APPLE AND PEAR GROWING IN TASMANIA, VICTORIA AND WESTERN AUSTRALIA

AN ECONOMIC SURVEY 1965-66 to 1968-69

BUREAU OF AGRICULTURAL ECONOMICS • CANBERRA • AUSTRALIA

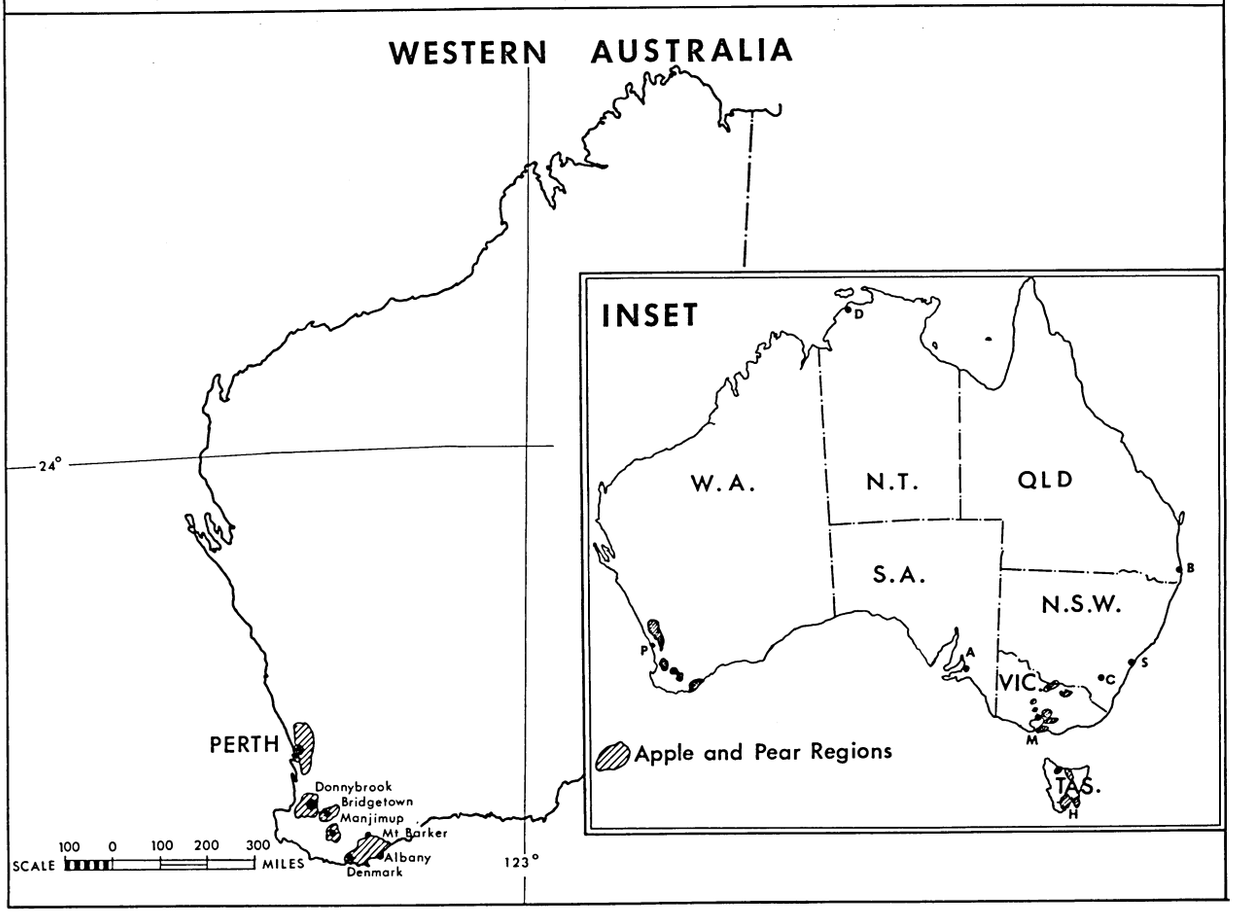
1972

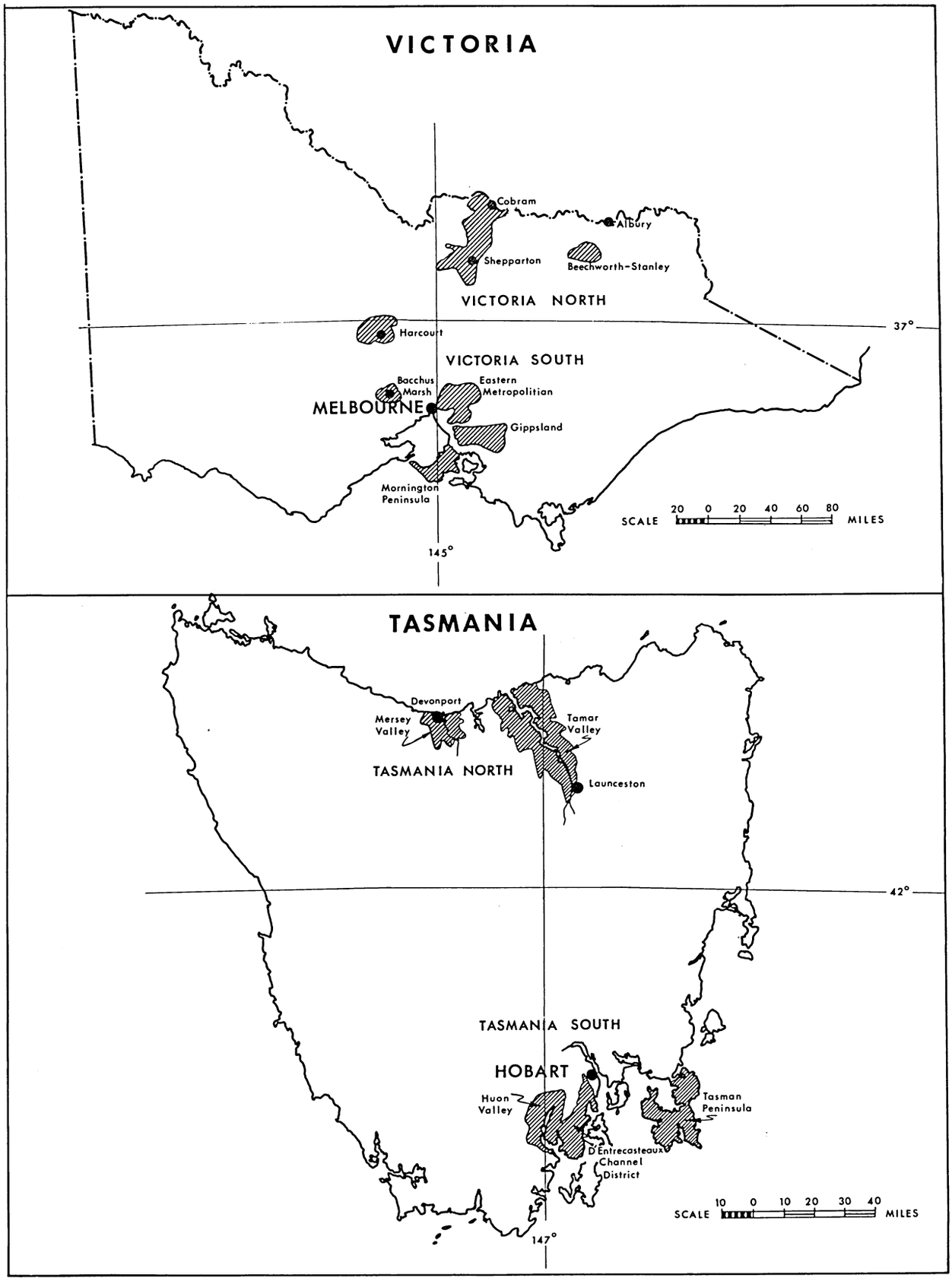
APPLE AND PEAR GROWING IN TASMANIA, VICTORIA AND WESTERN AUSTRALIA

APPLE AND PEAR GROWING

IN TASMANIA, VICTORIA AND WESTERN AUSTRALIA

ECONOMIC SURVEY 1969 : SURVEY REGIONS




VICTORIA
Cobram
Albury
Shepparton
Beechworth–Stanley
VICTORIA NORTH
37°
Harcourt
VICTORIA SOUTH
Bacchus Marsh
Eastern Metropolitan
MELBOURNE
Gippsland
Mornington Peninsula
SCALE 20 0 20 40 60 80 MILES
145°
TASMANIA
Devonport
Mersey Valley
Tamar Valley
TASMANIA NORTH
Launceston
42°
TASMANIA SOUTH
HOBART
Huon Valley
Tasman Peninsula
D'Entrecasteaux Channel District
SCALE 10 0 10 20 30 40 MILES
147°

BUREAU OF AGRICULTURAL ECONOMICS
CANBERRA AUSTRALIA

Apple and Pear Growing in Tasmania, Victoria and Western Australia

AN ECONOMIC SURVEY
1965-66 TO 1968-69

AUSTRALIAN GOVERNMENT PUBLISHING SERVICE
CANBERRA 1972

Registered at the General Post Office, Sydney,
for transmission through the post as a book

Printed by The GJL Group (Printers) Pty. Ltd.

FOREWORD

Apple and pear growing is a major horticultural industry in Australia and is of particular importance in certain regions. In recent years it has been faced with marketing difficulties overseas resulting from greater competition, increased shipping freight rates and sterling devaluation.

Following representations by the industry for a stabilisation scheme for export apples and pears, the Australian Agricultural Council recommended that an economic survey of the apple and pear industry be undertaken.

The economic survey, to which this report relates, was carried out by the Bureau of Agricultural Economics to provide up-to-date information on the economic situation of apple and pear growers. In 1970 preliminary results were made available to Commonwealth and State Departments and to the industry for examination in conjunction with stabilisation proposals.

The field enquiries in connection with the survey were carried out in the latter part of 1969 and covered the three major exporting States: Tasmania, Victoria and Western Australia. The information collected covered the four financial years 1965-66 to 1968-69. The Bureau's officers received excellent co-operation from individual growers, the growers' associations, exporters and packing shed operators, canners, processors and fruit wholesalers and officers of the State Departments of Agriculture. My appreciation of this assistance also applies to the accountants and tax agents who provided access to financial data upon which the survey results are largely based.

The direction of the survey, subsequent data analysis and preparation of the report was the responsibility of Mr D.J. Barker, Land Use Branch.

S.F. HARRIS
Director

Bureau of Agricultural Economics,
Canberra, A.C.T.
April 1972

CONTENTS

SUMMARY

