in the South Coast (£731) and Clarence (£720) regions the investment in plant exceeded that in other regions.

(*f*) Standard values per head were used for different classes of dairy cattle, and the variations between regions in investment in dairy cattle, per cow, reflected the varying proportions of dry dairy stock on the farms.

The total capital invested per cow was highest in the inland region, largely because of higher values for land and land improvements.

(*g*) On the particular group of eligible farms in the sample, beef cattle were most frequently recorded in the South Coast and Richmond-Tweed regions, while the largest investment in pigs occurred in the Inland and Big Scrub regions.

(*h*) Investment in horses averaged £84 per farm, based on standard values of £30 per head, compared with £945 for plant. On the average farmers were still making use of approximately 3 horses per farm in all regions.

Debts of the Survey Farmers.

Estimates of the debts of the farmers were made by recording the interest paid on borrowed money as shown in the income tax return, and capitalizing this annual payment at an interest rate of 4.65 per cent. Debts on which no interest payment was recorded in the tax return during the survey years would not be included in the estimates given below. The most important omission would be in respect of outstanding hire purchase payment obligations.

On the above basis, 36 per cent. of the farmers had no debts, (See Table IX) the proportion ranging from 50 per cent. of Big Scrub farmers to 20 per cent. in the Inland region. The average debt per farm (all farms included) was £739, which represented 17 per cent. of the security value of land and improvements on the farm, and 10 per cent. of the total capital recorded. The level of indebtedness, as a percentage of the value of land and improvements was highest in the Macleay, Richmond-Tweed and Inland regions.

TABLE IX.

Debts on Dairy Farms: By Regions.

Region.	Average Interest paid per annum.	Debt per farm.	Capital per farm.	Land and Improvements per farm.	Debts as a percentage of Capital.	Debts as a percentage of Land and Improvements.	Percentage of farms with no Debts.
Richmond-Tweed—	£	£	£	£	Per cent.	Per cent.	Per cent.
Big Scrub	31·8	684	7,047	4,809	10	14	50
Other	38·6	830	7,205	4,378	12	19	27
Clarence	22·7	488	6,525	4,008	8	12	32
Macleay	42·1	905	5,976	3,917	15	23	41
South Coast	21·9	471	8,170	5,161	6	9	48
Inland	46·3	996	8,755	5,708	11	17	20
State	34·4	739	7,099	4,486	10	17	36

The average interest paid per farm was £34, and the average debt £739. This represents a comparatively low level of debts, especially when the number of debt free farmers (whose debts were included at zero in calculating the averages) are considered. It is particularly significant in the light of the emphasis thrown on the scale of operations, and on the need for increased supplies of capital, by the survey results. (See, for example, Tables VI and VII.)

Levels of Capital Expenditure.

Some measure of the financial progress and levels of savings available to the farmers for investment is provided by the analysis of expenditure on capital assets presented in Table X.

The expenditure sets out the actual purchase of capital items made each year, even though some of the purchases may have been financed by borrowing or by means of a hire purchase contract. An average expenditure of £479 was recorded, comprised of £272 for farm assets and £207 for household items.

The major items of farm investment during the survey years were dairy stock (average £66 per farm per annum), farm machinery (£42), tractors (£41) and purchases of land (£32).

Car purchases were the major item of household capital expense, averaging £142 per annum.

The data as presented on a State basis in Table X do not reveal any significant trends in the rate of investment during the three years of the survey.

TABLE X.

Expenditure on Capital Assets 1950-51 *to* 1952-53.

Expenditure.	Average Expenditure per Farm.			
	1950–51.	1951–52.	1952–53.	Average Annual Expenditure.
	£	£	£	£
Farm Assets—				
Purchase of Farm or of Land	33	61	3	32
Clearing Land	7	16	21	15
Water Improvements ...	18	27	30	25
Farm Buildings	25	24	46	32
New Fences	12	16	29	19
Tractors	34	40	50	41
Farm Machinery	40	34	50	42
Bulls and Dairy Stock ...	72	54	72	66
Total Farm Assets ...	241	272	301	272
Household—				
Cars	171	96	161	142
Household Items	20	33	30	28
House...	29	45	38	37
Total Household	220	174	229	207
Total All Items	461	446	530	479
Average Return Paid by Factory for sale of cream and milk.	1,087	1,096	1,772	1,318

TABLE XI.

Factory Incomes and Capital Expenditure: By Regions.
Average Per Farm.

Region.	Factory Income.			Expenditure on Farm Assets.			Expenditure on Cars.			House and Household Expenditure.			Total Capital Expenditure.		
	1950–51.	1951–52.	1952–53.	1950–51.	1951–52.	1952–53.	1950–51.	1951–52.	1952–53.	1950–51.	1951–52.	1952–53.	1950–51.	1951–52.	1952–53.
	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£
Richmond–Tweed—															
Big Scrub	1,243	1,240	1,900	113	153	294	197	35	80	48	76	187	358	264	561
Other	1,033	995	1,792	300	265	316	181	134	246	52	68	52	533	467	614
Clarence	881	950	1,562	200	259	274	83	45	111	15	28	27	298	332	412
Macleay	856	983	1,401	156	173	214	121	83	77	20	94	24	297	350	315
South Coast	1,558	1,438	2,220	278	358	459	240	139	107	56	147	100	574	644	666
Inland	1,211	1,338	1,973	422	668	547	251	73	272	170	76	60	843	817	879
State	1,087	1,096	1,772	241	272	301	171	96	161	49	78	68	461	446	530

Capital Expenditure and Farm Income.

In an effort to reveal significant variations in capital expenditure as between farmers with different incomes, the data were also analysed in accord with the average farm income earned by the different farmers. The most significant trend revealed by this analysis (see Table XII) was the marked increase in rate of investment in the two higher income groups, (above £1,000 farm income) and particularly the group with incomes above £1,500 per year, in which the average factory income is some £700 above the level of the next lowest group. The rise in this group was particularly evident in regard to water improvements, fences, buildings and livestock purchases. By contrast, the three lower income classes, including all of the farms with farm incomes of less than £1,000 per annum, had a relatively similar level of capital investment. It was only when farm income rose above £1,000 that a significant rise in the rate of investment occurred corresponding roughly to a production level above 7,500 lb. c.b. per annum.

TABLE XII.

Expenditure on Capital Items in Relation to Farm Income per Annum.

Item.	Farm Income.					
	Less than £500.	£500–£749.	£750–£999.	£1,000–£1,499.	Over £1,500.	State.
Number of Farmers ...	19	58	49	59	46	231
	Average per Farm per Year.					
	£	£	£	£	£	£
Factory Income (gross)	636	895	1,090	1,478	2,173	1,318
Farm Assets—						
Purchase of Farm or Land.	...	12	35	42	55	32
Clearing	15	22	9	15	11	15
Water Improvements	15	18	24	26	39	25
New Fences	16	15	14	20	29	19
Farm Buildings ...	37	20	24	37	46	32
Bulls or Dairy Stock ...	30	44	69	69	103	66
Tractors	37	26	31	65	43	41
Machinery	33	37	36	66	61	42
Total Farm Assets	183	182	207	298	332	240
Household—						
Cars	32	113	122	178	202	142
Household Items ...	5	24	20	40	34	28
House	39	47	11	16	80	37
Total Household and Car.	37	137	142	218	236	170
Total All Items ...	259	378	395	574	703	479

TABLE XIII.

Capital Expenditure on Farm Assets by Regions—1950-51 *to* 1952-53. *Average Per Farm Per Annum.*

Item.	Region.						State.
	Richmond–Tweed.		Clarence	Macleay	South Coast.	Inland.	
	Big Scrub.	Other.					
	£	£	£	£	£	£	£
Farm Purchase ...	5	47	28	1	...	156	32
Clearing	4	13	11	16	37	6	15
Soil Conservation ...	...	...	...	...	...	3	...
Drainage	...	2	8	...	...	...	2
Water Improvements	8	36	10	7	33	31	23
New Fences	8	23	12	9	32	31	19
Farm Buildings ...	30	23	32	29	51	61	32
Tractors	19	39	25	36	77	79	41
Machinery	28	42	39	33	81	127	42
Bulls and Dairy Stock	86	68	81	50	53	52	66
Totals	188	293	246	181	364	546	272

The major purchases of land by the survey farmers occurred in the Inland and Richmond-Tweed regions. Farmers in the Inland region also made higher investments in machinery, tractors and buildings than did farmers in the other regions. The low levels of investment in the Big Scrub region reflect the particular system of management adopted in this region.

These differences in capital expenditure on different assets reflected generally the differences in the total capital investment in each region as set out in Table VIII, e.g., the Richmond-Tweed, South Coast and Inland regions had the highest investment in water improvements, and also showed the highest expenditure in investment in these assets during the survey period. The South Coast region also showed both higher total investment and higher expenditure in fences and in buildings and in plant. Similarly, the low total investment in the Big Scrub region in land improvements and plant was confirmed by the low actual expenditure on these items during the survey period.

Cash Position of Dairy Farmers.

The estimates of the financial earnings of dairy farmers presented above are based on accounting concepts which distinguish between annual earnings and expenditures on the one hand and capital gains and expenditure on the other. The management of the farms in practice is not based on such a clear cut distinction between the two types of expenditure, and the transactions in actual cash assume great importance. In this section, an effort is made to present some measure of the cash position of the farmers.

The data so far presented enable a measure to be made of the cash incomes of farmers. The income position may be represented as follows:—

	£
Gross Income	1,708
Butterfat Income	1,295
Sideline Income	413

The calculations presented below are based on the assumption that the sideline income, 48 per cent. of which was comprised of gain on livestock, was received as cash. Much of this gain would be represented by a cash transaction of the same magnitude or would be represented by gains in inventory of stock which could be readily sold for cash.

Cash payments made by farmers were as follows:—

	£
Cash expenses	506
Capital expenditure on farm assets	272
Rent of land	38
Interest on borrowed capital	34
	£850

If this £850 is substracted from the gross income of £1,708, the remaining cash balance is £858.

