farm policy

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farm policy

JOHN THOMSON
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C. I. A. Beale

Borrowing for Farm Development

A farmer wishing to expand his business and increase his income through a major development programme, must first examine his resources to ensure that means and ends are in rough conformity. Land, labour, capital and management must be equal to the demands placed on them at the various stages of the programme. The resources used need not necessarily be owned by the farmer himself, but he must at least be able to borrow or hire them.

THIS article is primarily concerned with the hiring of cash, but one should not assume that this is the only way of borrowing capital for development or any other purpose. Additional land, machinery, or livestock are perhaps most frequently acquired by purchase, either outright or on credit, but there is no particular reason why they should not be rented. Where a suitable opportunity offers, where the price is favourable, and where total funds are sufficient to meet the rent but not the cost of purchase, this may be the best course.

Borrowing funds for investment is undoubtedly a great convenience in some circumstances and may be very good business. Under the wrong conditions however, a debt to his banker can be a considerable worry to a farmer. In similar fashion, a loan can be a boon or a burden to the lender.

Clearly then, the circumstances surrounding loans are important in determining their success from the point of view of both parties. In turn, the factors making for success can be resolved into guiding principles.

BORROWING PRINCIPLES

If the first and most obvious principle is that borrowed funds must be repaid, it follows that the borrower must have the earning power, or gross returns, to meet this commitment together with any interest that is due. If the loan is for consumption purposes, he must stretch his existing income to repay it, but if the investment involved will contribute directly

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to his earning power, the task of course is simpler.

Development loans, which are in the latter category, would most often be required for a number of years and the borrower would need to ensure that his gross returns were equal to all his needs including repayment over the period concerned.

Capacity to repay a loan is not only a matter of having a large enough income, but is also dependent on the distribution and volume of cash receipts and expenses throughout the year. One should be careful to distinguish between annual profits on trading and the net cash flow through the bank account. A farm net profit, or loss, simply refers to the net movement in value of farm assets including cash and other assets as follows :

Annual Trading Account

Expenses	**£**	**Receipts**	**£**
Opening valuation		Cash receipts	
Cash expenses		Closing valuation	
NET PROFIT		NET LOSS	

The cash flow on the other hand, refers to total movements in cash only. Farm families commonly operate their personal budget through the same account as their business and the two can be treated as one. The annual cash flow may be summarised on a similar basis to the annual trading account for purposes of comparison as follows :

Annual Cash Account

Cash Expenses	**£**	**Cash Receipts**	**£**
Business cash expenses		Business cash receipts	
Personal cash expenses		Personal cash receipts	
NET CASH		NET CASH DEFICIT	

The actual ebb and flow of cash is continuous throughout the year and an annual statement would be of little value in assessing a farmer's ability to meet repayments of principal and interest as they fall due. Cash flow must therefore be mapped out in some detail over the expected period of a loan.

The borrower must be a good credit risk as well as having the capacity to repay his loan. That is to say, the organisation and prospects of his farm as well as his personal qualities must be sufficiently favourable for him to bear the risk of undertaking a loan of a given size. This borrowing criterion is just as important as earning capacity and capacity to repay the loan, but does not always lend itself to objective measurement. It includes many factors such as the proportion of the farmer's own financial interest in his farm and the extent to which this would be affected by obtaining a new loan; the business prospects of farming in the area and the industry in which he is engaged; the extent to which he is protected against loss of income by such devices as insurance,

contract costs and prices, and diversification of farm enterprises; his capacity as a farm manager, and his credit rating as a borrower.

We may thus speak of "The Three R's of Credit" — Returns, Repayment Capacity, and Risk-Bearing Ability. These are the main headings under which bankers and other lenders test the soundness of an application for funds. In their own interest borrowers should do likewise in calculating their credit requirements.

A peculiar myth, which seems to have quite wide acceptance, claims that bankers particularly, appraise farmers' loan applications only on a basis of profitability and the value of collateral security offered. While it is only prudent to take some form of charge over assets of the borrower where the loan has any size and the lender is investing depositors' funds, it will be readily seen from the foregoing that a great deal more enters into consideration. Indeed, if a man applying for a loan could show that a proposed venture was not only profitable, but that he had the capacity to meet interest payments and reduction arrangements on his overdraft as well as a satisfactory ability to bear the risks involved, separate consideration of the collateral would not arise.

TYPES OF LOAN AVAILABLE TO FARMERS

The following table gives the sums outstanding to major institutional lenders to agriculture at the end of June, 1965.

Rural Debt to Specified Lenders

	£m
Major Trading Banks	292
Commonwealth Development Bank	36
State Banks and Government Agencies	106
War Service Land Settlement	52
Pastoral Finance Companies	129
Life Assurance Offices	33
Total	648

Other sources of credit include merchants and tradesmen, who carry unpaid accounts for short periods; production co-operatives such as dairy and canning factories; and private lenders including friends, relations, and others who invest their funds through the agency of solicitors and accountants. Private lenders are generally considered to constitute one of the major sources of agricultural credit, although no figures are available to confirm this.

Regardless of the source of funds, two broad categories of loan can be distinguished — the fluctuating overdraft and the loan on fixed terms. Banks and pastoral finance companies are the main suppliers of the former, while loans from most other sources would be of the latter type.

Bank advances on overdraft provide a flexible source of funds particularly well suited to the needs of farmers. The borrower is permitted to overdraw his account up to a stated limit over a stated period. Regular reductions in limit are normally arranged, but within these restrictions a free hand is given to draw and repay. Interest is chargeable only on the funds actually in use, except as recently decided, where unused limits

of more than 10 per cent remain for six months or more on advances of £50,000 or greater. But this should not trouble most farmers very much. Interest rates are variable in accordance with general movements in bank interest rates ordered from time to time by the Reserve Bank.

Loans on fixed terms on the other hand, such as the term loans which have been provided by the banks since 1962, allow the drawing of fixed amounts by borrowers within stated periods and the repayment of fixed amounts of principal and interest at regular intervals. Interest is charged on the whole of the loan outstanding, whether the borrower makes use of it all at any given time or not. Although the arrangement is more rigid, interest rates are usually slightly higher, and borrowing costs are more expensive because of the basis on which interest rates are charged, term loans do have some advantages. While overdrafts are at least theoretically repayable on demand and interest rates are subject to variation, the borrower of funds on fixed terms is assured of his loan for the full period and at the rate stated at the outset. Also, there is no reason why rigid terms need be difficult to meet. Provision can be made for funds to be drawn in successive instalments to accord with stages in a development program and "repayment holidays" can be arranged to allow for the period between the commencement of development and the subsequent increase in cash receipts.

PLANNING THE USE OF CREDIT

Any sound set of farm development plans would ensure that the supply of cash throughout the development period was adequate for the needs of the programme. The same would apply to the availability of labour and land. After drawing up long-term plans and budgets therefore, or stating the objective in precise terms, the farmer would draw up a table showing the cash expenses and cash receipts he expected to meet at various stages of his development plan and by difference, the cash surpluses or deficiencies. Such a table is known as a trend-of-account budget and does in fact represent a forecast of movements of cash into and out of the farmer's bank account. As such, it should show all credit and debit items, whether these have any relevance to the development plans or not, and whether or not they have any direct connection with the farm.

The accompanying table shows a trend-of-account budget on a month-by-month basis for the first year of a development programme. Expenses are shown in detail with the monthly totals below. Income items are offset against these and the difference added to the previous monthly balance to show the trend.

While a monthly basis seems necessary for adequate planning in the first year and in each subsequent year as it becomes current, years further ahead could be covered in quarterly periods owing to difficulties of forecasting accurately the trends in seasonal conditions and prices. Despite these difficulties however, the exercise is worth pursuing to ensure that cash or credit funds are just adequate to requirements, and that earlier investment is neither needlessly restricted in volume nor later wasted because of a shortage of funds. For example, an initial outlay on pasture improvement could be kept unnecessarily small for fear that sufficient funds might not be forthcoming at later stages or, conversely, could later be wasted because of lack of the wherewithal to buy sufficient stock

Table 1

TREND-OF-ACCOUNT BUDGET

	July	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
1. Shearing and crutching		200							1,000				1,200
2. Licks and dips										200			200
3. Droving and carting						200				300			500
4. Petrol, oil and kerosene	50	50	50	50	50	150	50	50	50	50	100	50	750
5. Wages	150	150	150	150	150	300	150	150	300	150	150	150	2,100
6. Bags, packs and twine					100			200					300
7. Fertiliser											400		400
8. Crop insurance					200								200
9. Fencing		250									250		500
10. Plant					200								200
11. Travelling (business)											100		100
12. Personal and stores	100	100	100	100	100	200	200	100	200	100	100	100	1,500
13. Telephone, accountancy and stationery				25				50		25			100
14. Repairs											1,000		1,000
15. Rates and land taxes										250			250
16. Crown dues							147						147
17. Fire insurance				75									75
18. Life assurance											150		150
19. Bank interest			300						300				600
20. Old accounts	240												240
21. Income tax									2,100				2,100
22. Land purchase (July), rams (March)	4,100								100				4,200
Monthly expenses (present debt £5,000)	4,640	750	600	400	800	850	547	550	4,050	1,075	2,250	300	16,812
Income	600	450	625 150		300		3,000		900			550 8,400	14,975
TREND OF ACCOUNT	9,040	9,340	9,165	9,565	10,065	10,915	8,462	9,012	12,162	13,237	15,517 Peak	6,837	6,837

to realize its full carrying capacity.

When the figures in the trend of the account become negative or, "go into the red," some arrangement for borrowing will be required. The highest negative figure, known as the "peak debt," represents the maximum amount of credit required and will give a guide to setting the overdraft limit on the size of the loan. Projections of the budget into later years until the debt is cancelled out will help to decide the period over which the loan will be required.