Apples and pears are grown in all Australian States. Tasmania and Victoria are the major apple producers; Victoria also grows more than half of the total pear crop. Overseas markets are an important outlet - approximately 40% of apple production and 50% of fresh pear production have been exported in recent years. Tasmania and Western Australia provide nearly 90% of apple exports and Victoria almost 70% of pear exports.

Because of difficulties on export markets, the apple and pear industry requested a price stabilisation scheme for export sales. To assist the Commonwealth in the examination of industry proposals by the Commonwealth, it was decided to obtain economic data on the industry. The resulting survey was restricted to the major exporting States, viz. Tasmania, Victoria and Western Australia.

For purposes of the economic survey Tasmania was divided into two regions: Tasmania South, centred on the Huon Valley, and Tasmania North, which mainly covered the Tamar Valley near Launceston. Victoria was also divided into two regions; the southern region included the orchard districts near Melbourne while the districts of the Goulburn Valley, Harcourt and Stanley comprised the northern region. There was no subdividion in respect of Western Australia.

Apple and pear growing was the major enterprise on survey farms in Tasmania South, Tasmania North and Victoria South. In Victoria North, apricots, peaches and pears for canning, and in Western Australia, livestock, were also important.

The varietal composition of plantings varied between regions. The Granny Smith variety was of major importance in Western Australia and Victoria, but in Tasmania the greater part of apple acreage comprised varieties such as Cleopatra, Democrat, Jonathan and Sturmer, all of which usually bring lower prices on export markets.

In all regions, with the exception of Tasmania South, the proportion of apple acreage planted to young trees was more than sufficient to maintain the bearing area and consequently production in these areas can be expected to rise. However, significant increases in pear production do not appear likely. In Tasmania there was a large proportion of old apple trees which

are the most vulnerable to the effects of higher quality standards and increasing presentation and freight costs. The need to remove these trees in the near future could substantially reduce the bearing acreage and, therefore, production in this State.

Yields per bearing acre of apples averaged 570 bushels in Tasmania South but were less than 400 bushels in the other regions. Biennial cropping was a feature of both fruits, particularly of apples in Tasmania South, Western Australia and to a lesser extent in Victoria.

Tasmanian growers disposed of 70% of their apple production and more than 90% of their pear production on export markets. This outlet was also of major importance to growers in Western Australia (62% of apple production) and Victoria North (62% of pear production).

Most growers in Tasmania and Victoria South operated their own packing sheds and packed all or the greater part of the apple and pears produced on the farm.