Some of the farm capital expenditure would be financed by borrowing, but most of it was not; some debt repayments from earlier years would also be made, and if the capital expenditure from year to year were constant, the cash paid out would be approximately equal to the capital expenditure. For the purpose of the analysis of cash transactions, it is assumed that all of the capital expenditure was actually paid in cash. This will overstate the cash payments to the extent that borrowing

during the survey period exceeded capital repayments of money borrowed in earlier periods. This overstatement is considered to be small, and in any case may be presumed to be approximately equal as between regions so that the comparison of the relative cash position in each region is not affected by the assumption made.[9]

On this basis the "average" farmer would have £858 available for:

(i) interest on his own equity in the farm, the interest on borrowed capital having been already allowed for in the cash transactions;

(ii) the farmer's wage, and a wage for unpaid family labour not included in cash costs;

(iii) the farmer's return for his management.

The farmer would be called upon to make cash payments for living and household expenses on the farm and to establish a reserve against contingencies. These would be met from the £858 balance. This assessment of the cash position takes no account of the farm perquisites which are available on the farm, and which allow the farmer to reduce purchases of foodstuffs if he so desires.

Comparison of Regions.

Gross income and cash outlay were second highest and highest respectively in the Inland region, but Inland dairying conditions are so different from the remaining five regions, which are all coastal, that this region is not considered in the following comparisons.

South Coast had the highest gross income (£2,123), followed by Richmond-Tweed, with Macleay (£1,282) lowest. South Coast also had the highest cash outlay on farm expenses (£966) and Macleay the lowest (£664). Again, farm capital expenditure was highest in South Coast (£364) and lowest in Macleay (£181), with Big Scrub £187. The balance of cash after meeting farm expenses (the difference between gross income and total cash outlay on farm expenses) was highest (£1,155) in South Coast, the next highest being Big Scrub (£1,081), with Clarence (£740) and Macleay (£618) lowest.

Richmond-Tweed showed slightly lower gross income (£1,750) and significantly higher cash outlay (£919) than the Big Scrub region.

An analysis of the cash position of the "average farmer" in the regions surveyed indicates that the farmers in New South Wales were in a very favourable financial position by comparison with the farmers in other States.[10]

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[9] Some cash would be received by the farmers from the sale of capital assets (e.g., trade-in allowances on plant) other than livestock, but these have been ignored in the analysis.

[10] Cf. 1953 Dairy Survey. *Costs and Incomes of a Sample of Butterfat Producers in Australia.* Bureau of Agricultural Economics, Canberra. (Mimeo, July, 1955.)

TABLE XIV.

The Cash Position of Dairy Farmers: By Regions.

Item.	Region.						State.
	Richmond–Tweed.		Clarence.	Macleay.	South Coast.	Inland.	
	Big Scrub.	Other.					
	£	£	£	£	£	£	£
Gross Income	1,854	1,750	1,453	1,282	2,123	2,059	1,708
Cash Expenses	499	543	422	390	563	694	506
Interest on Borrowed Capital...	32	39	23	42	22	46	34
Cash Rent of Land	54	44	22	51	17	18	38
Capital Expenditure on Farm Assets.	188	293	246	181	364	546	272
Total Farm Cash Outlay ...	773	919	713	664	966	1,304	850
Balance of cash after meeting farm expenses.	1,081	831	740	618	1,157	755	858
Expenditure on Consumer Durables—							
Cars	104	187	80	94	162	199	142
Other	104	57	23	46	101	102	65
Total Cash Expenditure ...	981	1,163	816	804	1,229	1,605	1,057
Final Cash Balance ...	873	587	637	478	894	454	651

5. LAND USE, LAND TENURE AND THE FARM LABOUR FORCE.

Classification of Land.

The land types on each farm were recorded in detail as at 30th June, 1953.[11] Table XV shows that the average area of 260 acres was composed of 48 acres of arable flats, 47 acres of arable slopes, 91 acres of slopes suitable for grazing and 52 acres of rugged or steep land unsuited to development. There were, on the average, 177 acres of cleared land, 42 acres ringbarked or part cleared and 41 acres unimproved. Marked differences were recorded between regions; the average farm area ranged from 147 acres in the Big Scrub to 414 acres in the South Coast. Small areas of irrigated land were recorded, mainly in the Richmond-Tweed and Inland regions.

Farmers were asked to indicate the area of land on their farm suited to pasture improvement, but not yet improved. This area averaged 92 acres, ranging from 63 acres in the Clarence to 167 acres in the South Coast.

[11] Data on areas for inclusion in the cost analysis was based on the average for the three-year period of the survey and may not correspond precisely with data for 1952-53.

The area of new pasture sown per farm in the South Coast region rose from 3.5 acres in 1951 to 15 acres in 1953 and averaged 8.9 acres per annum for the three years. Smaller areas were sown in each of the other regions.

TABLE XV.

Land Classification—Pasture Land and Cropping Areas—Average Per Farm—1952-53: By Regions.

Item.	Region.						State.
	Richmond–Tweed.		Clarence.	Macleay.	South Coast.	Inland	
	Big Scrub.	Other.					
	Average Area per Farm—Acres.						
Arable flats	13	51	52	41	16	177	48
Arable slopes	34	33	33	51	127	11	47
(A) Total arable land ...	47	84	85	92	143	188	95
Flats suitable for pasture only	14	22	20	5	7	1	15
Other flats	9	9	5	10	1	12	7
Slopes suitable grazing only ...	49	75	111	70	213	36	91
(B) Total suitable grazing only.	72	106	136	85	221	49	113
(C) Area rugged or steep or without potential.	28	80	29	42	50	25	52
Total A + B + C ...	147	270	250	219	414	262	260
1. Area cleared	145	172	155	114	319	212	177
2. Ringbarked or part cleared	2	52	62	34	47	39	42
3. Unimproved	...	46	33	71	48	11	41
Total	147	270	250	219	414	262	260
Irrigated	...	1·1	·2	·1	·5	2·7	·7
Area suited pasture improvement not yet improved.	68	84	63	79	167	134	92
Area sown to pastures—							
1951	...	1·2	4·9	3·5	3·5	·1	2·2
1952	...	3·1	2·6	3·9	8·2	2·3	3·3
1953	·6	3·9	5·4	4·8	15·0	6·1	5·4
Total Sown from 1–7–50 to 30–6–53.	·6	8·2	12·9	12·2	26·7	8·5	10·9
Pasture Hay Cut and Conserved Tons (Average 1951–53).	...	·4	...	·3	2·9	8·0	3·2
Crops Harvested — Acres, 1952–53.	3	8	11	8	14	38	10

Land Tenure.

Most of the farms (182) in the survey were freehold, with 11 perpetual leases, and 9 Crown leases. There were 4 farms in process of alienation and 25 leased under tenure other than Crown leases, e.g., cash rental.

TABLE XVI.

*Land Tenure: Owner-Operator and Share Farms: By Regions.**

Predominant Form of Land Tenure.	Region.						State.
	Richmond–Tweed.		Clarence.	Macleay.	South Coast.	Inland	
	Big Scrub.	Other.					
	Number of Farms.						
Freehold	24	68	28	27	26	9	182
Crown Tenure—							
1. Perpetual Lease	1	5	...	2	2	1	11
2. Other Crown	...	2	1	2	...	4	9
3. In process of Alienation ...	...	2	1	...	...	1	4
Total	25	77	30	31	28	15	206

* Farms listed as "cash rental" have been omitted from the table. In some cases other areas of land under other tenures existed on the farm concerned, but the tenure of the major portion of the farm land is recorded.

The predominance of the freehold tenure is characteristic of the dairy regions throughout New South Wales. Commonly, the freehold owner has a sharefarmer who actively operates the farm, with some supervision from the owner. There were 46 sharefarmers and 25 tenant farmers on the 231 farms in the survey.

Excluding the inland region, where there were no sharefarmers or tenant farmers, the highest percentage of sharefarmers (45 per cent.) was in the South Coast region, other regions varying from 12 per cent. in the Richmond-Tweed to 27 per cent. in the Big Scrub.

Information was collected as to the extent of participation in farm work by the owners, many of whom were retired farmers. Half of the sharefarmers operated with the owner living on the property. Most of these would be cases where the owner and sharefarmer were relatives. The owner took an active part in, or supervised, management operations on half of the sharefarms, and actively assisted in the farm work as well.

The 25 tenant farmers occurred in each region, though the small number included in the Richmond-Tweed, and the high proportion in Macleay, are notable.

TABLE XVII.

Tenant and Sharefarmers: By Regions.

Item.	Region.						State.
	Richmond–Tweed.		Clarence.	Macleay.	South Coast.	Inland	
	Big Scrub.	Other.					
			Number.				
Number of farms in region ...	30	84	34	39	29	15	231
Number of share-farmers ...	8	10	6	9	13	...	46
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Sharefarmers as percentage of total farms in region.	27	12	18	23	45	...	20
			Number.				
Owner lives on property ...	3	5	4	6	5	...	23
Owner supervises farmwork ...	5	2	4	5	6	...	22
Owner actively assists... ...	4	2	4	4	7	...	21
Tenant Farmers—							
Number of tenant farmers ...	5	3	4	9	4	...	25

Farm Labour Force.

The predominant feature of the farm labour force in the dairy industry is the almost complete dependence on family labour. In 1952-53 only 11 per cent. of the farms had any hired labour at all, though on the majority of farms (64 per cent.) the farm wife assisted in the farm work—generally milking, feeding calves and washing up.

The dependence on family labour is also evident from the fact that on 41 per cent. of the farms adult family labour—i.e., persons related in some way to the operator—was used; and on 15 per cent. of the farms children above the age of 14 years assisted with the farm work. (No count of children below this age was made.) There were 22 boys aged 14-16, 9 aged 17, 4 aged 18, and 2 aged 19 on the survey farms. Seven girls aged 14-19 were employed. On 20 of the farms (9 per cent.), the farmer worked with no permanent labour to assist him.

The farmers included in the survey had, on the average, been farming on their own account since 1934—i.e., some 20 years. The average age of the farmers was 47 years, and these average characteristics also represented the average for each region with the exception of the Inland, where farmers were older (average age 50 years) and had on the average been farming on their own account since 1924—some ten years longer than the farmers in other regions.

The age distribution of the farmers was as shown in Table XVIII.

TABLE XVIII.

Frequency Distribution of Age of Farmer.