Here one should perhaps issue a few notes of warning. Such budgets sound simple enough in principle and particularly during the stage just described in which cash flow is mapped out and the extent of any need for borrowed funds is demonstrated. There are traps in this for the unwary and it is worth knowing about them.

"SNOWBALLING" INVESTMENT

A development programme rarely consists of an investment period spread over say, one or two years followed by a repayment period in which the debt is steadily reduced until it disappears. One investment tends to lead to others and if these are not allowed for in the programme or are introduced after the programme has begun, either the programme or the reduction of the debt do not work out satisfactorily.

To take the case of a pasture improvement programme once again, the outlay on the new pasture, as we have said, must be followed by purchases of livestock to consume it. Extra stock will require additional water supplies and further sub-divisional fencing to maintain proper control of both pasture and stock. Extensions to the woolshed and yards may also be called for. Fodder harvesting machinery may be required to harvest additional feed in periods of seasonal flush growth in the spring and autumn, and in turn extensions to the machinery shed may be required.

NATURE OF THE LOAN OBTAINED

Having found from the "trend-of-account" budget that credit will be required to support the plan, it is necessary to adjust the budget to conform with the expected repayment arrangements for the loan. The size and frequency of repayment dates will be critical factors in the revised budget, particularly with regard to the occurrence of seasonal cash receipts and seasonal periods of low farm liquidity.

"Repayments" under overdraft arrangements simply consist of keeping the debt below succeeding annual downward adjustments in the limit. Seasonal factors hardly enter into consideration, except with regard to half-yearly interest charges which are normally too small in relation to the size of the advance to make much difference either way.

Where term loans are concerned however, or other fixed loans from such sources as the Commonwealth Development Bank, seasonal repayments should be timed carefully to ensure that they occur in seasons when the farmer is normally in funds.

In cases where seasonal liquidity fluctuates sharply, such as a grazier with almost no cash receipts apart from his annual wool cheque and

possibly a smaller one for crutchings, it may be necessary to combine a fixed loan for development with overdraft accommodation to meet "carry-on" requirements.

INCOME TAX

A most important trap in cash budgeting concerns the tricky and far-reaching effects of income tax. This article cannot point out all the hurdles to be overcome in this respect, but a couple of major ones at least, should be emphasised.

Under special concessions to farmers and graziers, a wide range of capital expenditure on development is chargeable against income for tax assessment purposes in the current year. Purchases of machinery can be depreciated at a special rate of 20 per cent over five years and an additional 20 per cent investment allowance is granted in the first year. Machinery in effect can thus be written off at 40 per cent in the first year and 120 per cent over five years. Other provisions of the Income Tax Act relating to valuations of livestock can also operate to lower taxable income, and incidence of tax in the early years of a programme can be very low or nil.

The Treasury is not quite so sacrificing in the long run, however. Net farm incomes can rise considerably in the early years, well before the debt is repaid and after tax-deductible capital improvements have ceased. Interest and principal repayments are not deductible and must be met in addition to cash outlays. The farmer's assessable income will therefore rise faster than his net farm income and at the same time, extend into progressively higher marginal rates of tax. Also, if the rise in income takes the assessable income above £4,000 for the first time, the farmer will start to lose the benefits of averaging income and will pay a higher rate of tax on that account also.

All these factors need to be taken into account in mapping out the trend-of-account if the planning of credit requirements is to be effective.

Adequate planning is more than half the battle in borrowing funds for farm development. It is the most important factor in containing risk. It protects both borrower and lender. It impresses the lender with the ability and reliability of the borrower and hence increases the chances of obtaining a loan, and of receiving sympathetic consideration of future applications for funds. All in all, it helps the borrower to sleep at nights.

J. S. Nalson

The Farm Labour Force in Western Australia

Within the next 10 years considerable changes may be necessary in the way farm work is done, in the sort of labour which is employed and in the employment within agriculture of a proportion of farmers' sons for whom there may not be scope or adequate employment on the home farm. This article summarises a report on farm labour to be published soon by the John Thomson Agricultural Economics Centre.

INFORMATION about the farm labour force in Western Australia was obtained from a sample of farms respresentative of all those over 1,000 acres in the agricultural areas and of all those between 200 and 1,000 acres in the higher rainfall areas of the south-west.

FAMILY LABOUR PREDOMINANT

Three-quarters of all farms were either one-man or two-man units consisting of the farmer alone, or of the farmer and one other full-time worker. Farmers themselves comprised half the full-time labour force, and the other half consisted of approximately equal numbers of family and non-family workers. At the time of the survey, on the farms of 1,000 acres and over, there were about 14,000 farmers and male members of their families working full-time and about 4,500 non-family workers.

Farms on which there were relatives of the farmer available for work had, on average, more full-time workers than had those with no relatives available. However, there was a tendency for those farms with available relatives to have either more total land, more cleared land, more crop or more sheep than those with no relatives available. The type of extra resource which was associated with the farms having relatives available

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appeared to depend on the amount of land still to be cleared on and off farms in each region, and the suitability of the region for cropping or for increase in the sheep stocking rate.

In general, the larger area of crop or number of livestock on the farms with available relatives did not appear to compensate for the greater numbers of full-time workers compared with that on the farms where relatives were not available. Consequently, the 'available relatives' farms had a lower efficiency of labour use, as measured by area cleared, area of crop or number of sheep units per full-time worker.

Much more detailed comparative information would be necessary before it could be stated whether the farms with available relatives were obtaining an increased net return for their extra labour or, conversely, whether similar inputs of employed labour would increase the net returns of those farms with no relatives available for work on them.

NON-FAMILY LABOUR

Eighty per cent of the full-time workers who were not members of the farmers' families were employed on farms where relatives were not available for farm work.

The non-family labour force had a young age structure, suggesting a recruitment of young workers but a tendency for farm workers not to remain in agriculture throughout their working life. On farms of less than 3,000 acres, young single men predominated. Of these men, two-thirds had been employed on those farms for one year or less. On farms of 3,000 acres or more, two-thirds of the non-family workers were married, but even amongst these only half had been employed on the particular farms for more than one year.

Livestock dominant farming tends to require labour throughout the year more than does crop dominant farming. Consequently a worker who is likely to stay on the farm the year round, is more desirable on a livestock farm than is one who may leave at a moments notice. Equally, from the workers' point of view, employment is likely to be more secure on livestock farms. Because of the responsibilities associated with marriage, married men are usually less mobile than single men. These indications are borne out by the survey figures which show that the more the farms of a region were dependent on livestock, the higher was the proportion of married workers employed on farms in that region.

The survey also showed that the proportion of married workers on farms varied with the distance of the farms from Perth.

These trends suggest that the farms in the regions which are the ones with considerable potential for high rates of stocking, nearer to Perth, may have less difficulty in obtaining permanent labour than those in the developing regions, remote from Perth, and with crop-dominant types of farming. In the developing and cropping regions, married workers tended to be engaged in sharefarming. They operated mainly on farms which did not have family labour available apart from the farmer, and which had a higher than average number of sheep and area of crop per full-time worker. In the Sheep and Cereals Region sharefarming occurred on stock dominant farms. The sons of farmers from one property sharefarmed an area of crop on other farms which had inadequate labour for all the cropping of which their farms were capable. In view of the potential for increasing the rate

of stocking in this Region, and in the over 25 inch Rainfall Region, share-farming with *sheep* should be considered as one way of providing the extra capital and labour which could be necessary to achieve the potential stocking rates perceived at present.

Migrants did not form a significantly greater proportion of full-time farm workers than in the total population but their distribution was markedly different between regions. Irrespective of nationality, they were concentrated in the higher rainfall regions out of all proportion to the number of farms in those regions, suggesting that recruitment of migrants for full-time work has not been very successful in the lower rainfall and wheat and sheep areas of the State.

CASUAL AND CONTRACT LABOUR

The heavy reliance on family labour and the high turnover of non-family full-time labour were associated with a high degree of employment of casual and contract labour. Only four per cent of the farms of 1,000 acres and over did not employ either casual or contract labour, or both, and even for the group of farms of 200-1,000 acres, the proportion not employing them was only 16 per cent.

In all areas, contractors were important for developmental work and for seasonal work. However, they were not used much for general work and casuals were mainly of importance for seasonal work. Over three-quarters of the farms of 1,000 acres and over employed casual and/or contractors for shearing, and half of the farms also employed them for other seasonal work.

The figures from the Bureau of Census and Statistics for temporary employment on farms are only for March 31st each year. They do not reflect the seasonal pattern and high degree of dependence on casual and contract labour revealed in this survey. It seems desirable that more details about such labour should be collected by the Bureau, with a minimum requirement that numbers of temporary workers on farms be ascertained at different times of the year so as to record the seasonal peaks for each type of farming.

CHANGES IN LABOUR EFFICIENCY

The survey indicates that the supply of farmers' sons and other people entering farming is such that a 33 per cent increase in the farm labour force would occur by 1974, even if the proportion of farmers' sons entering farming were to drop by 5 per cent, the number of 'outsiders' were to drop from 40 to 30 per cent and the non-family labour force were to drop by 20 per cent. Should this increase in the farm labour force occur, it will result in a considerable slackening in the rate of increase in labour efficiency measured by sheep numbers and crop acres per man. To maintain the present rate of increase in labour efficiency, sheep numbers and crop areas must increase at about double their rate of the last 10 years. Such a rate of increase in sheep could be achieved by importing 500,000 sheep per year or by some importation, together with an increase in overall lambing percentage and a reduction in the proportion of the sheep flock sent for slaughter. The general adoption of a 2 in 5 crop rotation could

double the rate of increase in crop area.