Sales of apples and pears provided about 90% of gross farm receipts in the three specialist regions but slightly less than 50% in Western Australia and Victoria North. Devaluation compensation, paid to the owners of apples and pears exported to sterling countries in 1968 and 1969, provided up to 10% of the average annual gross receipts of Tasmanian growers in those two years and almost 5% of receipts averaged over the four years of the survey.

Compared with Victoria and Western Australia, Tasmanian growers received lower average f.o.b. prices for export apples and pears during the survey period despite higher devaluation compensation payments per bushel. This was largely as a result of the greater emphasis on lower priced varieties and the higher proportion of export sales at risk.

The most important cost item was the cost of presenting apples and pears for sale, particularly for export. This cost, which for export included grading and packing labour, packing materials, pre-cooling, and local freight and handling charges, represented about half of the f.o.b. value of fruit exported from Western Australia and Victoria and more than half in Tasmania where f.o.b. values per bushel were lower.

Over the four years 1965-66 to 1968-69, net farm incomes declined in all survey regions except Western Australia. The decline was less serious in Victoria South, while in Victoria North incomes were maintained except in 1968-69 when net farm income was substantially lower mainly because of the poor pear crop. The fall in incomes was greatest in the two Tasmanian regions despite the payments to growers of devaluation compensation which averaged approximately $2,000 each in 1967-68 and in 1968-69. In the absence of these amounts, net farm income would have averaged approximately $400 per annum in Tasmania South and would have been negative in Tasmania North in those two years.

Indebtedness of growers was greatest in Tasmania where, on average, they had approximately 70% equity in their invested capital at 30 June 1969. Indebtedness apparently increased during the preceding four years, particularly in Tasmania South.

Growers, particularly those producing for export, have been faced with rising costs together with increasing competition in the United Kingdom - European market. Furthermore, record Australian production of 22m bushels of apples in both 1969 and 1970 was followed by an estimated 25m bushels in 1971. Marketing problems and large carryover of stocks resulted in lower prices being paid for juicing grade apples in 1970; added to which, the intake of canning grade apples was reduced by approximately one third compared with the previous year.

The Apple and Pear Export Stabilisation Plan which commenced operation in 1971 is expected to provide considerable assistance to growers who sell their fruit at risk. The results for the first year of its operation showed a substantial increase in the proportion of total exports made at risk and average prices below the support levels for most varieties of apples. This meant a substantial 'pay out' to growers. The generally satisfactory marketing season for pears required growers to 'pay in' with respect to most varieties.

The entry of the United Kingdom into the European Economic Community is not expected to result in any significant change in the European market for Australian apples and pears in the short term.

Of greater immediate concern is the increased cost of shipping freight which, together with packing and other presentation costs, accounts for approximately 80% of the total cost of producing and landing apples and pears in the importing countries. With the termination in 1971 of the three year agreement on shipping freights, which limited annual increases to 5%, the 1972 rate for shipments to the United Kingdom and Europe in conventional ships has been raised by 24%. This rise will be limited to 12% if the industry can meet certain shipping requirements. In per bushel terms these increases are equivalent to approximately 54c and 27c respectively.

A cost increase of this magnitude, together with increases in the cost of labour, packing and other materials, places in considerable doubt the continued viability of apple and pear growers in many areas. The situation appears most crucial in Tasmania where growers' incomes have already declined and where they are almost wholly dependent on the export market as access to fresh fruit markets on the mainland is restricted by quarantine regulations, high freight cost and expanding production in most States.

Both the Apple and Pear Board and growers' organisations have accepted that the Apple and Pear Stabilisation Plan does not provide the answer to the long term problems of the industry and have consequently been giving increasing attention to the need for restructuring the industry. The industry, like the Bureau of Agricultural Economics, is examining various aspects of restructuring, including possible assistance which might be available to growers under the *State Grants (Rural Reconstruction) Act* recently implemented by the Commonwealth Government through State Government organisations set up for this purpose.

Part I

INTRODUCTION

Apple and Pear Growing in Australia

Australia is a major exporter of apples and pears, providing approximately 7% of total world exports in 1968. Only Italy (with 22%), France (15%) and Argentina (13%) exported greater quantities of apples and pears in that year. In terms of production, Australia ranked fifteenth and contributed only 2% of world production of apples and pears in 1968.(1)

In 1969-70 the gross value of production of apples and pears in Australia was $80m, compared with $222m for all fruit, $1,501m for all crops and $3,782m for all rural production. In terms of f.o.b. value of exports, apples and fresh pears contributed $27m to the total of $2,108m for all rural products.

Major Producing Regions

Apples and pears are grown in all Australian States, mainly in the temperate areas. The major apple producing States are Tasmania and Victoria, which produce 40% and 20% of the total crop respectively. Victoria is the main pear growing State, producing almost all Australia's canning pears and approximately 50% of pears grown for the fresh fruit market.(2)

In the ten year period 1959-60 to 1968-69, total annual Australian apple production rose from 14m bushels to a record 22m bushels. All States contributed to the increase (Appendix Table A.I). Pear production (excluding canning pears) over the same period fluctuated between 2.9m and 4m bushels but without showing any particular trend. The 1965-66 crop of 4m bushels was a record (Appendix Table A.II).

Total acreage planted to apples increased steadily from about 85,000 acres in 1959-60 to 95,000 acres in 1966-67 and then fell by about 2,000 acres in the following two years (Appendix Table A.III). The bearing area expanded from 66,000 acres in 1959-60 to 71,000 in 1964-65 and remained at approximately this level in subsequent years. The greatest increase in bearing area occurred in Queensland (3,400 acres) and the greatest decrease in Tasmania (1,600 acres) (See Appendix Table A.IV).

Total pear acreage, excluding canning pears, was estimated at 13,000 acres in 1968-69, having declined from a peak of almost 14,400 acres in 1963-64 (Appendix Table A.V). Bearing acreage declined over the same period from 11,800 to just under 10,700 acres (Appendix Table A.VI).

---

(1) Commonwealth Secretariat, *Fruit: A Review*, London, 1970.

(2) Canning pear production consists primarily of the Williams Bon Chretien variety.

Biennial bearing patterns (alternate light and heavy crops in succeeding years) have been characteristic of both apples and pears, particularly of apples in Tasmania and Western Australia, and of pears in Tasmania and Victoria. As years of high yield in Tasmania have normally coincided with low yields in the mainland States, Australian production has not fluctuated as much from year to year as the changes in yields in individual States would suggest. Tasmania, the State with the highest yields for apples, has recently recorded an average yield of approximately 400 bushels per bearing acre in 'off' years and 500 to 550 bushels per bearing acre in 'on' years. Tasmanian pear yields are also the highest although not greatly higher than those in Victoria. In Western Australia, annual apple yields have increased while at the same time the difference between 'on' and 'off' years has been substantially reduced (Appendix Tables A.VII and A.VIII). This reduction, which has occurred for both apples and pears in most States, has been the result of improved management practices including the amount and timing of irrigation and the use of fertilisers and chemical thinners.