Age of Farmer.	Number of Farmers.	Age of Farmer.	Number of Farmers.
Years—		Years—	
Under 23	1	43–47	30
23–27	8	48–52	32
28–32	18	53–57	26
33–37	30	58–62	24
38–42	39	63 and over	23

The highest proportion of farmers (39 out of 231) was in the 38 to 42 years group. There was a fairly even distribution of farmers in the ages between 33 and 52. It appears that farmers generally commence as farm operators at an age of about 35 and that there is only a very gradual falling off in numbers up to the age of 62.

Most of the farmers (86 per cent.) were raised on a farm and 51 per cent. of the farmer's wives were also raised on a farm.

In Table XIX the size of the farm labour force is shown in relation to the cows managed on each property. It is evident that, despite a trend for larger herds to be managed by larger labour forces, the labour force required to manage a particular herd size varied widely.

TABLE XIX.

Farm Labour Force and Herd Size.

Farm Labour Force. Adult Male Units.	Herd Size (Number of Cows).					
	15–24	25–34	35–44	45–59	60 or more.	Total.
	Number of Farms.					
1	1	8	5	3	1	18
1·1—2·0	11	35	44	43	30	163
2·1—3·0	1	1	4	18	26	50
Total	13	44	53	64	57	231

The data in the table reveal that a farm labour force of 1.1 to 2.0 labour units (inclusive)was used to operate herds varying from less than 24 to more than 60 cows. This situation may have reflected the particular disadvantages of the environment in some instances, but it is apparent that the costs on farms which have such a low ratio of cows managed per man must have been at high levels, and correspondingly high levels of production would have to be obtained in order to reduce costs of production per unit. The costs imputed for labour were a major item of costs and the prevalence of the low ratio of cows managed per man was a major factor influencing the efficiency of production on the farms.

6. HERD MANAGEMENT.

Herd Size and Carrying Capacity.

The major features relating to herd size and carrying capacity in each region are presented in Table XX. The average area developed per cow ranged from 2.9 acres in the Big Scrub to 5.9 acres in the South Coast, and the average production per acre ranged from 27 lb. c.b. in the Clarence to 60 lb. in the Big Scrub.

TABLE XX.

Milking Cows Carried Per Acre: By Regions.

Item.	Unit.	Region.						State.
		Richmond–Tweed.		Clarence.	Macleay.	South Coast.	Inland.	
		Big Scrub.	Other.					
Farm Area	Acres	146	261	248	210	406	259	254
Herd size	No.	51	56	43	41	54	45	50
Area developed ...	Acres	144	224	194	156	325	245	...
Area developed per cow	Acres	2·9	4·0	4·6	3·7	5·9	5·6	...
Production per cow ...	lb. c.b.	174	139	158	153	187	201	158
Production per acre (total farm area).	lb. c.b.	60	30	27	30	25	35	31

The average number of milking cows per farm was highest in the Richmond-Tweed region (56), South Coast (54) and Big Scrub (51) and lowest in Macleay (41), Clarence (43) and Inland (45); the average for all regions in the State was 50. These figures are averages for the three years 1950-51 to 1952-53, but as they are dependent upon the farmer's memory they should be accepted with some reservations. It should be noted also that data on production per cow depend on these figures. The data are valid for purposes of comparison between regions.

The average area of developed land per farm was much higher in the South Coast region (325 acres) than in any other region, indicating that there was a greater proportion of poorer quality land being used for dairying on these farms. This finding is supported by the fact that average output of commercial butter per acre (25 lb.) and average area developed per cow (5.9 acres) were lowest in the South Coast region. Excluding the Inland region, which had an average developed area of 245 acres and an average production per acre of 35 lb. c.b., the Richmond-Tweed with 224 acres of developed land was the only other region with a figure over 200 acres; then came Clarence (194 acres), Macleay (156 acres) and Big Scrub (144 acres). Output of commercial butter per acre (total farm area) was highest (60 lb.) in Big Scrub and, as stated above, lowest in South Coast. Inland was 35 lb., Macleay 30 lb., Richmond-Tweed 30 lb. and Clarence 27 lb. c.b.

TABLE XXI.

Frequency Distribution of Herd Size: By Regions.

Number of Cows per Farm.	Region.						State.
	Richmond-Tweed		Clarence.	Macleay.	South Coast.	Inland.	
	Big Scrub.	Other.					
	Number of Farms.						
60–19	...	...	...	2	2	...	4
20–24	2	1	2	4	...	...	9
25–29	...	7	5	4	4	1	21
30–34	3	5	3	6	4	2	23
35–39	3	6	7	8	1	2	27
40–44	2	7	7	4	3	3	26
45–49	5	10	2	1	2	3	23
50–59	8	17	5	6	4	1	41
60–69	3	12	...	1	1	2	19
70–125	4	19	3	3	8	1	38
Total number of Farms...	30	84	34	39	29	15	231

Average production of commercial butter per cow was highest in Inland (201 lb.), South Coast (189 lb.), and Big Scrub (174 lb.), and lowest in Richmond-Tweed (139 lb.), Macleay (153 lb.) and Clarence (158 lb.), the average for all regions being 158 lb.

Table XXI shows the distribution of different sized herds by regions. The greatest number of herds (41) was in the 50 to 59 size group, followed by the 35 to 39 group (27) and the 40 to 44 group (26). The greatest proportion of big herds was in the Richmond-Tweed and Big Scrub regions, while the Clarence and Macleay regions contained a high proportion of small herds.

In Table XXII the number of farms with production per cow at different levels is shown.

There are many herds in New South Wales producing at a low average rate per cow. 45 of the 231 herds averaging less than 125 lb. per cow.

TABLE XXII.

Production Per Cow: By Regions.

Production Per Cow.	Regions.						State.
	Richmond-Tweed		Clarence.	Macleay.	South Coast.	Inland.	
	Big Scrub.	Other.					
lb. c.b.			Number of Farms.				
66–74	...	...	...	1	...	...	1
75–99	...	8	3	1	...	1	13
100–124	2	16	6	6	1	...	31
125–149	5	35	4	7	5	3	59
150–174	10	13	8	10	6	...	47
175–199	6	9	6	9	4	4	38
200–224	4	3	2	4	6	2	21
225–249	1	...	5	1	3	1	11
250–274	2	...	...	...	3	1	6
275–291	...	...	...	...	1	3	4
Total ...	30	84	34	39	29	15	231

Herd Size and Production Per Cow.

In the Tables XXIII-XXV information is presented relating to herd size, production per cow and the average production per cow in herds of different sizes. The modal herd size was 35-44 cows, and production of 125-149 lb. c.b. per cow was the modal range.

Of 231 herds surveyed 14 had an average annual production per head of less than 100 lb. c.b. and only 10 were above 250 lb. c.b., 25 per cent. of all herds produced between 125 and 149 lb. c.b. per cow, 20 per cent. between 150 and 174 lb. c.b. and 16 per cent. between 175 and 199 lb. c.b. Thus 82 per cent. of herds averaged less than 200 lb. c.b. per cow.

TABLE XXIII.

Herd Size in Relation to Production Per Cow.

Production per Cow.	Herd size.							Total.
	15–19	20–29	30–39	40–49	50–59	60–69	70–125	
lb. c.b.				Number of Farms.				
66–74	...	...	...	1	...	...	...	1
75–99	...	1	5	3	...	1	3	13
100–124	1	3	6	8	7	4	2	31
125–149	...	4	11	11	9	6	18	59
150–174	1	11	7	9	8	3	8	47
175–199	...	6	9	7	9	4	3	38
200–224	1	2	6	4	4	...	4	21
225–249	1	1	3	5	1	...	...	11
250–274	...	1	2	...	2	1	...	6
275–291	...	1	1	1	1	...	...	4
Total ...	4	30	50	49	41	19	38	231

Table XXIII shows herd size in relation to production per cow, and indicates that herds with high average production per head were evenly distributed among different herd sizes.

Culling and Replacements.

In Table XXIII it is noted that, with the exception of the Big Scrub region, herd replacements greatly exceeded cullings, so that herd sizes have been gradually rising (deaths would not offset the additional replacements). Stock brought into the herd to increase herd size were recorded by the farmer as replacement stock. An average of 6.5 cows per farm were culled in 1952-53 and an average of 11.6 replacements were brought into the herd. The major reasons stated for culling were "old age" and "low production".

TABLE XXIV.

Herd Culling and Replacement Practices, 1952-53: By Regions.

Item.	Region.						State.
	Richmond-Tweed.		Clarence.	Macleay.	South Coast.	Inland.	
	Big Scrub.	Other.					
Total number of farms	30	84	34	39	29	15	231
Herd size—Average per farm.	51	56	43	41	54	45	50
Culled—			Cows per Farm.				
For old age	4·8	3·3	2·4	2·7	4·4	2·3	3·4
Low production ...	0·9	1·8	3·8	1·6	0·9	2·3	1·8
Disease	0·5	0·5	0·4	0·5	1·3	2·2	0·7
Other...	0·1	1·0	0·4	0·4	0·4	0·9	0·6
Total	6·3	6·6	7·0	5·2	7·0	7·7	6·5
Replacements—							
Bred on farm ...	5·9	12·3	9·2	8·7	12·5	13·7	10·5
Purchases	1·1	1·1	1·4	0·8	1·3	0·5	1·1
Total	7·0	13·4	10·6	9·5	13·8	14·2	11·6

Most (90 per cent.) of replacement stock were bred on the farm, whilst of those from outside sources 58 per cent. were purchased at auction, 29 per cent. from clearing sales, 7 per cent. from registered herds and 6 per cent. from tested herds.

These details of the sources of purchased stock, as stated verbally by the farmer, could not always be reconciled with purchases of stock recorded in the farmer's income tax returns, but the proportions of stock purchased from different sources is considered to reflect the relative numbers obtained from each source.

Calving Periods.

Most (175 of the 231) farmers interviewed stated that their calving period was between July and November, September being the most popular month and mid-summer (December to February) the least popular period.

TABLE XXV.

Number of Farms Calving in Each Three-Monthly Period: By Regions.