A considerable increase in the size of the farm labour force by 1974 would be contrary to the trend of the past 10 years, which has been for the full-time labour force to increase at about 0.3 per cent per year. This rate of increase in labour will remain constant however, only if a substantial reduction occurs in the proportion of farmers' sons entering farming, if some farmers' sons replace non-family workers on their parents' farms, and if some work for other farmers. With an almost stationary labour force, existing rates of increase in labour efficiency would be maintained with existing cropping proportions and stocking rates and at current rates of clearing of new land.

If stocking rates presently seen as feasible were to be achieved by 1974, it would involve an increase in sheep numbers of almost 180 per cent. The magnitude of this change can be gauged from the fact that, to achieve it, the annual rate of increase in the number of sheep would have to more than double from the five per cent compounded per annum, which has been the average rate for the past 10 years, to about 10.7 per cent compounded for the next 10 years. Imports of 1,500,000 sheep per year for the next 10 years would achieve this or increase in lambing percentages and /or reductions in slaughterings which would give equivalent net additions to the State's flock.

Livestock increases of this magnitude will not be practicable without either a doubling in the full-time labour force in the sheep dominant regions or, alternatively, a doubling in the efficiency of full-time labour employed on sheep farms or some combination of both. A doubling of the labour force in sheep regions would involve an increase of 7,000 in the numbers of non-family workers employed full-time. This would pose considerable problems of training, recruitment, housing and remuneration. The increased labour bill alone could amount to £7,000,000 per annum. A cheaper alternative may be to use increased amounts of casual and contract services and develop and adopt innovations in sheep husbandry to enable more sheep to be handled per unit of full-time labour.

The need in the future may be for labour efficiency to increase at a faster rate to keep pace with increases in physical productivity, or alternatively, for the absolute size of the full-time labour force to be kept more or less stationary to match the existing rate of increase in physical productivity. Whichever need becomes paramount, it appears that changes will be necessary in the way work is done, in the sort of labour which is employed, and in the employment within agriculture for those sons of farmers for whom there may not be scope or adequate employment on the home farm.

Systematic information is not available on the magnitude and nature of the required changes in labour use, in its organisation, and substitutions for it, which are occurring on some West Australian farms and which may be needed on others. Nor do the official sources of information on labour in agriculture adequately record the changes which appear to be occurring as farmers substitute, or add, contract and casual labour services for permanent labour. Another part of this research project will be an investigation into some of these matters.

D. H. McKay

Stabilisation in Australian Agriculture

Australian schemes which either are called stabilisation schemes or in their effect give stability in one form or another variously include: guaranteed prices, two price schemes, bounties and subsidies, mixing requirements, protection from imports, protection from substitutes, production controls and orderly marketing.

THE first major objective of "stabilisation" in the inter-war period was one of providing direct financial assistance to primary producers. This assistance, especially in the early 1930's, was essentially a form of income relief. The wheat industry was the main recipient of this form of aid, but practically every major primary industry with the exception of wool also received financial assistance.

In addition to direct assistance, the pre-war period saw the emergence of the objective of providing security to producers by way of two price schemes, orderly marketing arrangements and attempts to guarantee a return for the entire output.

With the outbreak of War, important changes in the existing stabilisation arrangements had become constitutionally practicable. One of the most important aspects of war-time control was the establishment of organised marketing on a Commonwealth basis and the formation of comprehensive stabilisation arrangements. The twofold effect of these developments was to educate producers in the benefits of national marketing and stabilisation arrangements and to provide a basis for post-war schemes.

The objectives of stabilisation policies during the war were as much related to the war effort as to the interest of individual rural industries. Foremost in the Government's policies at this time were the objectives of preventing inflation of domestic prices, of controlling output of rural commodities according to domestic and oversea requirements, and of

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assuring a reasonable income to producers. These were also the objectives which were sought in the early post-war period.

Soon after the beginning of the war, home consumption prices were established for wheat, butter, cheese, dried vine fruits and other commodities as part of price control policies. In addition, stabilisation and assistance plans were introduced for the wheat and dairy industries.

As the economy progressed in its task of reconstruction, it became evident that expansion of rural output was not taking place at a rate adequate to meet the needs of the increasing population and to provide the rising volume of exports needed to finance larger imports. The war-time and post-war policies, while conducive to economic stability to producers and to the economy as a whole, were not considered appropriate for bringing about the desired expansion in output. This resulted in a major change in emphasis in agricultural policy, the previous goal of price and income stability being subordinated to a more pressing need of expansion of output of export and import-competing commodities.

In 1951, it was reported that the rate of increase in primary production was about one per cent compared with a rate of population growth of approximately three per cent. These trends gave rise to concern that within a short time, supplies available for export, especially the food items of wheat, meat and dairy products, could be greatly reduced, if not eliminated by rising domestic consumption. At this time Australia was also committed to supply foodstuffs to the United Kingdom and to contribute to easing the dollar problem of the sterling area.

The relegation of price stability objectives to a lower plane coincided in part with the downward trend and generally greater stability in world prices for agricultural commodities which followed the re-adjustment of prices after the Korean boom and the operation of international commodity agreements. World prices moved down from the record levels of the early 1950's and began to show the effects of increasing agricultural production, much of it under mounting agricultural protectionism. During this period, the relative importance of the agricultural sector had also shown decline and the use of agricultural price policy as a major instrument of general income and employment policy became less relevant.

In the early 1950's the post-war stabilisation schemes for wheat and dairying were renewed for a further five-year period. While Government policy towards agriculture had shifted markedly in emphasis at about this time, this shift was not reflected in alterations in the basic structure of these stabilisation arrangements. These changes which were made, however, were related closely to the new production objectives.

In the late 1950's and early 1960's the emphasis was placed largely on providing security of income to the producer and on the provision of uniform and stable prices to consumers. This emphasis was reflected in the extension of the quantitative guarantee for wheat to 150 million bushels; and the evolution of provisions to permit a guaranteed price to operate under the special conditions of the dried vine fruit industry.

The goal of stimulating export production in line with the general needs of long-term economic development has continued but many of the means used to achieve these objectives are to be found outside the conventional stabilisation schemes. Expansion of most rural industries has been made increasingly difficult by the slowness of growth, and even restriction in some major overseas markets.

More recently new arrangements have been introduced for the assist-

ance of cotton and tobacco. Some elements of these arrangements apply to industries whose products are imported in substantial quantities. In the case of the cotton arrangement the Minister for Primary Industry indicated that "the level of assistance should be such as to induce the very heavy initial investment required in the more favoured areas, and should operate for a sufficiently long period to enable the currently less-favoured areas in Queensland to adapt to new conditions. The ultimate aim of any assistance should be to promote a self-contained and economic industry."

The tobacco stabilisation proposals contain provisions for marketing quotas and a minimum price.

Clearly the circumstances operating at the time when a stabilisation scheme is initiated bear on both its form and its objectives. The peculiar problems and characteristics of an industry, including the extent to which its product is exported, influence the nature of any stabilisation arrangement. In addition, the particular attitudes of the industries themselves as expressed through their organisations have an important bearing on such schemes.

It is often argued that Australian policy in relation to agriculture is a pragmatic one—that each problem and each industry is dealt with on an ad hoc basis. It is difficult to deny the broad truth of this argument although it is not entirely true. What is more difficult to argue is that in the circumstances of the historical development and particular problems of each industry and of constitutional limitation of powers that it should or could be otherwise. This has important implications for the development of criteria for future policy making.

OBJECTIVES

The stated objectives of stabilisation are those made by Ministers responsible for policy in the agricultural field. They may be summarised as follows:

1. *Income Objectives:*

   To raise the level of living of farmers.
   To make more secure the levels of living of farmers.
   To provide comparability of income between incomes in the farm sector and the non-farm sector.

2. *Price Objectives:*

   To guard against ruinous prices.
   To give prices fair to producer and consumer.
   To stabilise prices to producers and consumers so as to iron out fluctuations over the long-term.
   To provide a minimum level of farm prices.
   To give orderly marketing, i.e. to remove the competitive struggle among growers.

3. *Production Objectives:*

   To produce enough to meet domestic food and raw material requirements.

To produce enough to expand the volume of exports.
To encourage efficient production.
To orient production towards more favoured areas.

4. *More General Objectives:*

To give assistance to industries to enable them to adjust to a changed market situation.
In time of depression to offset effects of depressed conditions then expected to be temporary.

MEETING OF OBJECTIVES

The major problems within agriculture arise from three main sources: production variability, price variability, and cost instability. The stabilisation schemes in Australia have attempted to meet their objectives largely, although not exclusively through their impact on price.

Price Objectives:

In this discussion of the achievement of price objectives a situation has been assumed in which no stabilisation scheme is in operation. Estimates of the prices received by producers in this situation have been made based on the following assumptions:

1. That prices received for exports would not have been altered over the longer term by changes in supplies available from Australia.
2. That prices received for exports are the same as those received by the Marketing Authority.
3. That prices received for sales on the domestic market are the same as those received for exports.
4. That storage, handling and administrative costs are the same as those incurred by the Marketing Authority.

Based on these assumptions returns to producers of wheat and butter have been calculated for each season since 1946-47 and compared with actual returns in Table 1.

It is fair to say that as far as wheat is concerned there is no year in the series listed in the Table above in which growers were paid *ruinous* prices nor would they have received ruinous prices on the estimates made of the situation in the absence of stabilisation schemes. There are strong external reasons for the maintenance of prices. There is the International Wheat Agreement with its minimum pricing provisions and possibly more important the strong stock holding and selling policies of the major wheat exporters of North America. The general level of wheat prices in world trade is, at best, only partly determined by market forces.