Market Outlets

The major outlets for Australian apples are the export market, the domestic fresh fruit market, processing into pie-pack, dried apples, jam etc., and processing into juice, vinegar and cider. Pear production, excluding canning varieties, is disposed of on the export market and the domestic market as fresh fruit.

In recent years Australian exports of apples have ranged between 7m and 8m bushels or about 40% of total annual production. The major exporting States have been Tasmania with 72% of total apple exports and Western Australia with 16% (Appendix Table A.IX). Pear exports, which have normally amounted to about 1.5m bushels or almost half the total fresh pear production, have been provided by Victoria and Tasmania with 68% and 27% of total exports respectively (Appendix Table A.X). These three States rely considerably on overseas markets for the disposal of their crops; approximately 70% of Tasmanian apples, 60% of Western Australian apples and 60% of Victorian fresh pears are exported.

The proportion of Australian apple exports taken by the United Kingdom has declined from 62% in 1959-60 to 50% in recent years, with Western Germany in particular being a much more important outlet than it was a decade ago. The importance of the United Kingdom as the major overseas outlet for Australian pears also declined, that country taking less than 40% of total exports in 1969 mainly because of penetration of the United States market by Australian exporters in that year.

Greater competition in the United Kingdom and Europe due to increased supplies from European producers (facilitated by the use of controlled atmosphere storage) and from other southern hemisphere countries such as South Africa and Argentina, resulted in a marked decline in the quantity of Australian apples and pears sold forward and a corresponding increase in the importance of sales under guaranteed advance (i.e. a payment sufficient to pay at least for ocean freight). For example the proportion of Australian apples sold forward to the United Kingdom fell from 49% in 1966 to 18%, 10% and 26% in the following three years.(3)

---

(3) Australian Apple and Pear Board, *Annual Report, 1969-70.*

The increased competition overseas, together with rises in shipping freight rates and the 12½% devaluation of sterling late in 1967 had serious effects on prices received by apple and pear growers dependent on exporting apples and pears. Despite devaluation compensation paid to the owners of export apples and pears sold to sterling countries, the marketing situation and the resultant effects on returns to growers were considered by the industry to warrant a request to the Commonwealth Government for a scheme which would stabilise prices received for export apples and pears.(4)

Principal Industry Organisations

Each State has grower and exporter organisations which are represented by federal bodies covering all aspects of the apple and pear industry. These are the Australian Apple and Pear Board, the Australian Apple and Pear Growers' Association and the Australian Apple and Pear Shippers' Association.

The *Australian Apple and Pear Board* as it is presently constituted was formed in 1949 by an amendment to the *Apple and Pear Organization Act* in 1947. It currently consists of thirteen members including eight growers (Tasmania three and the other States one each), three exporters (Tasmania one, Western Australia one, other States one), one employees' representative and a chairman appointed by the Commonwealth Government.

The Board regulates the export trade in apples and pears in a number of ways including the issue of export licences to approved exporters, setting minimum prices and prescribed terms of payment, fixing the maximum quantities of apples and pears that may be exported in any one year to particular countries, allocating these quantities among exporting States and specifying the shipping companies through which exports will be shipped. The Board also has authority to engage in market promotion and research relevant to the industry and make recommendations to the Minister for Primary Industry as to quality and grading standards for apples and pears. More recently it has been given the responsibility of administering the Apple and Pear Export Stabilisation Plan.

A levy imposed on exports of apples and pears from Australia by the *Apple and Pear Export Charges Act* 1938-1968 provides the Board's income.

The *Australian Apple and Pear Growers' Association* is a voluntary unincorporated body comprised of the New South Wales Apple and Pear Growers' Association, the Orchardists' and Fruit Cool Stores Association of Victoria, the Committee of Direction of Fruit Marketing (Decidious Fruit Sectional Group Committee) Queensland, the South Australian Fruitgrowers' and Market Gardeners' Association, the Western Australian Fruit Growers' Association Inc. and the State Fruit Board (Tasmania).

---

(4) A stabilisation scheme entitled 'Export Apples and Pears Stabilization Plan' was agreed to by the Commonwealth Government and the industry, and was implemented for the 1971 export season. A brief outline of the scheme, including the varietal support prices set for 1971, is given in Appendix B.

The Association submits to the Australian Apple and Pear Board and to the Commonwealth Government resolutions on grade standards, varieties, permitted sizes for export and other matters relevant to the industry.

The *Australian Apple and Pear Shippers' Association* is a voluntary unincorporated body comprised of the representatives of the New South Wales Fruit Shippers' Association, the Victorian Fruit Export Handling Committee, the Queensland Apple and Pear Fruit Shippers' Association, the South Australian Apple and Pear Shippers' Association, the Western Australian Fruit Shippers' Committee and the Tasmanian Fruit Shipping Agents' Committee.

In consultation with the Australian Apple and Pear Board and the shipping conferences, the Association co-ordinates the provision and programming of the tonnage required for apple and pear exports. Also, it consults with the Board on matters relating to marketing policy and the negotiation of shipping agreements as well as representing the views of shippers in general.

Origin and Scope of the Survey

In August 1967, following representations by industry organisations, the Australian Agricultural Council recommended that the Bureau of Agricultural Economics undertake an economic survey of the apple and pear industry. The purpose of the survey was to provide up-to-date information regarding the economic situation of the industry and, subsequently, it was designed to cover the 1965-66, 1966-67, 1967-68 and 1968-69 financial years.

Difficulties encountered in recent years on the export market led to a request by the industry for a price stabilisation scheme for export apples and pears and to this end discussions were held between the Commonwealth and industry representatives. Because of the need for economic data to assist in the examination of stabilisation proposals, it was decided to restrict the economic survey to the major exporting States, viz. Tasmania, Victoria and Western Australia.

The survey, which was carried out in the second half of 1969, was the first large scale economic survey of this industry undertaken by the Bureau of Agricultural Economics. An earlier survey of the Tasmanian Apple and Pear Industry had been carried out in 1948 in conjunction with the Tasmanian Department of Agriculture. That survey had concentrated on the physical condition of orchards, their organisation and production and did not examine returns, costs and other financial data.(5)

Preliminary results of the latest survey, in the form of an interim report which covered the first three years of the survey period, 1965-66 to 1967-68, were released in June 1970. This report, which was given only limited distribution, was prepared to make information available for examination in conjunction with stabilisation proposals.