Period.	Region.						State.
	Richmond-Tweed.		Clarence.	Macleay.	South Coast.	Inland.	
	Big Scrub.	Other.					
March–May	...	...	...	...	...	2	2
April–June	...	1	...	...	...	1	2
May–July	...	2	1	1	...	3	7
June–August	...	5	...	1	...	2	8
July–September ...	4	11	12	14	12	5	58
August–October ...	9	31	7	15	7	2	71
September–November	9	20	7	4	6	...	46
October–December ...	1	5	3	...	1	...	10
November–January ...	3	2	1	1	...	...	7
December–February ...	...	2	...	...	...	...	2
Throughout Year ...	...	3	3	3	3	...	12
Not stated	4	2	...	...	...	...	6
Total	30	84	34	39	29	15	231

Although 19 farmers stated at the time of interview that they adopted a dry period (mostly in the Inland region) factory production records showed that the majority did not go completely out of production, but that reduced supplies were forwarded to the factory during the period the farmer regarded as being dry. Seven farmers, 4 of whom were located in the Inland region, did adopt a dry period, the period extending from March to July. Shortage of pasture was the main reason given for drying off cows, but one farmer desired to spell the cows for the period and this enabled him to take a holiday at that time.

The average lactation period stated by farmers on the 231 farms was 8.6 months per cow, but this figure is somewhat higher than other available information suggests.

TABLE XXVI.

Mating Practices: By Regions.

Practice.	Region.						State.
	Richmond–Tweed.		Clarence	Macleay	South Coast.	Inland.	
	Big Scrub.	Other.					
	Number of Farms.						
Bull runs with herd all the time.	15	41	9	11	6	7	89
Bull runs with herd for restricted period.	11	43	25	27	23	8	137
Not stated	4	...	...	1	...	...	5

Table XXVI shows that on 137 of the 231 farms surveyed the bull ran with the herd for restricted periods each year and on 89 farms the bull ran with the herd all of the time. Where the bull was kept in a bull paddock all of the year it was recorded as "restricted".

TABLE XXVII.

*Breeds of Bulls: By Regions.**

Breed.	Region.						State.
	Richmond–Tweed.		Clarence.	Macleay.	South Coast.	Inland.	
	Big Scrub.	Other.					
	Number of Bulls.						
Jersey ...	13 (8)	98 (50)	24 (15)	40 (27)	46 (24)	20 (10)	241 (134)
A.I.S.	18 (11)	29 (16)	...	5 (4)	6 (4)	8 (6)	66 (41)
Ayrshire ...	1 (1)	3 (3)	20 (11)	1 (1)	1 (1)	1 (1)	27 (18)
Guernsey ...	9 (8)	24 (15)	7 (6)	7 (5)	...	...	47 (34)
Friesian ...	...	...	4 (3)	...	...	...	4 (3)
Red Poll ...	1 (1)	4 (1)	1 (1)	...	...	...	6 (3)
Hereford ...	1 (1)	11 (8)	1 (1)	4 (4)	1 (1)	1 (1)	19 (16)
Aberdeen Angus ...	...	...	...	...	1 (1)	...	1 (1)
Devon ...	...	...	1 (1)	...	...	...	1 (1)
Durham ...	...	7 (4)	...	...	...	...	7 (4)
							419 (255)

* The figures in parenthesis show the number of farms in the region running the particular breed of bull.

Jersey bulls predominated with 241 on 134 farms, followed by A.I.S. (66 on 41 farms), Guernseys (47 on 34 farms) and Ayrshires (27 on 18 farms).

The table shows that some farms ran more than one breed of bull with their herd. The number of bulls also includes young bulls as well as mature bulls.

7. ATTITUDES TOWARD PRODUCTION EXPANSION AND EXTENSION.

Methods of Increasing Production.

The majority of the farmers recognized that it would be feasible to increase production on their farms. Only 11 of the 231 farmers considered production could *not* be increased on their farm;[12] 5 of these being from the Big Scrub region (see Table XXVIII).

The outstanding method by which the farmers considered production could be increased was by means of pasture improvement. More than half (119) of the farmers mentioned this, and 38 mentioned sub-division as well. Twenty-nine farmers referred to the need to clear more land for pastures, and 38 farmers indicated that they considered irrigation could be used to increase production on their farms.

[12] The questions asked were:
"Do you consider output of milk or cream from your farm could be increased?"
"If yes, how would you increase production?"

Generally, the answers supplied by farmers indicated the emphasis they placed on better feeding of the cattle, though only 6 farmers, all in the Richmond-Tweed, referred to fodder conservation as a means of increasing production. Relatively few farmers, by comparison, mentioned improvement of herd quality or of management as a means of increasing production.

While the answers recorded do not necessarily indicate the means by which production could be increased most economically, they do set out the methods which were predominant in the farmers' minds at the time of the interviews.

TABLE XXVIII.

Farmers' Opinions on Methods by Which Production Could Be Increased: By Regions.

Method suggested by Farmer.	Region.						State.
	Richmond–Tweed.		Clarence	Macleay	South Coast.	Inland.	
	Big Scrub.	Other.					
	Number of Farmers suggesting the Method Listed.						
Herd Management—							
Increase herd numbers	...	3	4	...	1	1	9
Heavier feeding ...	2	5	...	1	...	...	8
Stall feeding	...	1	1	...	2	...	4
Herd Improvement—							
Increase quality and culling.	...	13	...	...	...	1	14
Herd Testing	1	1	2	1	2	2	9
Selected stock	3	1	2	...	1	2	9
Pasture Management—							
Pasture improvement ...	6	36	25	24	20	8	119
Sub-Division	6	25	2	2	2	1	38
Rotational Grazing ...	1	2	...	...	...	1	4
Strip grazing	1	1	...	...	...	...	2
Topdressing	...	6	...	...	...	...	6
Farm Improvements—							
More pasture—clearing	5	10	2	8	3	1	29
Improved water supply	...	7	5	...	2	...	14
Renovating	2	7	1	1	...	...	11
Draining swampland ...	...	1	...	...	...	...	1
Fodder conservation—							
Conserve fodder—silage	...	3	...	...	...	...	3
Fodder cropping ...	...	6	...	...	...	...	6
Other methods—							
Irrigation	2	14	13	3	3	3	38
Increase Labour ...	3	7	3	1	5	2	21
Mechanization	1	1	1	6	1	1	11
Number of Farmers considering production could be increased.	25	81	34	37	29	14	220
Number of Farmers considering no increase feasible.	5	3	...	2	...	1	11

In a separate question the farmers were asked to indicate their ideas on how to encourage improved methods of production. The question asked was:

> "Have you any particular ideas about how farmers could be encouraged to adopt improved methods of production?"

The answers (presented in Table XXIX) reveal the general pattern of farmers' viewpoints on how improved methods of production could be achieved. The circumstances of the interview were such that, in general, the answers represent "first reactions" by the farmer, rather than considered viewpoints after long discussion. In some instances, too, the answers of the farmers may have been influenced by the fact that information was collected in the course of a cost of production survey which was being used as a basis for decisions relating to the guaranteed return to dairy farmers.[13]

TABLE XXIX.

Suggestions to Encourage Improved Methods of Production.

Method Suggested by the Farmer.	Number of Farmers suggesting the Method.
1. *No ideas—no answer*	45
2. *Financial Measures—*	
Assistance by means of finance with low interest rate	32
Higher price for butterfat	30
Reduce taxation	10
Subsidy on superphosphate and lime	8
Stabilize butter price at "present" level	5
Subsidy on pasture improvement	8
Finance for purchase of implements	4
Reduction in interest rate	4
Reduce freights	4
Reduce labour cost	4
Flood control	3
Subsidy for pedigree bulls	2
3. *Expansion of Extension Work—*	
More extension work	10
More field days	6
More scientific assistance	5
Increase education	4
Soil testing	3
4. *Change Method or Scale of Production—*	
Water for irrigation	7
More capital	6
Pasture improvement	5
Better selection of herds	4
Sub-division	3

Three-quarters of the farmers indicated their views on this question, and one-quarter provided no answer. The predominant theme of the farmers' answers related to the need for assistance in the form of finance

[13] The importance of this point should not be over-emphasized since, in some other States, the emphasis on financial measures and price policies evident in N.S.W. was not so apparent.

at low rates of interest, and to suggestions relating to higher prices for butterfat. Comments along these lines were made by approximately one-quarter of the farmers in the survey.

Some farmers referred to the desirability of subsidies for superphosphate, lime or for pasture improvement, and two suggested a subsidy on pedigree bulls. A smaller proportion of the farmers suggested an expansion of extension work, more field days and scientific assistance. Other farmers interpreted the question in relation to their own farm operations and referred to improved techniques of production by means of more irrigation, pasture improvement and herd selection.

Management Changes Considered by Farmers.

The farmers were asked to indicate the major farm management changes which they had considered in recent years. The question was as follows:

> "What major changes have you considered making on your farm in the last three years?
>
> Did you make it?
>
> Did you talk to anyone about this change?
>
> What was your final decision and reason for it?"

The results are summarized in Table XXX.

TABLE XXX.

Management Changes Considered and Changes Introduced by Farmers.

Item.	Changes Considered.	Changes Introduced.
	Number of Farmers.	
Total number of farmers not contemplating change	52	...
Total number of farmers contemplating change ...	179	...
Pasture Improvements and Grazing Management—		
Sowing improved grasses and clovers	75	40
Pasture renovation	11	7
Topdressing with Superphosphate, and/or lime and trace elements.	8	4
Rotational Grazing	4	4
Feeding Practices—		
Grow more fodder crops	13	12
Concentrate feeding	3	2
Conservation of fodder...	2	1
Herd Improvement	14	9
Farm Improvements—		
Water Supply	29	20
Clearing	13	13
New Buildings	11	10
Sub-divisional Fencing	81	41
Replanning farm layout	3	4
Irrigation	25	6
Mechanization	21	9
Sideline Enterprise—		
Introducing cash crops (fruit and vegetables) ...	3	1
More Emphasis on Pigs	3	2
Change of Enterprise	5	...

Twenty-three per cent. of the farmers had not considered making any major changes in their farm operations in recent years. The proportion was highest in the Big Scrub (30 per cent.) and lowest on the South Coast (14 per cent).

The predominant changes considered by the 179 farmers who contemplated a major change related to pasture improvement and sub-divisional fencing. Sowing pastures was considered by a large proportion of farmers in regions other than the Richmond-Tweed, where sub-divisional fencing was more frequently mentioned as the change considered.