In the case of butter the objective of guarding against ruinous prices has had somewhat greater meaning to the producer. In the years 1957-58 and 1960-61 the estimated price to the producer in the absence of a stabilisation scheme would have been 21d. and 23d. per lb. respectively. These would have been ruinous prices to a large sector of the dairy industry under any definition of the word "ruinous."

The objective of providing *a minimum level of farm prices* is closely linked with the objective previously discussed. In Australia no outright guarantee of minimum prices is made under any existing stabilisation arrangement, nor are the guarantees met by acquisition or regulation

Table 1

ACTUAL PRICES RECEIVED BY PRODUCERS OF WHEAT AND BUTTER AND ESTIMATED PRICES TO PRODUCERS IN THE ABSENCE OF STABILISATION SCHEMES

Year	Wheat Producers *		Butter Producers	
	Actual Prices	Estimated Prices	Actual Prices	Estimated Prices
	Per Bush. s. d.	Per Bush. s. d.	Per lb. † d.	Per lb. † d.
1946-47 ‡			20.62	20.23
1947-48 ‡			24.00	23.79
1948-49	11 3.4	13 10.7	26.00	26.06
1949-50	13 0.1	15 10.1	28.38	28.41
1950-51	12 7.4	16 3.8	31.42	29.70
1951-52	14 2.9	16 8.6	42.02	36.78
1952-53	14 11.7	16 4.9	47.10	37.04
1953-54	12 0.8	13 2.5	47.88	33.36
1954-55	11 11.8	11 6.6	46.63	37.14
1955-56	12 0.0	11 11.0	45.30	33.20
1956-57	12 6.1	13 2.4	44.47	27.37
1957-58	12 11.9	12 10.1	43.85	20.91
1958-59	13 2.0	12 3.8	46.37	30.99
1959-60	13 5.4	12 3.2	46.57	31.85
1960-61	13 7.6	12 7.8	44.87	22.73
1961-62	14 5.3	13 6.7	44.05	25.84
1962-63	13 11.3	12 10.4	45.34	29.67
1963-64	13 8.5	13 8.5	n.a.	n.a.

* Subject to the deduction of individual producers' freight.

† Commercial butter.

‡ Wheat Stabilisation Scheme began in 1948-49.

of supplies. However, there is the first advance on wheat and the underwriting of equalisation values at 40d. per lb. for commercial butter. In one sense they are a guarantee of a minimum price to producers but not in the sense that minimum prices are guaranteed in many overseas countries. Both are of great value to the producer. The value of the first advance on wheat accrues to the producer in two ways. First it gives him a payment for his wheat at the time of delivery. This payment is normally a fairly high proportion of the final price, and in most cases enough to cover cash costs. In recent years this has run at about 75 to 80 per cent of the final return to the producer. Second, it relieves the producer of the urgency to sell and places the Wheat Board in the position of a stronger seller, to the advantage of the grower.

The arrangement on the Commonwealth's underwriting of equalisation values for butter has similar effects.

The concept of a *fair price to producers and consumers* is very much a value judgment. It is pertinent to comment that given the protection afforded to the non-rural sectors of the economy through tariff and other means, this price can be reasonably expected to be above the export price. For dairying, and to a lesser extent wheat, the schemes have resulted in recent years in a level of domestic price above the export price. As far as one can see ahead this is likely to remain the case with butter. Whether this margin is comparable to the degree of protection afforded

to the non-rural sector is not one that readily lends itself to precise measurement. It may be added however that domestic prices for these products have moved up at a slower rate than earnings in the non-rural sector as measured by average weekly earnings in factories.

A further objective is *stability in prices to consumers*. Stability in this context has to be read as the absence of wide annual or seasonal variations. These variations in consumer prices for stabilised products have generally been less than for those of unstabilised products such as meats and wool.

Closely related is the objective of *stability of prices to producers*. It may be argued that the introduction of the stabilisation arrangements have given the producer greater stability of price. However, export prices for wheat have become much more stable in recent years. This reflects the existence of factors such as the International Wheat Agreement, the strong holding policies of the North Americans, and generally the extent to which world wheat prices are determined within a framework of administrative and political decisions.

It may be noted that in 10 out of the 16 years shown in Table 1, the average price for wheat to the Australian producer varied in the same direction as the estimated return based on export prices. In four of the six years where this was not the case the variation in both the actual price and the estimated price was less than 5 per cent. For the first few years of wheat stabilisation the actual price received was below the estimated return. Over the years 1954-55 to 1957-58 inclusive differences were negligible. Since then actual payments have exceeded estimated returns by amounts varying from 10d. to 14d. per bushel until 1963-64 when they were nearly identical. Prices for wheat received by the Australian producer have moved generally with movements in world price, and in recent years have varied little in absolute values from such prices.

The price guaranteed to wheatgrowers, which is also the domestic price, has of course been stable in relation to movements in prices and costs within the domestic economy, allowing for increasing efficiency in the industry as reflected in higher yields.

The introduction of the post-war stabilisation schemes for butter has certainly stabilised the price received by producers. After sharp increases from 1946-47 to 1952-53 actual prices paid to butter producers have been remarkably stable. This is due to the fact that only relatively small changes were made in the domestic price after 1952-53, and the total subsidy remained virtually unchanged. Production has also been relatively stable so that the proportion of high value domestic sales (relative to export values) has remained little changed as has the unit value of the subsidy. Returns to butter producers have, as a consequence, been much more stable than export values. It was noted earlier that butter prices received by producers have been substantially higher in absolute terms than estimated returns based on export prices. This situation has been brought about essentially by the operation of the Stabilisation Arrangement.

The objective of achieving *orderly marketing* by removing the competitive struggle among growers has certainly improved the competitive position of the individual seller. In the case of wheat, the creation of the Wheat Board with its powers to acquire and sell the crop is one of the vital features of the Wheat Stabilisation Plan. The operation of the Australian Dairy Produce Board, Equalisation and the associated marketing arrangements have also been of great benefit to the butter producer. An

important aspect of orderly marketing is that it permits the administrative arrangements necessary to give effect to two price schemes.

Production Objectives:

The objective of *producing enough to meet domestic food and raw material requirements* involves the question of import replacement. While there are still and will always be imports of some foodstuffs, the objective of providing enough food for domestic requirements has been met. Whether it has been met in terms of optimum resource allocation is a separate question.

Related to this objective is that of *producing enough to expand the volume of exports.* The export of wheat has certainly been expanded. The existence of the stabilisation scheme has probably been a factor in this expansion, but as already noted, external factors have also been important. In addition the opening of new and large markets has been a vital element.

Exports of butter have been relatively stable. To the extent that they have varied, seasonal conditions were the factor largely responsible. In recent years import quotas operating in the United Kingdom and the development of markets in Asia for alternative butterfat products have been large determinants of total butter exports. Given the continuation of protective policies in other countries, butter production and exports would certainly have been at lower levels without stabilisation.

It would seem that stabilisation has been a factor in the increased volume of exports of both wheat and butter, which are sizeable export income earners. It may be accepted that stabilisation of rural industries in general has not affected exports from the secondary sector, minerals and other non-rural exports.

The objective of *encouraging efficient production* raises a large number of questions, and the answers to these questions are fundamental to an assessment of the success or otherwise of stabilisation, judged purely in economic terms. Defining efficiency as optimum resource use, stabilisation policies may have a bearing on "efficiency" at three levels:

i) in their effect on the efficiency of an industry and the producers in it;
ii) in their effect on the efficiency of the agricultural sector as a whole;
iii) in their effect on the total economy.

With regard to the first it may be argued that the present stabilisation schemes contain an element of inefficiency in that they keep the marginal producer in business. At the same time they have the effect of encouraging expansion by efficient producers. This leads to pressure on supplies which may worsen the situation of the marginal producer who then turns to the Government for further assistance.

There may also be some argument as to whether the determination of a specific yield factor in the cost formulae, where these are in force (wheat and dried vine fruits), is an encouragement to efficiency. There is a considerable reward for the producer who can produce at levels above the determined yield. There are some proponents of a high yield factor being determined as an incentive to efficiency. The price effect of such a yield determination may, of course, be unacceptable. Nevertheless, there would be wide agreement among economists that the existence of a stabilisation arrangement giving a certain security in price would result in a more efficient use of resources within an industry. This would include the more

rapid adoption of new techniques of production, particularly in the case of those which require the expenditure of large capital sums. The existence of the stabilisation scheme is an encouragement both to producers to undertake the investment and to lenders to provide the money.

There is the second point as to whether stabilisation arrangements have led to efficiency of production in the sense of the most efficient allocation of resources within agriculture as a whole. To the extent that stabilisation now operates over a wide range of agricultural commodities *and* one accepts the general proposition in the preceding paragraph, it may be concluded that on balance there is a more efficient use of resources generally within agriculture than would be the case if there were no stabilisation arrangements at all. This is not to say that an optimum allocation of resources has been obtained—far from it. There is probably no definitive answer to the latter problem.

The third point, as to whether stabilisation in some agricultural commodities has led to greater efficiency in the economy is, in the present state of knowledge, also a matter of judgment. Stabilisation has involved transfer payments from the non-farm sector to the farm sector. This may have attracted some resources into the farm sector. However, the various protective devices applied to the non-farm sector have involved transfer payments, and resource shifts in the opposite direction. Stabilisation of agriculture has given relative stability in consumer prices of many agricultural products to the non-rural sector. It has also been a factor in preserving the farmers' purchasing power as a consumer of the products of secondary industry, thus providing a small element of security to the total economy.