---

(5) Bureau of Agricultural Economics, *The Tasmanian Apple and Pear Industry*, Bulletin No. 6, Canberra, February 1950.

Eligibility Criteria

In all regions the survey was designed to include apple and pear growers who operated orchards throughout the four year period.

The eligibility criteria for inclusion of a farm in the survey were:

(i) a minimum of ten acres of apple and pear trees (excluding Williams pears in Victoria and Tasmania) at 30 June 1969;(6)

(ii) a minimum of eight acres of apple and pear trees (excluding Williams pears in Victoria and Tasmania) of bearing age at the time of the 1969 harvest;

(iii) continuity of ownership of the property during the 1965-66, 1966-67, 1967-68 and 1968-69 financial years.

Criterion (i) determined the eligibility of farms for inclusion in the population list from which the sample was selected. Some of these sample farms were subsequently excluded for various reasons, including failure to satisfy either of criteria (ii) and (iii) as discussed in Survey Rejections,(7) and were replaced by reserves.

Sample Procedures and Survey Regions

The sample design adopted for the survey aimed at providing results which, in addition to permitting the assessment of aggregate income and costs, would enable comparisons between regions.

The design was one stratified according to acreage of apple and pear trees and by region; sample selection was carried out on a random basis within each stratum. Lists of growers showing acreages of apples and pears were made available by either State Departments of Agriculture or industry organisations. Lists of growers with 10 acres or more(8) were prepared and, to ensure adequate representation of apple and pear orchards of various sizes, orchards in each of the five regions were grouped into four strata according to the acreage planted to apples and pears. Stratum limits were such that each stratum contained one quarter of the total acreage of the orchards of 10 acres or more in the region.

---

(6) The Williams pear or Williams Bon Chretien (commonly known as Barlett) is grown mainly in the Goulburn Valley in Victoria North and used almost exclusively for canning, exports being small and sales on the local fresh market unimportant except when the crop is very heavy and in surplus to cannery requirements. Acreages in Tasmania and Western Australia are relatively small. As canning facilities were not available for Williams pears in Western Australia, these were sold as fresh fruit and included with other pears in the survey results. In Victoria and Tasmania, as canning outlets were available, Williams pears were classified as 'other tree fruits'.

(7) See page 11.

(8) An upper limit of 179.9 acres of apples and pears was imposed to exclude very large farms which would not be typical of the industry. This affected a total of three farms in all three States.

The five regions and the main apple and pear growing districts included in each region were as follows:

Tasmania South	- Huon Valley - D'Entrecasteaux Channel - Tasman Peninsula
Tasmania North	- Tamar Valley - Mersey Valley
Victoria South	- Eastern Metropolitan - Mornington Peninsula - Gippsland - Bacchus Marsh
Victoria North	- Goulburn Valley (Shepparton and Cobram) - Beechworth-Stanley - Harcourt
Western Australia	- Hills - Donnybrook - Bridgetown - Manjimup - Great Southern (Albany, Mt Barker and Denmark)

The original design provided for the inclusion of a total of 178 farms in the sample. To ensure this number, additional reserve growers were interviewed and the number included in the survey for all regions was 196. The total number of apple and pear farms, the number of eligible farms (those with 10 acres or more of apples and pears), the sample required and the number of sample farms included in the analysis by survey region and State are shown in Table No. 1.

Table No. 1

DISTRIBUTION OF APPLE AND PEAR FARMS: BY POPULATION AND SAMPLE NUMBERS: BY SURVEY REGIONS AND STATES

30 June 1969

Item	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	no.	no.	no.	no.	no.	no.	no.	no.
Total apple and pear farms	739	173	912	695	498	1,193	1,149	3,254
Eligible survey population	508	129	637	508	299	807	513	1,957
Survey sample	45	23	68	47	36	83	45	196

In all, 1,297 farms, or 40% of all farms in the survey region, had less than 10 acres of apple and pear trees at 30 June 1969 and were excluded from the survey population. In Western Australia the proportion excluded was 55%, representing an estimated 22% of total apple and pear acreage. In other survey regions farms with less than 10 acres of apples and pears contributed approximately 10% of the total planted area.

Survey Rejections

As discussed above, certain criteria were applied before a sample farm was included in the survey. Farms not fulfilling these criteria were rejected and these, together with other sample farms which could not be included for various reasons, e.g. operator unwilling to co-operate or illness of operator etc., are shown in Table No. 2. A total of 327 operators were contacted and 205 interviews completed.

Table No. 2

REJECTION OF FARMS AS SAMPLE CASES: BY REGIONS AND STATES

Reason for Rejection	Region					Three States
	Tasmania		Victoria		W.A.	
	South	North	South	North		
	no.	no.	no.	no.	no.	no.
Under 10 acres planted to apples and pears at 30 June 1969	-	-	2	6	-	8
Under 8 acres of apples and pears bearing at 1969 harvest	-	1	2	2	16	21
Records not available for all survey years	-	2	3	-	3	8
Changes in ownership since 1 July 1965	1	-	8	2	8	19
Accounts too complex	6	1	1	6	-	14
Unable or unwilling to co-operate	8	5	6	3	5	27
Unable to contact operator	2	2	1	6	4	15
Illness of operator	-	-	1	1	1	3
Incomplete or inadequate data at cut-off date	3	-	-	2	4	9
Other	1	-	5	-	1	7
Total rejections	21	11	29	28	42	131

The greatest number of rejections occurred in Western Australia, owing primarily to the number failing to meet the requirement of a minimum of eight acres bearing for the 1969 harvest.

From the table it may be noted that 21% of rejections (some 27 growers) were accounted for by growers being unable or unwilling to co-operate for various reasons. Changes in ownership, complex accounts (mainly on large enterprises with other activities as well as apple and pear growing) and absence of the operator from the district were also important reasons for rejection of farms as sample farms.

Data Processing

The following steps were carried out when processing the data:

- detailed information for farms in each stratum was aggregated and expanded by the appropriate raising factor, i.e. the reciprocal of the sampling fraction;
- the raised data for all strata in each region were then accumulated, thus providing estimates of regional aggregates;
- regional averages were obtained by dividing these aggregates by the total number of apple and pear farms (with more than 10 acres of apples and pears) in each region;
- for each State, aggregated regional results were combined and tabulated results have been presented on a per farm basis by dividing by the total number of apple and pear farms (with more than 10 acres of apples and pears) in each State;
- aggregated State figures were amalgamated and averaged for the three States.