Irrigation, improved water supply and mechanization were the other major items considered by the farmers, being mentioned in each case by approximately 10 per cent. of the farmers interviewed.

The other outstanding result is that relatively few of the farmers indicated that they had given consideration to feeding practices (other than improved pasture management) or to herd management and improvement. These items were apparently considered to be of less significance by the farmers interviewed.

Apart from the changes considered by farmers, a check was also made of the changes introduced by the farmers. Approximately half of the farmers who had contemplated pasture sowing or sub-division had not introduced this change, and most of the farmers who had considered irrigation or mechanization had not yet been able to do so.

Farmers in the Big Scrub and Clarence regions effected less than 50 per cent. of the projected changes, whilst 64 per cent. of the changes had been carried out by farmers in the Richmond-Tweed and Macleay regions. Farmers in the South Coast region had undertaken and completed 67 per cent. of the immediate changes considered during the survey period.

Contact with Extension Services.

Sources of Advice on Pasture Improvement.

The farmers were asked:

> "Did you consult anybody about prospects and problems of establishing or maintaining pastures?"
>
> "If yes, who?"

In answer to this question, 99 of the farmers indicated that they sought such advice. Of these farmers, 42 approached agricultural advisers, 34 neighbours and 17 sought advice from seed merchants. The importance of neighbours and seed merchants in providing this type of advice confirms the survey findings in other States of the Commonwealth. The small number of farmers using publications for this purpose is also worthy of note.

TABLE XXXI.

Sources of Advice on Pasture Improvement.

Source of Advice.	Number of Farmers.
Agricultural Advisers	42
Neighbours	34
Seed Merchant	17
Publications	5
Butter Factory	5
Bank Manager	3
Pasture Improvement Group	3
Machinery Firm, Progress Association each	1
No advice sought	132

Consultations with District Advisory Officers.

A series of questions was asked of each farmer to ascertain the extent of his contacts with officers of the Department of Agriculture who were engaged in extension and advisory work. The answers reveal the frequency of these contacts, but no attempt was made to measure their extent or intensity. Each consultation recorded may vary from a casual contact to a planned detailed discussion of the farm operations.

The questions were as follows:

"How long since you talked about your farm to a local departmental advisory officer?"

"How many times did you consult him, or did he see you, in 1953?"

"Have you ever visited a Dairy Grant Demonstration Farm?"

"What did you think of it?"

"Did you change your operations as a result of the visit?"

The answers to these questions are presented in Table XXXII.

TABLE XXXII.

Consultations by Farmers with District Advisory Officers: By Regions.

Item.	Region.						State.	
	Richmond–Tweed.		Clarence.	Macleay.	South Coast.	Inland		
	Big Scrub.	Other.						
	Number of Farmers.							Per cent.
Farmers who have consulted advisory officer some time.	7	24	11	17	13	10	83	35
Farmers who consulted advisory officer in 1953.	5	17	8	12	7	7	56	24
Farmers who have attended a "Field Day".	14	38	20	23	20	8	123	53

One-third of the farmers had consulted an advisory officer some time. The majority of these had had such a consultation in 1953. More than half of the farmers had attended a "Field Day", when, no doubt, some of the consultations recorded with district advisors would have occurred.

Farmers' Opinions on Dairy Grant Demonstration Farms.

Fifty-nine of the 231 farmers interviewed stated that they had visited a Dairy Grant Demonstration Farm. Their opinions of this type of farm and their ideas as to its merits were solicited in a question designed to encourage the farmers to speak freely of their views on the farms.[14]

The farmers' opinions as represented by their answers may be grouped into three categories:

(i) Favourable opinion of the administration and conduct of the farms selected and a favourable impression of the farm practices demonstrated on these farms (33 farms).

(ii) Expressed doubts as to the practical application to the "average" farm of the practices demonstrated, since, it was claimed, adoption of these methods would mean an initial outlay quite beyond the financial means of the farmer (7 farms).

(iii) Definitely unfavourable opinion of the management and conduct of the Demonstration Farms and of their value as means of extension (19 farms).

In Table XXXIII the number of farmers in each category is shown for each region. Some idea of the impact of this medium of extension may be obtained from the number of farmers who have changed to the methods demonstrated.

Eleven of the 59 farmers who had visited a Dairy Grant Demonstration Farm were favourably impressed by what they observed, and had changed one or more of their farm practices as a result of the demonstration. A further nine conceded that they had "picked up points" by adopting various ideas which were generally helpful "in running the farm."

Some opinions expressed by this group of farmers were as follows:

"Very good, provides education in a practical manner.'

"Outlook changed, saw what could be done."

"Good, in normal season methods should pay dividends."

Seven farmers queried the practical application to the "average" farm of the methods demonstrated and clearly indicated that they desired more information about the financial returns which might result from such an outlay on capital investment and operating expenses and in general doubted whether the profit margin was sufficient to warrant the initial outlay.

[14] The interpretation of the results in this section should recognize that the opinions of the 172 farmers who had not visited a demonstration farm have not been taken into account.

TABLE XXXIII.

Farmers' Opinions of Dairy Grant Demonstration Farms: By Regions.

Item.	Region.						State.
	Richmond–Tweed.		Clarence.	Macleay.	South Coast.	Inland	
	Big Scrub.	Other.					
A. *Farmers with favourable opinion of D.G.D. Farms—*							
Change in Farm practices	1	5	1	2	2	...	11
No change	5	3	1	1	3	...	13
"Picked up Points" ...	...	3	2	2	2	...	9
	6	11	4	5	7	...	33
B. *Farmers who queried extension value of D.G.D. Farms—*							
No change in farm practice.	...	...	...	2	2	...	4
"Picked up points" ...	...	1	1	1	...	...	3
	...	1	1	3	2	...	7
C. *Farmers with unfavourable opinion of D.G.D. Farms—*							
No change	1	3	7	3	5	...	19
Total Farmers Visiting D.G.D. Farms.	7	15	12	11	14	...	59

Farmers in this category replied in the following terms:

"Average working farmer could not possibly follow suit."

"Expense too high; would like to know how money spent increases real profit."

"Would like to know cost of production on the farm. Think cost of lime and super. used might be more than gain on production."

"Costs beyond average farmer would like to see money involved spread over a number of farms; would give better indication of improved methods."

Nineteen of the 59 farmers who had visited a Demonstration Farm had formed a definitely unfavourable opinion of it. Some expressed dissatisfaction with the administration and selection of those farms whilst other were critical of and unimpressed by the methods demonstrated.

Some of the opinions were expressed as follows:—

"Waste of good money on farms visited."

"Not impressed by eradication of bracken"

"Not a good advertisement for the Department."

"Disappointed with records kept of amount of stock handled on property and plan for costing."

"Disappointing when considering money spent."

8. ATTITUDES TOWARD INVESTMENT AND BORROWING.

The scale of operations exerts such a strong influence on farm earnings in the dairy industry that the accessibility of additional supplies of capital is of major importance to dairy farmers. Apart from the accessability of capital, either from farm savings or by borrowing, the attitude of farmers themselves is critical in determining the level of capital investment which occurs.

In the course of the field interviews a series of questions was asked which was designed to determine the attitudes of the farmers to investment and to borrowing. The questions were as follows:

Has lack of finance held up development of your farm in the last three years?

Do you think this is a good time for dairy farmers to invest money in farm improvements? Why?

Do you think this a good time for dairy farmers to be borrowing?

Would you advise a young man *to borrow now* to set himself up on a dairy farm of his own?

Would you think it worthwhile to borrow for new buildings? New machinery? Pasture improvement? Sub-divisional fencing?

The results of the analysis of answers to this series of questions are presented below.

(*a*) *Has lack of finance held up development?*

Sixty per cent. (137 of 231) of the farmers considered that lack of finance had hindered development of their farm. When the debt position of these 137 farmers was reviewed, it was found that 36 of these farmers had no debts, and 101 had debts. Thus, a group of 36 farmers, representing 15 per cent. of those sampled, considered that lack of finance had held up development, but were unable or unwilling to borrow money. The 101 farmers who had debts and considered that lack of finance had held up development would be comprised of those who were willing to borrow, but were unable or unwilling to borrow additional sums over and above their existing debts. Reference to Table IX indicates that the general level of debts prevailing was 17 per cent. of the security value of land and improvements.

Of the 36 farmers in the group who had no debts and who stated lack of finance had retarded the farm development programme, only 3 farmers had discussed with their respective bank managers the possibility of obtaining a loan for the farm improvements considered necessary. As only 9 per cent. of the farmers in the above category had taken this action to obtain credit during the period of the survey (1st July, 1950, to 30th June, 1953) it may be concluded that these farmers, who were clear of debt, were very reluctant to borrow even though their credit status would entitle them to favourable consideration.

Thirty-five farmers out of a total of 101 who were in debt and who stated lack of finance had held up development, had discussed the possibility of obtaining a loan with their respective bank managers. Whilst the need of credit for outlay on farm improvements may be more urgent on the farms in the latter category, this evidence shows that some farmers who have used credit for financing farm improvements during the earlier stages of farm development tended to seek further bank credit during the three-year survey period.

Ninety-four farmers considered that lack of finance had not held up development; these were comprised of 46 farmers with no debts and 48 with debts.

Thus, 46 of the 231 farmers were in a financial position which enabled them to report that lack of finance had not held up development, and that they were free of debt. Their own savings enabled them to finance all of the development which they considered to be necessary.

Comparison of the level of debt (for indebted farms only) as between farmers who stated that lack of finance had held up development (101), and those that did not (49), showed that the 101 farmers had an average level of debts of 27 per cent. of the security value of land and improvements; while the 49 farmers who stated lack of finance did not hold up development had an average debt of 17 per cent. of the value of land and improvements. Thus, on this evidence it may be concluded that the farmers in debt who stated that finance was holding up development were inclined to borrow more heavily in relation to their assets.

Attitudes Toward Investment.

(*b*) *Do you think this is a good time for dairy farmers to invest money in farm improvements?*
Do you think this is a good time for dairy farmers to be borrowing?

Of the 231 farmers interviewed, 176 considered at the time of the interview (summer of 1953-54) that it was a good time to invest money in farm improvements. Most of these—126 farmers—also considered that it was a good time to be borrowing.