On balance, my judgment is that stabilisation in agriculture has not led to any worse allocation of resources within the total economy than would have been the case *if market forces alone had been left to determine such allocation for agriculture.*

Income Objectives:

It has already been noted that the objective of *raising farm incomes* is seldom, if ever, stated explicitly now. There is no generally low income in some sectors of some or even all industries. An examination of farm income statistics shows wide fluctuations in aggregate farm income, but in general, the level of aggregate farm income is much higher in real terms than it was in the 1930's when the objective of raising farm incomes was most frequently put forward.

The figures in Table 2 show that the farming community has maintained its gross spending power after a fall from the high levels of the early post-war period, and the boom conditions of 1950-51.

The influence of the stabilisation arrangements on the farmers' attitude to investment and expansion has no doubt been one factor in this increase. The effect on wheatgrowers' revenue of the protective element of the stabilisation arrangements had been negative over the early life of the arrangements, but had been a relatively small positive sum in recent years. The substantial increase in production and acreage has been the obvious factor directly contributing to the increase in wheatgrowers' farm income. This expansion—undertaken against the security of stabilisation has been facilitated by a run of generally good seasons and new market opportunities.

In the case of dairying, the value of the arrangements to the butter and

Table 2

INCOME AND SPENDING POWER OF FARMERS AFTER TAX ‡

Item	1948-9	1949-0	1950-1	1951-2	1952-3	1953-4	1954-5	1955-6	1956-7	1957-8	1958-9	1959-0	1960-1	1961-2	1962-3
1. Income of Farm Unincorporated Enterprises (previously Farm Income) £ million.	303.1	432.4	740.1	443.8	557.6	484.2	429.0	446.1	527.7	348.1	474.5	482	494	466	557†
2. Gross Spending Power £ million.	331.1	484.4	806.1	497.8	623.6	576.2	537.0	568.1	648.7	479.1	607.5	624	639	614	709†
3. Income Tax Paid (Credited to Assessment Year) £ million.	38.2	48.7	170.4	66.9	100.5	105.4	83.7	62.9	56.4	80.1	40.8	42.2	49.7	54.1	49.1
4. Real Income after Tax per ruray non-employee* £	1,589	2,067	2,740	1,501	1,619	1,303	1,179	1,251	1,469	839	1,349	1,336	1,293	1,188	1,465
5. Index of 4 * *	109	141	188	103	111	89	81	86	101	57	92	91	89	81	100
6. Real Gross Spending Power after tax per rural non-employee * £	1,757	2,347	3,057	1,716	1,870	1,619	1,547	1,650	1,845	1,249	1,763	1,767	1,715	1,459	1,904
7. Index of 6 * *	101	135	175	98	107	93	89	95	106	72	101	101	98	84	109

‡ An extension of Table 2 from F. H. Gruen, "Australian Agriculture and the Cost-Price Squeeze", Australian Journal of Agricultural Economics. Vol. 6, No. 1, Sept. 1962, Page 5.

† The relevant figures for 1963-64 are estimated as £705 million farm income and £862 million Gross Spending Power.

* Deflated by B.A.E. "Living Expenses" Series.

**Base of 1952-53 to 1953-54 equal to 100.

cheese producer have been of the order of £35m. to £40m. annually with domestic sales of butter valued at export parity. This suggests that, as a result of stabilisation, dairy farmers' incomes have been raised above the level they might otherwise have been. It may be argued that without stabilisation considerable adjustment may have occurred in the dairy industry—the elimination of marginal producers—which may have led to a rather different price and income situation. Undoubtedly there would have been some adjustment, but recognising the immobility of resources within this industry, it is unlikely that it would have been sufficient to give those dairy farmers remaining in the industry an income equal to that brought about by stabilisation. No-one would claim that stabilisation alone can, or will, solve the problem of the relatively large low income sector of this industry.

There can be no doubt that stabilisation arrangements, by their very nature, have given farmers a measure of *security of income*. This security has largely stemmed from their influence on price. Production remains subject to the hazards of seasonal conditions. Movements in farmers' costs largely have their genesis in other sectors of the economy, but costs may be influenced directly, in either direction, by policy decisions, such as a subsidy on superphosphate. Those industries whose stabilisation arrangements include an annual cost adjustment formula, have had the impact of this variable largely removed. Probably well over half of the farmers in Australia get some help from orderly marketing, home price schemes and other arrangements which help to give them greater security of income than they might otherwise have.

To some extent the cost of production formula as it operates in the wheat and dried vine fruits industries has in it a suggestion of comparability of income. The inclusion in the formula of an owner/operator's allowance usually in excess of the relevant award wage for the industry implies some consideration of a guaranteed labour reward at least equivalent to the labour rewards of many non-farm occupations. This, in addition to the allowance of interest on capital (including land), has the effect of putting the producer in these industries in at least as happy a position as the self-employed person in the non-farm sector, provided that the farmer is operating at or above some accepted level of average farm size for his industry.

CONCLUDING REMARKS

A discussion of stabilisation policy in Australia is incomplete unless attention is drawn to the various limitations placed on Governments in the determination of such policy. These limitations have varying degrees of force.

The most obvious is constitutional. Problems arising from Sections 51 and 92 are those which come most readily to mind. Practically all formal stabilisation arrangements require the agreement of and complementary legislation by the States. This gives any one State a virtual veto on a proposal which it does not favour.

International obligations have an important impact on any Government's choice of means to achieve the objectives of its stabilisation policies. Examples are commitments under the G.A.T.T. which have considerable legal force; undertakings given within F.A.O., for example Guiding

Principles for Agricultural Price Stabilisation and Support Policies, which have considerable moral force; commitments under international commodity agreements; and commitments under bilateral trade agreements.

Precedent and tradition within Australia cannot be brushed aside lightly. There must be good grounds for a Government to treat one industry differently from another. Often there are, but the industry must be brought to understand and accept these differences. There is, too, the long held policy that industries must come to Governments with proposals for stabilisation.

As a matter of good financial management, Governments prefer that the commitment of public monies to stabilisation funds be for a predictable amount. Certainly Treasuries prefer this situation.

A further consideration in Australia is the extent of our dependence on exports for most of our primary products. This is a consideration which affects each industry to a different degree.

This article has dealt with the question — "how effective have the stabilisation measures been in achieving the objectives stated?" But it may be suggested that this is only part of the question. Economists would probably prefer to ask whether the stated objectives of stabilisation in relation to incomes, price and production within agriculture which seem to be generally accepted by the community, have been achieved in the most efficient way possible.

Some of the objectives themselves may be questioned or at least qualified. No-one would quarrel with the objective of orderly marketing. The argument can be only about the degree of benefit to producers from such arrangements. The more cantankerous may wish to argue about the degree of benefit to consumers. There are not many industries remaining in Australia in which some form of orderly marketing has not been introduced.

The objective of security of income is one which would still win almost universal approval. But how valid is the cost of production approach as a means of achieving security? Is it valid to use the same general formula for an industry whose average return to land and management is of the order of £2,000 per annum as for an industry whose return is £200 per annum? It has already been noted that the raising of farm incomes seems to loom less largely in people's minds than it did once, although this is largely a matter of economic circumstances. Stabilisation plans or arrangements applicable to a whole industry may not be needed to solve the problems of the low income sectors of agriculture. Other forms of assistance by the community may be needed but these in turn may have social and political difficulties. Reconstruction proposals for the dairy industry are an example.

Often the purely economic solution of a problem is readily apparent (to some at least). Equally, the political solution may be apparent. In many cases the political solution is not the economic solution. Moreover, it may be questioned whether the apparently pure economic solution that takes the existing export price as the equivalent of a pure competitively determined price is valid, when that export price reflects institutional and non-economic influences and may be very unstable in the long term; and when the question of market strategies becomes important. Even were the complete economic solution readily discernible, Governments find themselves in the situation of having to be fully aware of that economic solution, but then perhaps being obliged to find a solution which in addition takes some non-economic factors into account.

There is no doubt that there will be a continuing policy of stabilisation for agricultural industries and that the pragmatic approach of the past will continue.

The reason industries seek for Governments to intervene in this way is that, based either on observations of the past, or beliefs with respect to the future, or both; they do not accept that their (legitimate) aspirations will be fulfilled without Government intervention in the market. Governments assist them because they accept this basic proposition, and because they believe their intervention is consistent with the interest of the whole community. The question then is not whether Governments should intervene. It is by what means Governments should intervene.

J. Carlin

Trends in Western Australian Agriculture

There has been a great increase in agricultural development in Western Australia this century. Broad trends are measured in terms of the total and cleared area on holdings, area under crop and livestock numbers. Changes in labour efficiency are even more striking, and show that larger acreages and more livestock are being handled by fewer persons.

STATISTICS of the agricultural and pastoral industries of Western Australia have been collected since 1896. The lodging of a return is compulsory for the owner (or operator) of a rural holding of one acre or more. For statistical purposes a rural holding is defined as land of one acre or more in extent, used for the production of agricultural products or for the raising of livestock and the production of livestock products. Holdings of less than one acre on which commercial market gardens, nurseries, poultry farms or hatcheries are operated, are also included.

Since 1896 there have been several changes in the boundaries of regions and districts within the State. Until 1907 the State was divided into magisterial districts and in that year a rectangular grid system of Statisical Districts and sub-districts was introduced. Since 1929-30 the statistics have been compiled using local government boundaries (Road Board districts, now Shire Councils). The main changes since then have been in the amalgamation of these local government areas into Statistical Divisions, and in the recording and presentation of some of the statistics.