Outline of Report

The survey results, presented in Parts II to X of this report, examine the physical and financial aspects of apple and pear farms. The data relating to land use, production, labour force, gross farm returns, farm costs, net farm income, etc. are presented as four year averages for the period 1965-66 to 1968-69. Annual results for these variables are included where significant changes have taken place during the survey period. Survey data on type of land ownership, age of apple and pear trees, level of farm indebtedness, etc. are presented as at 30 June 1969.

More detailed results from the survey are tabulated in Appendix D. Methods of calculation and the treatment of various items are discussed in Appendix C.

Part II

FARM CHARACTERISTICS

This section of the report examines the physical characteristics of apple and pear farms as calculated from survey data. The discussion of the various aspects, including land use pattern, details of apple and pear plantings, area irrigated, etc. is covered by Appendix Tables D.I to D.XXIII.(9)

Land Use

Apple and pear growing was the major form of intensive land use on farms in Tasmania South, Tasmania North and Victoria South. Farms in Victoria and Western Australia were more diversified (see Table No. 3). In Victoria North apricots, peaches and pears for canning (classified as 'other tree fruit') in the Goulburn Valley, and potato growing in the Beechworth-Stanley district were important enterprises. In Western Australia, livestock and to a lesser extent potatoes and peas were important on most apple farms except in the Hills district where peaches, plums and citrus were also grown.

Expressed as a percentage of total farm area, the average acreage planted to apples and pears for the three States was only 9%, ranging from 3% in Western Australia to 35% in Victoria South.

Plantings of Apple and Pear Trees

Apple and Pear Acreages

Apple growing was of much greater importance than pear growing in all regions except Victoria North and, to a lesser extent, Tasmania North.

Within some regions, however, the relative importance of apples and pears differed. In Victoria North more than half the total area planted to apples and pears in the Shepparton and Cobram districts consisted of pears, while in the Beechworth-Stanley district pear plantings represented less than 1% of the apple and pear area. In Tasmania South, although pears were of minor importance in the Huon Valley and D'Entrecasteaux Channel districts, they represented approximately one third of total plantings on the Tasman Peninsular.

The most popular apple variety in terms of planted area for all three States was the Granny Smith, followed by Jonathan; together they constituted more than half the total as shown in Table No. 4. These two varieties made up the greater part of plantings in all regions except in Tasmania where Sturmer and Democrat were of similar importance.

Packham's Triumph constituted 60% of pear acreage in all three States, but its importance was less marked in Tasmania were Winter Cole, Comice and Beurre Bosc were also major varieties (see Table No. 5).

---

(9) Appendix D, pp. 87-130.

Table No. 3

LAND USE: BY SURVEY REGIONS AND STATES

Four Year Farm Averages, 1965-66 to 1968-69

Land Use	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	acres	acres	acres	acres	acres	acres	acres	acres
Apples	20.8	22.0	21.1	22.8	12.5	19.0	19.0	19.7
Pears	1.5	4.6	2.1	2.3	13.2	6.3	1.1	3.6
Total apples and pears	22.3	26.6	23.2	25.1	25.7	25.3	20.1	23.3
Other tree fruits	0.1	0.8	0.3	2.0	28.9	12.0	2.2	5.6
Other fruit and vegetables	0.6	0.0	0.4	0.0	0.9	0.3	7.2	2.1
Crops	0.3	0.6	0.4	0.0	2.7	1.0	12.2	3.7
Pasture and grazing	53.0	82.3	59.0	27.3	51.7	36.4	402.2	139.6
Buildings, channels and drains	1.7	4.0	2.2	3.9	4.4	4.1	3.7	3.4
Waste, fallow etc.	83.2	79.4	82.3	13.5	35.7	21.7	139.2	72.3
Total farm area	161.2	192.9	167.6	71.4	149.1	100.2	586.7	249.7
Areas inter-cropped	0.0	0.8	0.2	0.4	0.9	0.6	0.1	0.3

Table No. 4

COMPOSITION OF APPLE ACREAGE: BY MAJOR VARIETIES:

BY SURVEY REGIONS AND STATES

Four Year Averages, 1965-66 to 1968-69

Variety	Region						W.A.	Three States
	Tasmania			Victoria				
	South	North	State	South	North	State		
	%	%	%	%	%	%	%	%
Cleopatra	9.3	2.5	7.8	-	-	-	6.2	4.3
Crofton	5.4	7.4	5.8	1.0	0.2	0.8	-	2.3
Delicious	4.7	6.3	5.1	5.4	10.2	6.5	2.9	5.1
G. Delicious	5.7	4.7	5.5	5.1	5.9	5.3	2.6	4.7
R. Delicious	2.2	3.8	2.6	1.9	0.8	1.7	3.1	2.3
Democrat	16.7	7.4	14.7	2.6	3.7	2.9	1.0	6.5
Granny Smith	15.5	15.5	15.5	19.3	41.3	24.6	65.4	31.8
Jonathan	14.4	22.5	16.1	46.5	19.5	39.9	8.7	23.7
Sturmer	14.8	17.2	15.3	-	-	-	-	5.3
Other	11.3	12.7	11.6	18.2	18.3	18.3	10.1	14.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table No. 5

COMPOSITION OF PEAR ACREAGE: BY MAJOR VARIETIES:

BY SURVEY REGIONS AND STATES

Four Year Averages, 1965-66 to 1968-69

Variety	Region						W.A.	Three States
	Tasmania			Victoria				
	South	North	State	South	North	State		
	%	%	%	%	%	%	%	%
Beurre Bosc	7.7	14.6	10.7	12.0	3.8	5.7	-	6.2
Comice	10.0	14.2	11.8	0.1	-	-	10.2	3.1
Glou Morceau	1.8	11.3	5.9	-	-	-	-	1.1
Josephine	5.2	2.8	4.2	0.8	12.4	9.8	4.9	8.3
Packham's Triumph	46.6	30.0	39.4	54.2	70.4	66.6	55.2	60.5
Winter Cole	27.9	21.5	25.2	24.3	1.2	6.5	-	9.6
Winter Nelis	-	2.3	1.0	7.5	10.3	9.6	2.3	7.4
Other	0.8	3.3	1.8	1.1	1.9	1.8	27.4	3.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

During the survey period, 1 July 1965 to 30 June 1969, the average area planted to apples and pears increased from 21.7 acres to 24.1 acres. Most of this expansion of 2.4 acres related to apples and partly resulted from purchases, particularly in Tasmania South, where orchard land was bought from neighbours affected by the February 1967 bushfires. However, 1.5 acres of the increase in apple area was due to a net expansion, i.e. the excess of plantings over removals. More than 50% of new and replacement plantings consisted of Granny Smith, with Golden Delicious (12%) and Red Delicious (8%) being next in importance (Appendix Table D.VIII). In all regions the emphasis on new plantings of Granny Smith indicates that a greater proportion of production will be provided by this variety in the future.