The proportion of farmers *in debt* was much higher in the group of 176 farmers who considered it was a good time to invest, than in the remainder. There were 123 of the 176 farmers in debt, whereas among the 55 farmers who considered the present was not a good time to invest, only 26 had debts.

Attitudes Toward Borrowing.

In so far as attitudes towards borrowing were concerned, 90 of the 126 farmers who considered "the present" (i.e., the time of the interview) to be a good time to borrow were in debt. Of the 105 farmers who considered "the present" not a good time to borrow, 59 were in debt. Thus, those farmers more favourably disposed toward borrowing at the time of the interview tended to be farmers with debts, even though the existence of debt may have reflected commitments made many years before the date of the interview.

Of the total number of farmers interviewed (231) 44 stated that they had used the credit scheme administered by the Rural Bank of New South Wales at some time. This scheme provides for loans to farmers at reduced interest rates for certain farm improvements. During the survey period 5 farmers were using this scheme. Since the majority of farmers claimed they had no knowledge of the scheme, an assessment of their attitude to credit made available at low interest rates was not possible.

(*c*) *Would you think it worthwhile to borrow for—*

New buildings? *New machinery?*
Pasture improvement? *Sub-divisional fencing?*

The answers provided by farmers to these questions are presented in Table XXXIV.

TABLE XXXIV.

Attitudes of Farmers towards Borrowing for Purchase of Different Farm Assets.

	Farmers Not in Debt.	Farmers in Debt.	Total Number of Farmers.
Number of Farmers	82	149	231
Asset.	Number of Farmers who thought it Worthwhile to Borrow for Asset Listed.		
New buildings	42	93	135
New machinery	46	116	162
Pasture improvement	43	96	139
Sub-divisional fencing	37	91	128

There is a stronger inclination on the part of the farmers to borrow for new machinery than for other purposes, an attitude which possibly reflects the prevalence of hire purchase agreements as a means of financing machinery purchases.

The majority of the farmers were favourably disposed toward borrowing for the purposes listed. The numbers of farmers prepared to borrow for buildings, pasture improvement and sub-division were approximately equal. The results may be compared with the earlier finding that 126 farmers considered the present a good time to be borrowing.

As would be expected, the farmers already in debt were more inclined to think it worthwhile to borrow for each of the assets listed, than were debt-free farmers. To some extent this may be a rationalization of earlier decisions to borrow.

9. AMENITIES ON DAIRY FARMS.

Information was collected on the existing amenities on the dairy farms surveyed. The table listing the various amenities may be considered in conjunction with the financial position of the farmers which has already been presented.

Some notable features of the amenities on farms were:

Fifty-two per cent. of the farmers had a kitchen sink and 93 per cent. had a bathroom in the house whilst running water was connected to the kitchen and bathroom in 81 per cent. of the farmers' homes.

Thirty-one per cent. have bath heaters installed but only 9 per cent. of the homes were equipped with a hot water service. Electricity was available in 66 per cent. of the homes. Eighty-four per cent. of the homes were equipped with a refrigerator and of the 36 without a refrigerator 27 had ice chests and only 4 were without cold storage facilities. Almost all had a radio. Sixty per cent. of the farmers had a telephone.

Washing machines were installed on 23 per cent. of the farms. Twenty-nine per cent. of the farms had fly wire protection.

TABLE XXXV.

Amenities on Dairy Farms: By Regions.

Amenity.	Region.												State.			
	Richmond–Tweed.				Clarence.		Macleay.		South Coast.		Inland.		Total.		Percentage with Item.	
	Big Scrub.		Other.													
	Yes.	No.	Yes.	No.	Yes.	No.	Yes.	No.	Yes.	No.	Yes.	No.	Yes.	No.	Yes. Per cent.	No. Per cent.
	Number of Farms.															
1. Running Water—																
(*a*) Kitchen	28	2	66	18	28	6	32	7	20	9	13	2	187	44	81	19
(*b*) Bath	29	1	68	16	23	11	31	8	22	7	14	1	187	44	81	19
(*c*) Copper and Tubs	29	1	62	22	24	10	31	8	17	12	14	1	177	54	77	23
2. Hot Water Service—																
(*a*) Kitchen	6	24	7	77	4	30	2	37	1	28	1	14	21	210	9	91
(*b*) Bath	6	24	6	78	3	31	2	37	2	27	1	14	20	211	9	91
(*c*) Copper and Tubs	4	26	6	78	1	33	2	37	1	28	1	14	15	216	6	94
3. Bathroom in House	30	...	78	6	30	4	35	4	27	2	15	...	215	16	93	7
4. Bath Heater	7	23	22	62	9	25	12	27	15	14	6	9	71	160	31	69
5. Kitchen Sink	21	9	46	38	17	17	14	25	11	18	10	5	119	112	52	48
6. Electric Light*	21	9	48	36	23	11	27	12	23	6	11	4	153	78	66	34
7. Refrigerator	26	4	73	11	31	3	32	7	18	11	15	...	195	36	84	16
8. Ice Chest†	1	3	7	4	2	1	6	1	11	...	...	...	27	9	12	4
9. Washing Machine	7	23	18	66	7	27	6	33	10	19	4	11	52	179	23	77
10. Radio	29	1	84	...	34	...	37	2	28	1	15	...	227	4	98	2
11. Telephone	17	13	59	25	17	17	17	22	20	9	8	7	138	93	60	40
12. Flywire Protection	2	28	39	45	9	25	7	32	5	24	5	10	67	164	29	71
13. Septic Tank	5	25	3	81	6	28	...	39	2	27	4	11	20	211	9	91
Total Number of Farms ...	30		84		34		39		29		15		231		...	

* Many of these farms operate from battery lighting units.
† On farms without refrigeration.

APPENDIX I.
COSTS OF PRODUCTION.

The data presented in this appendix are restricted to the costs per pound of commercial butter which were calculated in accordance with the formula used to calculate costs of production as a basis for the decisions relating to price guarantees under the stabilization plan now in force in the dairy industry throughout Australia. Some of the characteristics of this cost of production formula were adopted to achieve uniformity with established procedures used in the price stabilization scheme. Care is needed in the interpretation of the results if they are to be used as a measure of efficiency of production, but in conjunction with other results presented in this report they provide some indication of the economic status of the farms surveyed.

As is indicated in Part 2, the costs are at "survey level", and represent averages for the three years 1950-51 to 1952-53, the total costs for the three years being aggregated and divided by the total production for the three years. The survey level costs do not include cream cartage, as it proved to be impracticable to identify a cost for cartage of butterfat borne by the farmer in many instances. The imputed costs included are £496 per annum for adult male family labour (including the operator), and interest at a rate of 4.65 per cent. on the valuations of land, land improvements, livestock and plant. Depreciation was included at the levels claimed by farmers in their income tax returns. The level of costs allowed for the family labour, the levels of valuations at which farm assets were included, the use of depreciation claimed in tax returns as a measure of depreciation costs, and the deduction of sideline income from gross[15] costs in order to measure net costs, are all

[15] Gross costs include all costs incurred on the particular farm on which butterfat is produced. Net costs are the costs attributable to the butterfat production above, and are gross costs less costs of "sideline" enterprises.

The costs formula incorporates a technique of separation of costs of the dairy enterprise from those of other enterprises by assuming that sideline income equals sideline costs.

For this purpose sideline income includes:

(i) gain or loss on livestock according to the livestock account in the tax return.

(ii) proceeds from sale of crop produce or animal products (not included in the livestock account) agistment fees and off-farm work.

(iii) income from sale of solids-not-fat in the case of producers of milk manufacture. It was assumed that such income from each farm was paid at the following rates (supplied by the Commonwealth Dairy Produce Equalization Committee):

1950-51	3.14d. per lb. butterfat
1951-52	3.19d. per lb. butterfat
1952-53	3.23d. per lb. butterfat

(iv) In the case of suppliers for the liquid milk trade, the total production of butterfat was calculated from the available data relating to the farm. The payment for all butterfat (at the rate paid for cream) was then deducted from the total proceeds from milk, and the remainder was treated as sideline returns. This remainder was sub-divided into a payment for "solids not fat" estimated as in (iii) above plus a liquid milk premium.

(v) In cases where the income from sale of butterfat in the tax return was above the income from sale of butterfat shown in the production records, the difference (i.e., the excess shown in the income tax return) was taken to be income from the sale of sidelines and was deducted as sideline costs.

None of these adjustments altered the total income accruing to the farm; they were made as a basis for estimating the proportion of total income which was to be regarded as sideline income.

features of the cost formula which arise from its use as a basis for decisions relating to price stabilization. Some of these assumptions and methods have been discarded in parts of this report relating to incomes earned by farmers, but this appendix on costs is based on the established costs formula.[16]

Despite these limitations, useful comparisons of costs between regions can be made, and the data presented below are designed to do this. Appendix Table I presents average costs for each region, calculated by adding total costs on all farms in each region and dividing by total production.

APPENDIX TABLE I.

Net Costs Per Pound, Survey Level: By Regions.

Region.	Number of Farms.	Gross Cost Per Pound.	Net Cost Per Pound.	Standard Error of Net Cost Per Pound.	Average Net Cost differs significantly from Region Listed.*
		d.	d.	d.	
Macleay	39	55·3	45·0	2·5	Richmond – Tweed South Coast, Big Scrub.
Clarence	34	55·0	43·2	2·0	South Coast, Big Scrub.
Richmond–Tweed—Other.	84	54·5	39·3	1·3	Macleay.
Inland	15	53·5	38·6	3·7	.....
South Coast ...	29	44·2	34·6	2·3	Macleay,Clarence.
Big Scrub	30	45·4	34·3	2·6	Macleay, Clarence.

* At 5 per cent. level of significance. At the 10 per cent. level Richmond–Tweed (Other) differs significantly from the South Coast, Big Scrub and the Clarence regions.

Comparisons between regions are influenced by the extent of sideline activity on the farms included, so that both gross and net costs are presented.

The *gross* costs for all farms varied from 44.2d. in the South Coast to 55.3d. in the Macleay; the State average was 51.6d. When *net* costs are considered, the Big Scrub region had lowest costs (34.3d.), as the sideline income deduction reduced its costs below those of the South Coast. Similarly, the Inland region had relatively lower net costs because higher sideline costs were deducted. Appendix Tables II and III indicate the cost structure of the survey farms, in terms of average costs *per farm* and per pound of *commercial butter*. These costs are gross costs for the whole farm.