AGRICULTURAL DEVELOPMENT IN WESTERN AUSTRALIA

Broad trends in agricultural development in Western Australia can be measured by the total area on holdings, number of holdings, area cleared,

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area under crop and livestock numbers. Tables 1, 2 and 3 show these trends for the State and for the agricultural and pastoral areas respectively. Because of the change in boundaries in 1929-30, figures for agricultural and pastoral areas before and after that date are not exactly comparable and therefore the year 1933-34 was used as the base year for the indexes. Between 1929-30 and 1943-44 some statistics were recorded on a divisional instead of local government area basis. This has made it necessary to include the shires of Yilgarn, Dundas, Esperance and Ravensthorpe in the pastoral areas even though, particularly in recent years, the development in these shires has been agricultural rather than pastoral.

The total area includes all land alienated or leased from the Crown on holdings from which returns are received. Since 1908-9 this area has increased by 88 per cent in the State as a whole and by 84 per cent in the agricultural areas, but has fluctuated somewhat showing the effects of the depression and war years.

The number of holdings increased until 1933-34, then decreased, probably due to the effects of the depression and to the amalgamation of small farms, particularly in the south-west. There has been a small but steady increase in the number of holdings since the war, resulting from the War Service Land Settlement Scheme, and more recently, the opening up of land for selection in the sandplain areas and the outer wheat belt.

In the agricultural region the area and the proportion cleared on farms has increased greatly. In 1908-9, 4 million acres were cleared or partly cleared (18 per cent of the area on holdings). By 1963-64 this had increased to over 26 million acres which represented 64 per cent of the area on holdings. The area under crop includes all land planted to cereals, fruit, vegetables and tobacco. This area has increased from just over half a million acres to over 6.4 million acres, and at the same time sheep numbers have gone from 1.87 million to 15.9 million and cattle from 110,000 to 617,000.

The trends show fairly rapid agricultural development early in the century, followed by a period of slow development from the early 1930's until after the second war, and accelerated growth in the last 15 years. For example, sheep numbers have increased by 8.5 million in the last 15 years compared with just over 2 million in the previous 15 years.

Development in the pastoral areas has fluctuated markedly with only small overall increases in sheep and cattle numbers. It is doubtful if this picture will change much until many problems associated with pastoral land use are solved.

LABOUR EFFICIENCY

The size of the labour force has not changed proportionately with the large increases in cleared area, area under crop and livestock numbers. The number of males permanently working on holdings has actually decreased over the last 30 years, from 35,752 in 1933-34 to 30,472 in 1963-64. The average number per holding has also declined from 1.62 in 1933-34 to 1.34 in 1963-64.

Labour efficiency can be measured in terms of the total area, area cleared, area under crop, and livestock numbers per labour unit. These changes are shown in Tables 4, 5 and 6. Because of boundary changes,

figures for agricultural and pastoral regions before and after 1933-34 are not exactly comparable.

In the agricultural areas, each permanent male farm labour unit is now associated, on average, with 972 cleared acres, 234 acres of crop, 581 sheep and 22 cattle. In 1908-9 each labour unit was associated with only 280 cleared acres, 40 acres of crop, 129 sheep and 7 cattle. The shortage of labour during the wars is clearly shown in these tables. In the last 15 years there has been an accelerated increase in labour efficiency, and each labour unit is now associated, on average, with twice as many sheep and cattle, and nearly twice as much crop as in 1948-49.

The true situation in the pastoral regions is masked by the fact that all aboriginal labour is regarded, for statistical purposes, as being temporary, and is therefore not included in these figures.

Quite a lot of work on farms is done by temporary employees, but the Bureau of Census and Statistics only records those actually on farms at 31st March. However, the man-hours worked by temporary and permanent employees can be gauged from the value of wages paid to each of these groups. Figures are only available since 1952-53. They are shown in Table 7 and suggest that the total man-hours worked by temporary employees have declined relative to total man-hours worked by permanent employees. This would seem to reflect the impact of labour-saving machinery.

DEVELOPMENT TRENDS IN SELECTED AREAS

One or more shires were selected from several of the agricultural areas of the State to represent different types of farming :

Cereals and sheep (low rainfall)—Merredin and Narembeen.
Cereals and sheep (high rainfall)—Corrigin, Wickepin and Pingelly.
Cereals and sheep (northern region)—Carnamah, Coorow and Three Springs.
Intensive grazing—Kojonup and West Arthur.
Dairying, fat stock and fruit—Manjimup.
Whole milk—Harvey and Waroona.

The shires selected have shown little change in boundaries since 1933-34. Their trends in development and in labour efficiency are shown in Tables 8 and 9.

Total and cleared area per man has increased to a greater extent in the areas that are largely devoted to cropping. In the intensive grazing areas each man is handling more livestock but on about the same area as 30 years ago.

CHANGES IN FARM SIZE

Statistics of the numbers of holdings have only been available at the shire level since 1943-44. Trends in average farm size for the agricultural area and selected regions are shown in Table 10. All holdings of one acre or more are included, so the figures for average farm size may be affected disproportionately by small holdings near townsites. In 1959-60 a classification was made, by the Bureau of Census and Statistics, of

rural holdings according to size and type of activity, but this was only done at the divisional level. Of the 21,832 holdings in Western Australia, 3,995 (18 per cent) were termed unclassified, either operated on a part-time or small scale basis and whose total receipts for all products amounted to less than £600, or holdings used for intermittent grazing or attached to prisons or hospitals. Thus, figures for numbers of holdings and average farm size should be treated with caution.

The overall trend is towards greater farm size, particularly in the areas where cereal cropping is important. In Merredin and Narembeen farm size has increased by 75 per cent, but a levelling off has occurred in Carnamah and Three Springs. The average farm size in Kojonup and West Arthur has actually decreased since 1943-44.

Changes in farm area depend on many factors including the availability of land and the opportunity to use machinery. It is easier to increase farm size in regions where new land is still available, and these are also wheat growing areas where larger machines are handling bigger areas of crop than previously. Thus wheat-growing farms will probably tend to increase in size. In the intensive grazing regions where there is also less land available for alienation, increases in stocking rates have made farms more productive without the need to increase their area.

CHANGES IN OUTPUT PER MAN

An estimate of the changes in overall output per man permanently employed can be made from the trends in the production of wheat, oats and barley, wool, milk and the numbers of sheep, cattle and pigs slaughtered. In 1963-64, the value of these products comprised 87 per cent of the gross value of Western Australian rural production. At 1963-64 prices for each year examined, the overall physical output per male labour unit has increased almost five-fold since 1903-4. Details for the intervening years are as follows: —

Year	1903/4	1908/9	1913/4	1918/9	1923/4	1928/9	1933/4
Index of Output per Man	*100*	*103*	*128*	*162*	*170*	*205*	*239*
Year	1938/9	1943/4	1948/9	1953/4	1958/9	1963/4	
Index of Output per Man	*270*	*297*	*323*	*394*	*535*	*580*	

CONCLUSION

Fewer persons now handle larger acreages, more livestock and produce more per man than 50 years ago, and the greatest changes have occurred in the last 15 years. Technical and scientific developments will probably ensure that farming efficiency as measured by output per man will continue to rise. It is likely that farms in some areas will increase further in size, and when all available land suitable for agriculture in Western Australia is taken up, the number of farmers will probably decline.

TABLES COMMENCE OVERLEAF

Table 1

AGRICULTURAL DEVELOPMENT IN WESTERN AUSTRALIA

(Base: 1933/34 = 100)

Year	Total area on holdings*		No. of holdings		Area cleared		Area under crop		Sheep		Cattle		Male labour force†	
	million acres	*Index*	No.	*Index*	million acres	*Index*	million acres	*Index*	millions	*Index*	'000s	*Index*	'000s	*Index*
1908/9 . . .	142	*65*	11,732	*53*	4.06	*28*	0.59	*14*	4.10	*40*	742	*84*	18.0	*50*
1913/4 . . .	165	*76*	16,687	*75*	7.32	*50*	1.54	*36*	4.42	*43*	834	*94*	23.5	*66*
1918/9 . . .	182	*83*	16,013	*72*	7.58	*52*	1.61	*38*	7.18	*70*	944	*107*	20.9	*58*
1923/4 . . .	199	*91*	18,707	*85*	8.90	*61*	2.32	*55*	6.60	*64*	954	*108*	28.1	*78*
1928/9 . . .	218	*100*	21,198	*96*	13.0	*89*	4.26	*101*	8.94	*86*	838	*95*	33.7	*94*
1933/4 . . .	218	*100*	22,108	*100*	14.6	*100*	4.22	*100*	10.3	*100*	886	*100*	35.8	*100*
1938/9 . . .	212	*97*	21,262	*96*	15.9	*109*	4.68	*111*	9.2	*89*	768	*88*	32.0	*89*
1943/4 . . .	202	*93*	18,345	*83*	n.a.		2.70	*64*	11.0	*107*	871	*98*	26.3	*73*
1948/9 . . .	211	*97*	19,738	*89*	15.9	*109*	4.10	*97*	10.9	*106*	864	*98*	30.3	*85*
1953/4 . . .	222	*102*	20,132	*91*	19.8	*136*	4.48	*106*	13.1	*127*	830	*94*	29.8	*83*
1958/9 . . .	238	*109*	21,563	*98*	23.7	*162*	6.02	*143*	16.2	*157*	1000	*113*	30.4	*85*
1963/4 . . .	267	*122*	22,770	*103*	28.3	*194*	6.71	*159*	20.2	*196*	1299	*147*	30.5	*85*

* Includes land alienated or in the process of alienation, and land leased from the Crown.

† All males working permanently full-time on holdings at 31st March.