Planting Rates

The planting rate varied noticeably between regions. The highest rates for both apples and pears were in Tasmania South, 175 and 170 trees per acre respectively. The rates were lowest in Victoria South and Western Australia where the respective tree numbers were 106 per acre for apples and 100 for pears (Appendix Table D.XVIII). The number of trees per acre was lower for pears than for apples in all survey regions except Victoria South and Victoria North which included the major irrigated pear growing districts of Shepparton and Cobram.

Within survey regions planting rates did not differ significantly between districts. The exception was in Victoria North where per acre plantings in the irrigation districts of Shepparton, Cobram and Harcourt were predominantly at rates of 109 to 134 trees and those in the non-irrigated district of Beechworth-Stanley were mainly in the range 70 to 80 trees (the distribution of trees by planting rate is shown in Appendix Table D.X).

In all regions plantings of 200 or more trees per acre, although a relatively small proportion of total acreage, were usually recent plantings made at double the normal rate. For example in Victoria North, where 109 (a planting pattern of 20' x 20') was a common planting rate, the higher rate of planting was achieved by halving the distance between trees whilst retaining the distance between rows (i.e. a planting pattern of 10' x 20'). Such plantings, referred to as hedgerow systems, have been associated with the use of Northern Spy (semi-dwarf) rootstocks which, if planted correctly and given favourable growing conditions, can produce reasonable crops within four to five years of planting compared to the normal six to seven years for seedlings growing into large trees.(10)

Age Structure of Plantings

Western Australia and Victoria North had 55% and 44% respectively of apple trees under 15 years old at 30 June 1969. The largest proportion of old trees was evident in Tasmania where 50% of trees in the northern region and 42% in the southern region were aged 45 years and over (see Table No. 6).

---

(10) See E.C. Whittaker and J.F. Johnson, 'Hedgerow Planting of Apples', *New South Wales Agricultural Gazette*, Vol. 78, June 1967; W.F. Walker and B.D. Richardson, 'High Density Orchards for Tasmania', *Tasmanian Journal of Agriculture*, Vol. 42, No. 1, February 1971.

Table No. 6

DISTRIBUTION OF APPLE AND PEAR ACREAGES: BY AGE OF TREE: BY SURVEY REGIONS AND STATES

As at 30 June 1969

Type and Age of Tree (years)	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	%	%	%	%	%	%	%	%
Apple -								
1 - 6	12	23	14	17	18	17	20	17
7 - 14	8	8	8	13	26	17	35	19
15 - 34	20	8	18	31	28	30	29	25
35 - 44	18	11	16	17	16	16	7	14
45 and over	42	50	44	22	12	20	9	25
Total	100	100	100	100	100	100	100	100
Pear -								
1 - 6	16	7	12	7	8	8	34	11
7 - 14	14	3	10	15	30	27	17	22
15 - 34	17	1	9	34	41	40	16	31
35 - 49	27	27	27	23	18	19	9	21
50 and over	26	62	42	21	3	6	24	15
Total	100	100	100	100	100	100	100	100

As trees become older, fruit quality tends to become more variable and yields eventually fall. Consequently, it is the industry in Tasmania particularly which appears most vulnerable to the effects of the higher quality standards required as the result of greater competition on export markets and rising presentation and freight costs. Although it is likely that these trees will be removed in the next few years, their replacement by new plantings appears doubtful in view of the long term problems of the industry. Some growers may replant using the hedgerow system which has been shown to give lower production costs than the traditional type in many overseas countries.

In the main pear growing region, Victoria North, 38% of pear plantings were under 15 years old and only 3% were over 50 years.

The time needed for apples and pears to reach commercial bearing varies according to the region, the variety, the type of rootstock, pruning method, rate of tree growth, etc. Trees can commence bearing commercially

as early as five or six years after planting while in some instances this may not occur until after 10 years.(11) It is assumed in this survey that apple and pear trees began bearing commercially seven years after planting or three years after re-working.(12)

Tasmania North (23%) and Western Australia (20%) had the highest proportion of total apple acreage of non-bearing age. For pears the proportions were highest in Western Australia (38%) and Tasmania South (16%). In Western Australia the proportion of apple plantings of non-bearing age was highest in the Manjimup district; in Victoria North this proportion was highest in the Shepparton and Cobram districts and in Victoria South, the Mornington Peninsula.

The proportion of pear acreages non-bearing in the survey period was low in both Victorian survey regions and in Tasmania North. In the two regions where average farm area of pears was lowest, Tasmania South and Western Australia, the proportions of pear trees of non-bearing age were the highest.

On the assumption that apple and pear trees have a maximum commercial life of 45 years and 50 years respectively and that trees are distributed evenly according to age, non-bearing acreages equivalent to 13½% and 12% of total acreages would be required to maintain the level of bearing acreage. At these rates the proportion of non-bearing apple acreage in 1968-69 was sufficient to maintain bearing area in all regions except Tasmania South. In Western Australia and Tasmania North, the figures suggest an expansion of bearing acreage as long as the excess is not offset

---

(11) Improved pruning techniques and other management practices in recent years have reduced the period between planting and the first commercial crop, with apple trees generally being more productive at from 15 to 34 years of age. This factor makes comparisons of yields by variety in a particular region difficult if the proportion of bearing acreage provided by the 15-34 age group differs substantially between varieties. For example in Tasmania South at 30 June 1969, an estimated 32% of the total area of Democrats consisted of plantings in the 15-34 years age group, the proportions for certain other varieties being 28% for Granny Smith, 26% for Jonathan, 16% for Golden Delicious and 10% for Red Delicious. The new type of intensive plantings using semi-dwarf rootstocks (see page 16) is expected to reduce the initial non-bearing period and to be most productive after 10 years.

(12) The process of budding or grafting an established tree to change the variety is known as re-working. The method used (top working, side or frame working and crown or bottom working) depends on the kind of tree, its age and condition and the time available to carry out the work. See D.T. Kilpatrick and J.N. Steel, 'Re-working Apple and Pear Trees', *Journal of Agriculture, South Australia,* Vol. 73, No. 1, August 1969.

by an increase in removal rates. For pears the proportion needed to maintain bearing acreage is adequate only in Western Australia and Tasmania South.(13) The expansion of bearing apple acreage suggested by survey data should consist mainly of the Granny Smith variety for which 24% of total acreage in all three States was non-bearing at 30 June 1969, while other varieties such as Golden Delicious (36% non-bearing), Red Delicious (37%) and Crofton (35%) should become more important (Appendix Table D.XVI). High non-bearing proportions were recorded in all regions for these four varieties.