[16] The cost estimates used as a basis for price decisions differ from those in this appendix because a different owner-operator's allowance is included for the farms. Furthermore, the costs here presented do not include cartage of cream (see Part 2) and are "survey level" costs, not having been adjusted according to changes which have occurred since the survey period.

The major items of cost were as follows:—*Labour* represented 49 per cent. of total gross costs for the State as a whole. The labour costs were highest *per farm* in the South Coast (£892) and Inland (£868) regions, and low in the Clarence (£791) and Macleay (£785). Larger amounts of hired labour were used in the Inland and South Coast regions. However, when labour costs per pound are considered, the South Coast (21.1d.), Big Scrub (22.3d.) and Inland (23.1d.) regions appeared as the low cost regions, while the low production per farm in the Clarence and Macleay resulted in high labour costs per farm (28.2d. and 29.9d.) in these regions.

Appendix Table II.

Components of Cost of Production Cost Per Farm Per Annum—Survey Level: By Regions.

Cost Item.	Region.						State.	Commonwealth.
	Richmond–Tweed.		Clarence.	Macleay.	South Coast.	Inland.		
	Big Scrub.	Other.						
	£	£	£	£	£	£	£	£
	Average per Farm.							
Labour—								
Owner Operator	496	496	496	496	496	496	496	496
Other Family	278	291	267	238	314	222	275	267
Hired	22	29	11	28	60	116	35	31
Casual and Contract Work	18	19	17	23	22	34	20	41
Total	814	835	791	785	892	868	826	835
Interest—								
Land	170	142	127	132	160	202	148	175
Total Improvements ...	54	61	60	50	80	63	61	69
Plant	20	29	33	21	34	44	29	38
Livestock	84	103	83	75	106	98	92	82
Total	328	335	303	278	380	407	330	364
*Depreciation**—								
Plant	46	72	33	28	93	161	64	102
Structures	8	9	6	6	20	22	10	17
Unspecified	1	7	13	16	6	12	9	15
Total	55	88	52	50	119	195	83	134
Cash Costs—								
Rates and Taxes	48	39	32	39	42	31	39	37
Insurance	11	12	7	7	11	14	10	12
Repairs—Plant	41	48	35	28	48	41	41	70
Structures	41	34	22	35	35	65	36	42
Unspecified... ...	12	13	21	14	25	43	17	20
Travel Expenses	16	12	7	14	12	18	12	12
Fuel and Oil	40	61	49	31	50	88	52	89
Electricity	8	9	13	12	6	3	9	8
Transport	9	8	12	7	3	11	8	15
Chemicals	6	5	5	4	7	9	6	8
Motor Registration ...	6	8	5	6	7	9	7	10
Seed and Fodder	171	197	125	76	144	102	150	168
Fertilizer	6	10	23	20	41	52	20	54
Lime	...	3	12	14	1	...	6	6
Sundries	44	36	27	33	49	59	39	61
Total	459	495	395	340	481	545	452	612
Gross Cost	1,656	1,753	1,541	1,453	1,872	2,015	1,691	1,945
Sideline Income ...	405	489	331	272	406	562	413	463
Total Net Cost	1,251	1,264	1,210	1,181	1,466	1,453	1,278	1,482

* As claimed by the farmers in their income tax returns.

Appendix Table III.

Components of Costs of Production Cost Per Pound (Pence) Survey Level: By Regions.

Item.	Region.						State (Unweighted)	Commonwealth. (weighted.)
	Richmond–Tweed.		Clarence.	Macleay.	South Coast.	Inland.		
	Big Scrub.	Other.						
Average Production per farm, lbs. c.b.	8,766	7,727	6,727	6,303	10,165	9,045	7,866	8,642
Cost Item.	d.	d.	d.	d.	d.	d.	d.	d.
Labour—								
Owner-Operator	13·58	15·41	17·69	18·89	11·71	13·16	15·14	14·07
Other Family	7·60	9·02	9·53	9·08	7·41	5·91	8·39	7·58
Hired	·60	·90	·38	1·05	1·42	3·07	1·06	·87
Casual and Contract Work	·49	·58	·59	·87	·53	·91	·62	1·16
Total	22·27	25·91	28·19	29·89	21·07	23·05	25·21	23·68
Interest—								
Land	4·65	4·42	4·52	5·04	3·78	5·36	4·51	4·94
Total Improvements ...	1·47	1·90	2·13	1·90	1·89	1·68	1·85	1·95
Plant	·55	·91	1·19	·80	·80	1·16	·88	1·10
Livestock	2·30	3·18	2·98	2·84	2·50	2·60	2·83	2·31
Total	8·97	10·41	10·82	10·58	8·97	10·80	10·07	10·30
Depreciation—								
Plant	1·28	2·24	1·18	1·09	2·19	4·28	1·96	2·90
Structures	·22	·29	·21	·22	·47	·58	·31	·49
Unspecified	·03	·21	·47	·59	·15	·31	·27	·41
Total	1·53	2·74	1·86	1·90	2·81	5·17	2·54	3·80
Cash Costs—								
Rates and Taxes	1·31	1·21	1·15	1·49	·99	·81	1·19	1·04
Insurance	·29	·38	·26	·28	·25	·36	·31	·33
Repairs—Plant	1·13	1·41	1·23	1·05	1·13	1·09	1·26	2·00
Structures ...	1·12	1·06	·78	1·33	·81	1·74	1·08	1·20
Unspecified ...	·32	·39	·76	·52	·58	1·13	·53	·58
Travel Expenses	·43	·37	·25	·53	·28	·47	·38	·34
Fuel and Oil	1·10	1·91	1·75	1·19	1·19	2·33	1·59	2·52
Electricity	·23	·29	·44	·45	·14	0·9	·28	·23
Transport	·24	·24	·44	·25	·08	·28	·24	·41
Chemicals	·18	·16	·19	·15	·18	·23	·17	·24
Motor Registration ...	·16	·25	·19	·24	·17	·23	·21	·27
Seed and Fodder	4·67	6·13	4·47	2·90	3·39	2·72	4·57	4·78
Fertilizer	·18	·30	·81	·76	·96	1·38	·60	1·54
Lime	·01	·09	·41	·55	·03	·01	·17	·16
Sundries	1·21	1·13	·96	1·25	1·17	1·57	1·18	1·73
Total	12·58	15·40	14·09	12·94	11·35	14·44	13·76	17·37
Total Gross Cost ...	45·35	54·46	54·96	55·31	44·20	53·46	51·58	55·15
Sideline Income ...	11·09	15·20	11·80	10·35	9·57	14·92	12·58	13·12
Total Net Cost	34·26	39·26	43·16	44·96	34·63	38·54	39·00	42·03

Interest represented 20 per cent. of gross costs for the State as a whole. The major items of investment were land and livestock, and interest on these items averaged £148 and £92 respectively; the remainder of the £330 interest cost was made up of interest on land improvements (£61) and plant (£29). The level of total interest charges in each region reflected the differences in total capital invested per farm since interest at 4.65 per cent. was allowed on all invested capital.

The South Coast and Inland regions had the highest average capital investment, with accompanying higher interest charges. The high level of production in the South Coast region reduced the interest cost per pound in that region to the lowest of all regions. The interest costs

per pound in the Inland region were high, but the effect of the higher capital investment was reflected in the higher average sideline income in that region.

Depreciation was 5 per cent. of costs for the State as a whole. It is the depreciation claimed in the tax return, and was notably higher in the South Coast and Inland regions, particularly in regard to depreciation on plant, for which high rates of depreciation on new purchases were allowed in the tax return.

Cash Costs included all of the annual operating expenses paid in cash, except for the item "casual and contract work", which was included in the labour cost for the purpose of this analysis. Cash costs represented 26 per cent. of total costs, which was a very low proportion in comparison with other States of the Commonwealth.

The item "sundries", taken as it is from the farmers' tax return, included some expenses which should be classified under other items of cash costs. But despite this, some indication of the relative importance of each item of cash costs may be gleaned from the data. The major expenses were for seed and fodder (£150 per farm), repairs (£94), fuel and oil (£52) and rates and taxes (£39). The items repairs, seeds and fodder, and fertilizer all vary between regions, and the differences reflect the variation in methods of production between regions.

Sideline Income was included because of its use in the cost formula in calculating net costs from gross costs of production. It was highest per farm in the Inland region (£562) and lowest in the Macleay (£272).

APPENDIX TABLE IV.

Frequency Distribution of Net Cost Per Pound (Survey Level) in Each Region.

Cost per pound.	Region.						State (Unweighted).	
	Richmond–Tweed.		Clarence.	Macleay.	South Coast.	Inland.		
	Big Scrub.	Other.						
Pence.	Number of Farms.						Number	Per cent.
Below 18	1	...	...	1	...	...	2	·8
18–21 ...	5	1	...	...	3	1	10	4·3
21–24 ...	1	3	...	...	2	2	8	3·5
24–27 ...	1	7	1	2	2	...	13	5·6
27–30 ...	...	6	...	...	3	...	9	3·9
30–33 ...	1	4	4	3	1	1	14	6·1
33–36 ...	2	5	3	1	1	1	13	5·6
36–39 ...	4	12	4	2	3	1	26	11·3
39–42 ...	6	9	2	3	3	3	26	11·3
42–45 ...	2	3	4	2	3	1	15	6·5
45–48 ...	2	11	4	6	2	1	26	11·3
48–51 ...	1	2	2	2	1	2	10	4·3
51–54 ...	2	6	...	3	2	...	13	5·6
54–57 ...	...	6	4	3	...	...	13	5·6
57–60 ...	1	2	1	4	2	...	10	4·3
60–63 ...	...	...	...	4	...	...	4	1·7
63–66 ...	...	2	3	1	...	1	7	3·1
Above 66	1	5	2	2	1	1	12	5·2
Total Number of Farms	30	84	34	39	29	15	231	100·0

Appendix Table IV reveals the wide variation between the different regions in the recorded net costs of production on each farm. The results indicate that within some of the regions characterized by higher average costs, there were some farmers who produced at costs well below the average level recorded in the low cost regions.