Table 2

AGRICULTURAL DEVELOPMENT IN THE AGRICULTURAL AREAS * OF WESTERN AUSTRALIA

(Base: 1933/34 = 100)

Year	Total area on holdings		No. of holdings		Area cleared		Area under crop		Sheep		Cattle		Male labour force	
	million acres	*Index*	No.	*Index*	million acres	*Index*	million acres	*Index*	millions	*Index*	'000s	*Index*	'000s	*Index*
1908/9 . . .	22.6	*72*	10,855	*52*	4.06	*29*	0.58	*15*	*1.87*	*37*	110	*42*	14.5	*47*
1913/4 . . .	27.5	*88*	15,606	*75*	6.99	*50*	1.53	*39*	2.12	*42*	89	*34*	19.7	*64*
1918/9 . . .	28.4	*91*	14,980	*72*	7.54	*54*	1.60	*41*	3.62	*71*	111	*43*	17.0	*56*
1923/4 . . .	32.0	*103*	17,462	*84*	8.69	*63*	2.30	*59*	3.16	*62*	156	*60*	23.6	*77*
1928/9 . . .	36.8	*118*	19,192	*92*	12.2	*88*	3.96	*101*	4.83	*94*	142	*54*	27.9	*91*
1933/4 . . .	31.2	*100*	20,838	*100*	13.9	*100*	3.93	*100*	5.10	*100*	261	*100*	30.6	*100*
1938/9 . . .	31.0	*99*	20,048	*96*	15.4	*111*	4.57	*118*	6.15	*120*	237	*91*	28.8	*94*
1943/4 . . .	28.4	*90*	17,529	*84*	n.a.		2.67	*69*	7.81	*153*	316	*121*	24.0	*78*
1948/9 . . .	31.2	*100*	18,919	*91*	15.5	*112*	4.04	*103*	7.36	*145*	308	*118*	27.7	*91*
1953/4 . . .	34.9	*113*	19,281	*93*	19.2	*138*	4.37	*113*	9.69	*190*	360	*138*	27.5	*90*
1958/9 . . .	39.7	*130*	20,546	*99*	22.8	*164*	5.86	*151*	12.7	*249*	426	*163*	27.5	*90*
1963/4 . . .	41.6	*135*	21,371	*103*	26.6	*191*	6.41	*164*	15.9	*312*	617	*236*	27.4	*90*

* Excluding the shires of Yilgarn, Esperance, Ravensthorpe and Dundas.

Due to boundary changes in 1929/30, figures before and after 1933/34 are not exactly comparable.

Table 3

AGRICULTURAL DEVELOPMENT IN THE PASTORAL AREAS * OF WESTERN AUSTRALIA

(Base: 1933/34 = 100)

Year	Total area on holdings		No. of holdings		Sheep		Cattle		Male labour force	
	million acres	*Index*	No.	*Index*	millions	*Index*	'000s	*Index*	'000s	*Index*
1908/9	119	*64*	877	*69*	2.23	*43*	632	*101*	3.47	*67*
1913/4	137	*73*	1081	*85*	2.30	*44*	746	*119*	3.83	*74*
1918/9	154	*82*	1033	*81*	3.56	*68*	833	*133*	3.91	*75*
1923/4	167	*89*	1245	*98*	3.43	*66*	797	*127*	4.50	*87*
1928/9	181	*97*	2006	*158*	4.11	*79*	695	*111*	5.77	*111*
1933/4	187	*100*	1270	*100*	5.22	*100*	625	*100*	5.20	*100*
1938/9	181	*97*	1214	*96*	3.03	*58*	530	*85*	3.19	*62*
1943/4	173	*93*	816	*64*	3.20	*62*	554	*89*	2.25	*42*
1948/9	179	*96*	819	*64*	3.51	*67*	556	*89*	2.59	*50*
1953/4	187	*100*	851	*67*	3.39	*65*	470	*75*	2.29	*44*
1958/9	199	*106*	1017	*80*	3.49	*67*	574	*92*	2.81	*54*
1963/4	225	*120*	1399	*110*	4.25	*83*	682	*109*	3.09	*60*

* Including the shires of Yilgarn, Esperance, Ravensthorpe and Dundas.

Due to boundary changes in 1929/30, figures before and after 1933/34 are not exactly comparable.

Table 4

LABOUR EFFICIENCY — WESTERN AUSTRALIA

Year	Total area per man* (acres)	Cleared area per man* (acres)	Area of crop per man* (acres)	Sheep per man*	Cattle per man*	Men working permanently per holding
1908/9 . .	7,892	230	33	228	41	1.53
1913/4 . .	7,019	311	65	188	35	1.41
1918/9 . .	8,727	363	77	344	45	1.30
1923/4 . .	7,072	317	83	235	34	1.50
1928/9 . .	6,466	384	127	266	25	1.59
1933/4 . .	6,097	409	118	289	25	1.62
1938/9 . .	6,622	496	146	287	24	1.50
1943/4 . .	7,681	n.a.	103	419	33	1.43
1948/9 . .	6,946	524	135	358	28	1.54
1953/4 . .	7,442	664	150	439	28	1.48
1958/9 . .	7,849	781	198	534	33	1.41
1963/4 . .	8,748	927	220	662	43	1.34
Percentage Increase	11%	303%	567%	190%	5%	

* In Tables 4, 5 and 6 "per man" means "per male working permanently full time on holdings at 31st March."

Table 5

LABOUR EFFICIENCY — AGRICULTURAL AREAS

Year	Total area per man (acres)	Cleared area per man (acres)	Area of crop per man (acres)	Sheep per man	Cattle per man	Men working permanently per holding
1908/9 . .	1,555	280	40	129	7.5	1.34
1913/4 . .	1,397	355	77	109	4.5	1.26
1918/9 . .	1,675	445	94	214	6.5	1.13
1923/4 . .	1,358	368	98	134	6.6	1.35
1928/9 . .	1,318	439	142	173	5.1	1.45
1933/4 . .	1,022	456	129	167	8.5	1.47
1938/9 . .	1,077	536	159	214	8.3	1.44
1943/4 . .	1,181	n.a.	111	325	13.2	1.37
1948/9 . .	1,123	558	146	265	9.1	1.47
1953/4 . .	1,269	698	159	352	13.1	1.43
1958/9 . .	1,440	829	213	462	15.5	1.34
1963/4 . .	1,518	972	234	581	22.5	1.28
Percentage Increase	—2%	247%	485%	350%	200%	

Table 6

LABOUR EFFICIENCY — PASTORAL AREAS

Year	Total area per man (000 acres)	Sheep per man	Cattle per man	Men working permanently per holding*
1908/9	34.3	642	182	3.96
1913/4	36.0	602	195	3.54
1918/9	39.4	911	213	3.79
1923/4	37.1	763	177	3.62
1928/9	31.4	713	121	2.88
1933/4	36.0	1,005	120	4.09
1938/9	56.8	951	166	2.62
1943/4	77.1	1,427	247	2.75
1948/9	69.2	1,357	215	3.16
1953/4	81.6	1,481	205	2.69
1958/9	70.9	1,242	204	2.76
1963/4	72.7	1,375	221	2.21
Percentage Increase	112%	114%	21%	

* All aboriginal labour is regarded, for statistical purposes, as being temporary.

Table 7

PERMANENT AND TEMPORARY EMPLOYMENT

Year	No. of permanent male employees receiving wages or salary at 31st March	Value of wages paid to male employees		'000s of man-hours worked (1 permanent employee = 2000 man-hours per year)	
		Permanent	Temporary†	Permanent employees	Temporary employees†
		£000			
1952/3 . . .	7,842	4,154	4,437	15,684	16,753
1953/4 . . .	8,281	4,599	4,685	16,562	16,872
1954/5 . . .	7,978	4,649	5,128	15,956	17,600
1955/6 . . .	7,861	4,838	4,952	15,622	16,092
1956/7 . . .	8,702	5,463	5,143	17,404	16,385
1957/8 . . .	8,936	5,770	5,670	17,972	17,661
1958/9 . . .	8,852	5,758	5,387	17,704	16,563
1959/60 . .	8,916	6,022	5,091	17,832	15,075
1960/1 . . .	8,991	6,514*	4,326*	17,982	11,942
1961/2 . . .	9,305	6,888*	4,385*	18,610	11,847
1962/3 . . .	8,758	6,943*	4,770*	17,516	12,034
1963/4 . . .	8,607	7,326*	5,081*	17,214	11,939

† Including contractors for seasonal work.

* Includes wages paid to females also—but the amount paid to females is likely to be small.

The number of permanent workers on wages or salary was multiplied by 2,000 to arrive at an estimate of man-hours per year worked by permanent paid. employees. This figure was then divided into the total wages paid to permanent employees to give a rate of payment per man-hour. This rate was then divided into the total wages paid to temporary employees and the resultant figure is an estimate of the man-hours worked by them.

There is no statistical evidence to show whether wages paid to permanent and temporary employees are actually comparable.