APPENDIX II.

Statistical Tables.

In this appendix tables are presented which set out more detailed information relating to the farms included in the survey.

APPENDIX TABLE V.

Frequency Distribution of Farm Income Per Farm: By Regions.

Farm Income per annum.	Region.						State.
	Richmond–Tweed.		Clarence.	Macleay.	South Coast.	Inland.	
	Big Scrub.	Other.					
£	Number of Farms.						
0– 249 ...	...	2	...	...	1	2	5
250– 499 ...	1	3	3	6	1	...	14
500– 749 ...	4	19	13	16	6	...	58
750– 999 ...	8	20	9	9	2	2	50
1,000–1,249 ...	5	15	...	3	4	3	30
1,250–1,499 ...	4	9	5	2	4	4	28
1,500–1,749 ...	2	5	2	...	2	...	11
1,750–1,999 ...	3	5	1	2	2	1	14
2,000–2,499 ...	1	4	1	...	4	3	13
2,500–2,999 ...	1	1	...	1	1	...	4
3,000–3,999 ...	1	1	...	...	1	...	3
4,000–4,999 ...	...	...	...	...	1	...	1
Total ...	30	84	34	39	29	15	231

APPENDIX TABLE VI.

Frequency Distribution of Family Income Per Farm: By Regions.

Family Income per annum	Region.						State.
	Richmond–Tweed.		Clarence.	Macleay.	South Coast.	Inland.	
	Big Scrub.	Other.					
£	Number of Farms.						
–281– 0 ...	...	...	...	...	1	1	2
0– 249 ...	...	3	1	2	1	1	8
250– 499 ...	1	4	4	9	4	...	22
500– 749 ...	8	25	14	18	2	...	67
750– 999 ...	8	17	6	6	2	4	43
1,000–1,249 ...	2	17	1	...	4	2	26
1,250–1,499 ...	4	7	4	1	4	3	23
1,500–1,749 ...	2	7	3	1	4	2	19
1,750–1,999 ...	3	1	1	1	2	2	10
2,000–2,499 ...	...	1	...	...	2	...	3
2,500–2,999 ...	1	1	...	1	1	...	4
3,000–3,999 ...	1	1	...	...	1	...	3
4,000–4,999 ...	...	...	...	...	1	...	1
Total ...	30	84	34	39	29	15	231

Appendix Table VII.

Frequency Distribution of Total Capital Investment Per Farm: By Regions.

Capital Invested per Farm.	Region.						State.
	Richmond–Tweed.		Clarence.	Macleay.	South Coast.	Inland.	
	Big Scrub.	Other.					
£			Number of Farms.				
2,000– 2,999	...	2	2	2	1	...	7
3,000– 3,999	2	6	4	5	5	...	22
4,000– 4,999	3	9	7	12	3	3	37
5,000– 5,999	7	19	7	7	3	1	44
6,000– 6,999	5	15	3	3	1	...	27
7,000– 7,999	5	7	1	4	3	2	22
8,000– 8,999	1	6	3	2	2	4	18
9,000– 9,999	2	5	1	1	1	...	10
10,000–14,999	5	13	5	2	8	5	38
15,000–17,634	...	2	1	1	2	...	6
Total No. of Farms ...	30	84	34	39	29	15	231
	£	£	£	£	£	£	£
Total Average per Farm per Region (£) ...	7,047	7,245	6,525	5,976	8,169	8,756	7,113
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Percentage of farmers' estimate of market value	52·3	57·4	54·5	60·5	62·6	61·3	57·7

The average total capital investment per farm varied from £5,976 in Macleay to £8,756 in Inland. South Coast (£8,169) was the only other region above £8,000, while Big Scrub (£7,047) and Clarence (£6,525) were below the State average of £7,113. The table shows that these values are all very much below the farmers' estimate of walk-in-walk-out market values, average capital investment for all regions being 58 per cent. of the estimated average market value. The survey estimate of "total capital investment" does not include the value of the farm house, but the farmer's estimate of value does.

Appendix Table VIII.

Frequency Distribution of Investment in Land and Improvements: By Regions.

Land and Improvements per Farm.	Region.						State.
	Richmond–Tweed.		Clarence.	Macleay.	South Coast.	Inland.	
	Big Scrub.	Other.					
£	Number of Farms.						
1,170– 1,499	...	...	1	1	2	...	4
1,500– 1,999	...	4	3	2	2	...	11
2,000– 2,499	2	7	4	5	3	...	21
2,500– 2,999	4	10	3	6	3	2	28
3,000– 3,499	...	13	7	5	1	2	28
3,500– 3,999	5	11	4	4	1	1	26
4,000– 4,999	7	12	3	8	4	3	37
5,000– 7,499	10	19	6	6	6	2	49
7,500– 9,999	2	7	3	1	5	5	23
10,000–12,499	...	1	...	1	1	...	3
12,500–14,999	...	...	...	...	1	...	1
Total Number of Farms ...	30	84	34	39	29	15	231

Appendix Table VIII is based on an average long-term bank security values for the period of the survey for land and improvements, no allowance being made for the farm house. The average value of land and improvements for all regions was £3,108, Inland (£3,753), and Big Scrub (£3,690) being highest, and Macleay lowest (£2,432). The average investment in land and improvements (£3,108) was less than half the average total capital investment (£7,113).

Appendix Table IX.

Farmers' Estimates of Market Value of Their Farm: By Regions.

£ Walk-in-Walk-out Value Farmers Estimate.	Region.						State.
	Richmond–Tweed.		Clarence.	Macleay.	South Coast.	Inland.	
	Big Scrub.	Other.					
£			Number of Farms.				
2,000– 2,999	...	...	...	1	1	...	2
3,000– 3,999	...	1	1	2	3	...	7
4,000– 4,999	1	3	2	2	...	1	9
5,000– 5,999	...	4	1	3	1	...	9
6,000– 6,999	3	9	8	2	2	1	25
7,000– 7,999	1	5	3	4	2	1	16
8,000– 8,999	1	8	3	8	1	1	22
9,000– 9,999	2	10	1	3	1	...	17
10,000–14,999	9	20	4	10	7	4	54
15,000–19,999	11	12	8	1	4	3	39
20,000–24,999	2	4	1	2	5	4	18
25,000–29,999	...	6	1	...	2	...	9
30,000–39,999	...	1	...	1	...	...	2
40,000–60,000	...	1	1	...	...	...	2
Total No. of Farmers.	30	84	34	39	29	15	231
Average per Farm.	£13,473	£12,613	£11,962	£9,879	£13,041	£14,287	£12,330

The survey figures for total capital investment per farm averaged £7,113, compared with the farmers' estimate of £12,330. The difference was greatest in Big Scrub, where total capital investment was 52 per cent. of estimated walk-in-walk-out value and least (but still considerable) in South Coast, where the figure was 63 per cent.

Appendix Table X.

Frequency Distribution of Rate of Return on Capital and Capital Per Farm.

Rate of Return on Capital.	Value of Capital.											Total.
	£2,000 -2,999	£3,000 -3,999	£4,000 -4,999	£5,000 -5,999	£6,000 -6,999	£7,000 -7,999	£8,000 -8,999	£9,000 -9,999	£10,000 -12,499	£12,500 -14,999	£15,000 -19,999	
Per cent.	Number of Farms.											
—23 to —20	1	...	...	...	...	...	...	...	...	...	...	1
—19 to —15	...	1	2	...	...	...	...	...	...	...	...	3
—14 to —10	2	1	...	1	...	...	...	...	...	...	...	4
— 9 — 5	1	4	3	5	1	...	...	...	...	1	...	15
— 4 to — 0	1	7	11	8	8	2	3	2	2	1	1	46
+ 0 to + 4	2	7	9	15	8	11	4	3	8	2	3	72
+ 5 to + 9	...	2	9	6	10	2	7	3	11	4	1	55
+10 to +14	...	...	1	8	1	3	1	2	5	1	1	23
+15 to +19	...	...	1	1	1	1	3	...	1	1	...	9
+20 to +22	...	...	1	...	...	1	...	...	...	1	...	3
Total ...	7	22	37	44	29	20	18	10	27	11	6	231

Appendix Table X shows the relationship of return on capital to capital per farm and indicates that the farms with higher capital investment tended to give higher returns on capital. Of 44 farms with over £10,000 capital, 26, or 59 per cent. gave a return on capital of over 5 per cent., in contrast to the fact that of the 139 farms with capital of less than £7,000 only 41, or 29 per cent., gave a return on capital of over 5 per cent.

Appendix Table XI.

Frequency Distribution of Rate of Return on Capital v. Production Per Farm.

Rate of Return on Capital.	Production per annum—lb. cb.								Total.
	Under 5,000.	5,000– 7,499.	7,500– 9,999.	10,000– 12,499.	12,500– 14,999.	19,000– 19,999.	24,000– 24,999.	25,000– 29,999.	
Per cent.	Number of Farms.								
—23 to —20 ...	1	...	...	...	...	...	...	...	1
—19 to —15 ...	1	1	...	...	...	...	...	...	2
—14 to —10 ...	4	...	...	...	...	...	...	...	4
— 9 to — 5 ...	11	3	1	...	1	...	...	...	16
— 4 to — 0 ...	21	17	7	4	...	...	...	...	49
+ 0 to + 4 ...	16	25	18	6	1	1	...	...	67
+ 5 to + 9 ...	3	16	13	16	5	2	...	...	55
+10 to +14 ...	...	7	6	3	5	3	1	...	25
+15 to +19 ...	...	...	2	3	1	3	...	...	9
+20 to +22 ...	...	...	1	...	1	...	...	1	3
Total ...	57	69	48	34	12	9	1	1	231

Appendix Table XI shows that return on capital tended to increase with increasing production per farm. Fifty-seven of the 231 farms included in the survey produced less than 5,000 lb. c.b per annum and of these 19 showed a positive return to capital and only 3 had a return of 5 per cent. or higher. Only 23 of 69 farms producing 5,000 to 7,500 lb. c.b. returned above 5 per cent. on capital, further indicating that most of the low producers were receiving a return on capital less than the bank interest rate. By contrast, of 23 farms producing over 12,500 lb. only 3 showed a return on capital of less than 5 per cent.