Table 8

AGRICULTURAL DEVELOPMENT OF SELECTED REGIONS

Region.	Year.	Area on holdings '000 acres	*Index*	Number of holdings	Cleared area '000 acres	*Index*	Area under crop '000 acres	*Index*	Sheep '000s	*Index*	Cattle '000s	*Index*	Male labour force	*Index*
Cereals and	1933/4	861	*100*	n.a.	530	*100*	221	*100*	90	*100*	3.57	*100*	963	*100*
Sheep—	38/9	927	*108*	n.a.	628	*118*	248	*112*	126	*140*	2.15	*60*	829	*86*
low rainfall	63/4	804	*93*	431	n.a.		139	*63*	276	*306*	3.14	*88*	621	*64*
(Merredin and	48/9	971	*113*	468	679	*128*	229	*104*	241	*267*	1.80	*50*	778	*81*
Narembeen)	53/4	1,154	*134*	450	826	*156*	245	*111*	332	*368*	1.52	*43*	737	*77*
	58/9	1,371	*159*	469	998	*188*	336	*153*	396	*439*	1.66	*46*	773	*80*
	63/4	1,548	*180*	475	1,163	*219*	372	*168*	397	*440*	1.95	*55*	750	*78*
Cereals and	1933/4	1,217	*100*	n.a.	772	*100*	232	*100*	283	*100*	3.81	*100*	1,253	*100*
Sheep—	38/9	1,174	*96*	n.a.	901	*117*	275	*119*	317	*112*	2.39	*63*	1,107	*88*
high rainfall	43/4	1,138	*93*	588	n.a.		180	*78*	404	*143*	2.87	*75*	765	*61*
(Corrigin,	48/9	1,243	*102*	620	938	*121*	261	*113*	368	*130*	2.44	*64*	917	*73*
Wickepin and	53/4	1,354	*111*	610	1,100	*142*	219	*95*	512	*181*	2.70	*71*	970	*77*
Pingelly)	58/9	1,363	*112*	607	1,161	*150*	338	*146*	613	*216*	4.26	*112*	982	*78*
	63/4	1,408	*116*	588	1,252	*162*	358	*154*	756	*267*	5.85	*154*	951	*76*
Cereals and	1933/4	816	*100*	n.a.	470	*100*	146	*100*	158	*100*	3.06	*100*	652	*100*
Sheep—	38/9	841	*103*	n.a.	497	*106*	182	*125*	201	*127*	2.06	*67*	561	*86*
northern	43/4	770	*94*	249	n.a.		103	*71*	278	*176*	2.47	*81*	384	*59*
(Carnamah,	48/9	816	*100*	248	512	*109*	153	*105*	203	*128*	1.60	*52*	484	*74*
Coorow * and	53/4	930	*114*	270	604	*129*	175	*120*	241	*152*	1.55	*51*	492	*75*
Three Springs)	58/9	1,135	*139*	284	744	*158*	202	*139*	290	*183*	1.82	*59*	497	*76*
	63/4	1,284	*157*	338	876	*186*	183	*126*	414	*261*	4.40	*144*	505	*77*
Intensive	1933/4	1,112	*100*	n.a.	609	*100*	35.8	*100*	301	*100*	4.15	*100*	684	*100*
Grazing	38/9	1,080	*97*	n.a.	614	*101*	35.7	*100*	350	*116*	3.35	*81*	637	*93*
(Kojonup and	43/4	946	*85*	424	n.a.		20.6	*58*	370	*123*	4.98	*120*	592	*87*
West Arthur)	48/9	990	*89*	477	405	*67*	34.7	*97*	386	*128*	5.74	*138*	652	*95*
	53/4	1,097	*99*	529	564	*93*	67.4	*188*	518	*172*	7.31	*176*	771	*113*
	58/9	1,213	*109*	601	677	*111*	80.6	*225*	748	*249*	11.7	*282*	820	*120*
	63/4	1,293	*116*	639	821	*135*	110.2	*308*	1,184	*393*	18.8	*453*	866	*127*
Dairying,	1933/4	333	*100*	n.a.	147	*100*	11.94	*100*	15.0	*100*	20.7	*100*	978	*100*
Fat Stock	38/9	278	*84*	n.a.	88	*60*	4.34	*36*	21.4	*143*	17.2	*83*	911	*93*
and Fruit	43/4	231	*69*	660	n.a.		6.47	*54*	12.1	*81*	23.1	*112*	1,011	*103*
(Manjimup)	48/9	196	*59*	634	83	*57*	5.97	*50*	12.0	*80*	22.5	*109*	922	*94*
	53/4	248	*75*	743	98	*67*	6.04	*51*	12.8	*85*	23.8	*115*	965	*99*
	58/9	259	*78*	739	115	*78*	9.49	*80*	25.1	*167*	26.3	*127*	916	*94*
	63/4	261	*78*	672	132	*90*	9.86	*83*	49.6	*331*	35.5	*171*	727	*74*
Wholemilk	1933/4	221	*100*	n.a.	89	*100*	5.33	*100*	29.9	*100*	22.3	*100*	788	*100*
(Harvey and	38/9	229	*104*	n.a.	97	*108*	3.74	*70*	55.8	*187*	25.8	*116*	798	*101*
Waroona)	43/4	231	*105*	668	n.a.		6.84	*128*	22.0	*74*	35.6	*160*	853	*108*
	48/9	235	*107*	659	121	*135*	4.18	*78*	21.1	*71*	37.7	*169*	922	*117*
	53/4	270	*122*	675	151	*169*	4.56	*86*	28.4	*95*	46.7	*209*	933	*118*
	58/9	289	*131*	605	161	*181*	5.96	*112*	37.9	*127*	50.8	*228*	905	*115*
	63/4	308	*140*	610	192	*214*	4.19	*79*	37.2	*124*	68.9	*309*	861	*109*

* Until 1962 Coorow was part of the Carnamah shire. Due to a small change in boundaries the total area of Carnamah and Coorow is slightly more than the former area of Carnamah.

Table 9

LABOUR EFFICIENCY IN SELECTED REGIONS

Region	Year	Total area per man * (acres)	Cleared area per man * (acres)	Crop area per man * (acres)	Sheep per man *	Cattle per man *
Cereals and Sheep—low rainfall (Merredin and Narembeen)	1933/4	894	550	229	94	3.7
	38/9	1,118	758	299	152	2.6
	43/4	1,295	n.a.	224	444	5.1
	48/9	1,248	873	295	310	2.3
	53/4	1,564	1,121	332	451	2.1
	58/9	1,774	1,290	435	513	2.2
	63/4	2,064	1,551	496	529	2.6
	Percentage Increase	131%	182%	117%	463%	—30%
Cereals and Sheep—high rainfall (Corrigin, Wickepin and Pingelly)	1933/4	972	616	185	226	3.0
	38/9	1,061	814	249	286	2.2
	43/4	1,488	n.a.	236	528	3.8
	48/9	1,356	1,023	285	401	2.7
	53/4	1,396	1,134	226	528	2.8
	58/9	1,388	1,182	344	624	4.3
	63/4	1,480	1,317	376	795	6.2
	Percentage Increase	52%	114%	103%	252%	107%
Cereals and Sheep—northern (Carnamah, Coorow and Three Springs)	1933/4	1,251	720	223	243	4.7
	38/9	1,499	885	324	358	3.7
	43/4	2,004	n.a.	269	725	6.4
	48/9	1,686	1,058	315	419	3.3
	53/4	1,891	1,228	355	490	3.2
	58/9	2,284	1,498	406	583	3.7
	63/4	2,542	1,734	363	820	8.7
	Percentage Increase	103%	141%	63%	237%	85%
Intensive Grazing (Kojonup and West Arthur)	1933/4	1,625	891	52	440	6.1
	38/9	1,695	964	56	550	5.3
	43/4	1,597	n.a.	35	624	8.4
	48/9	1,518	622	53	593	8.8
	53/4	1,423	732	87	672	9.5
	58/9	1,479	826	98	912	14.3
	63/4	1,493	948	127	1,367	21.8
	Percentage Increase	—8%	6%	144%	211%	257%
Dairying, Fat Stock and Fruit (Manjimup)	1933/4	340	150	12.2	15	21.2
	38/9	305	96	4.8	23	18.8
	43/4	228	n.a.	6.4	12	22.8
	48/9	213	90	6.5	13	24.4
	53/4	257	102	6.3	13	24.6
	58/9	283	125	10.4	27	28.8
	63/4	358	182	13.6	68	48.9
	Percentage Increase	5%	21%	13%	353%	131%
Wholemilk (Harvey and Waroona)	1933/4	280	113	6.8	38	28
	38/9	287	121	4.7	70	32
	43/4	271	n.a.	8.0	26	42
	48/9	255	131	4.5	23	41
	53/4	289	162	4.9	30	50
	58/9	319	178	6.6	42	56
	63/4	358	223	4.9	43	80
	Percentage Increase	28%	97%	—28%	13%	186%

* As in Tables 4, 5 and 6, "per man" means "per male working permanently full time on holdings at 31st March."

Table 10

TRENDS IN AVERAGE FARM SIZE FOR THE AGRICULTURAL AREAS* AND SELECTED REGIONS SINCE 1943/44

(Base: 1943/44 = 100)

Region.		Average farm size				
		1943/4	1948/9	1953/4	1958/9	1963/4
Agricultural Areas *	acres	1658	1672	1857	1991	2042
	Index	*100*	*101*	*112*	*120*	*123*
Merredin and Narembeen	acres	1866	2074	2564	2924	3259
	Index	*100*	*111*	*137*	*157*	*175*
Corrigin, Wickepin and Pingelly	acres	1936	2005	2220	2246	2394
	Index	*100*	*104*	*115*	*116*	*124*
Carnamah, Coorow † and Three Springs	acres	3091	3291	3446	3997	3798
	Index	*100*	*106*	*111*	*129*	*123*
Kojonup and West Arthur	acres	2230	2075	2073	2019	2023
	Index	*100*	*93*	*93*	*91*	*91*
Manjimup	acres	350	309	334	350	388
	Index	*100*	*88*	*95*	*100*	*111*
Harvey and Waroona	acres	346	357	399	477	505
	Index	*100*	*103*	*115*	*138*	*146*

* Including Shires of Yilgarn, Esperance and Ravensthorpe.
Dundas was omitted as there are many pastoral properties in this Shire.

† The total area of Carnamah and Coorow was slightly larger in 1963/4 because of shire boundary changes.