In Victoria only 8% of the important Packham's variety were of non-bearing age compared to 23% and 21% in Tasmania South and Tasmania North respectively and 43% in Western Australia (Appendix Table D.XVII). Beurre Bosc, for which 26% of plantings were non-bearing, was the only pear variety with a high non-bearing proportion in all three States.

Irrigated Land

In the three States covered by the survey, apples and pears were predominantly grown in areas with annual rainfall exceeding 25 inches which is sufficient for production without dependence on irrigation. In some areas in Victoria where the rainfall averages 20 inches per year, apple and pear growers relied on flood irrigation for watering their orchards. Growers at Bacchus Marsh obtained water from Pyke's Creek Reservoir, at Harcourt from the Campaspe-Coliban Irrigation System, at Shepparton from the Goulburn Valley Irrigation System and at Cobram from the Murray Valley Irrigation System.(14) Growers in Tasmania, Western Australia and Victoria South obtained water for irrigation mainly from dams or creeks and rivers.

Even in the regions where natural rainfall is adequate for apple and pear growing, supplementary irrigation can improve fruit size, hasten maturity, improve colour of the fruit and may also increase the size and number of flower buds during the flowering season. In conjunction with other management practices such as the use of chemicals and improved pruning methods, supplementary irrigation assists in reducing the effect of biennial cropping by improving yields in 'off' years.

Although the need for irrigation is determined primarily by rainfall consideration, its application also depends on the farmer's ability and willingness to invest in the necessary capital equipment; other factors are the availability of water, suitability of soil for on-farm storage etc.

The largest irrigated areas occurred in Victoria North (which includes Shepparton, Cobram and Harcourt), where flood irrigation predominated. Area irrigated totalled 76 acres per farm, of which 21 acres were planted to apples and pears (Appendix Table D.XIX). In other regions ground sprinklers were most commonly used to supplement the natural rainfall.

---

(13) However, the commercial life of pear trees is a matter of some speculation and if it was assumed to be, say, 75 years rather than 50 years, the non-bearing acreage in Victoria North, the major pear producing region would be adequate to maintain the productive area.

(14) In this report the term Goulburn Valley is used to describe an area which includes the two irrigation districts centred on Shepparton and Cobram.

The proportion of total area planted to apples which was irrigated was similar in Tasmania South (57%), Victoria South (58%) and Western Australia 56%) as shown in Table No. 7. It was lowest in Tasmania North (25%) where the Tamar Valley, which is the main district for apple and pear growing in this region, has an average annual rainfall of 40 inches.

Table No. 7

PROPORTION OF APPLE AND PEAR ACREAGE IRRIGATED:

BY SURVEY REGIONS AND STATES

Four Year Averages, 1965-66 to 1968-69

Type of Fruit	Region							
	Tasmania			Victoria			W.A.	Three States
	South	North	State	South	North	State		
	%	%	%	%	%	%	%	%
Apples	57	25	50	58	69	61	56	56
Pears	40	17	33	78	94	92	54	78
Apples and pears	56	23	48	60	82	68	56	60

In Victoria North 69% of apple acreage and 94% of pear acreage was irrigated. The difference between these two proportions can be explained by the fact that apple and pear plantings in the Beechworth-Stanley area were non-irrigated; these were mostly all apple trees. Consequently, the proportion of apples irrigated for the whole survey region was much lower than for pears which were concentrated in the irrigation districts.

Part III

FARM LABOUR FORCE

Despite the introduction of mechanical handling methods for harvesting, grading and the transport of apples and pears in recent years, the industry is still labour intensive. Labour costs are a major item on all types of apple and pear farms, particularly on those where fruit is graded and packed.

The following discussion of the main features of farm labour force on apple and pear farms as estimated from survey data is based on Appendix D, Tables D. XXIV - D. XXVIII.

Farm Labour Force

The number of adult male equivalents was calculated for each class of labour engaged on apple and pear enterprises, other farm enterprises, farm development and off-farm work by the operator. (The method of calculating adult male equivalents is given in Appendix C, page 70).

As shown in Table No. 8, average farm labour force was greatest in Victoria North where total orchard area (apples, pears and other tree fruit) was double that of any other survey region.

Table No. 8

FARM LABOUR FORCE IN ADULT MALE EQUIVALENTS:

BY SURVEY REGIONS AND STATES

Four Year Farm Averages, 1965-66 to 1968-69

Type of Activity	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	no.	no.	no.	no.	no.	no.	no.	no.
Apple and pear enterprise								
- orchard and harvesting	2.46	1.93	2.35	1.84	1.93	1.87	1.21	1.85
- grading and packing	0.80	0.61	0.77	0.66	0.24	0.50	0.12	0.49
Total	3.26	2.54	3.12	2.50	2.17	2.37	1.33	2.34
Other farm enterprises	0.21	0.36	0.24	0.19	2.56	1.07	1.02	0.79
Total enterprise work	3.47	2.90	3.36	2.69	4.73	3.44	2.35	3.13
Development work	0.05	0.02	0.04	0.02	0.01	0.02	0.04	0.03
Off-farm work	0.00	0.10	0.02	0.01	0.01	0.01	0.03	0.02

In the three specialist regions, Tasmania South, Tasmania North and Victoria South, approximately 90% of the total labour force was employed on apples and pears. In these same regions grading and packing labour contributed about 25% of the labour required for apples and pears, the balance being engaged on orchard management and picking.(15)

Type of Labour

The seasonal nature of apple and pear growing activities, such as harvesting and, in many instances, grading and packing on farm, requires high dependence on casual workers.

The operator, his family, partners and sharefarmers, on average, provided 55% of the total enterprise labour force on apple and pear farms in the three States. The operator provided 32% of orchard and harvesting labour for the three States, his family and partners 24%, hired permanent workers 22% and hired casual workers 22% (Appendix Table D. XXVII).

Table No. 9

TYPE OF LABOUR USED: PERCENTAGE OF TOTAL ENTERPRISE WORK:

BY SURVEY REGIONS AND STATES

Four Year Averages, 1965-66 to 1968-69

Type of Labour	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	%	%	%	%	%	%	%	%
Operator	26.7	28.8	27.7	34.7	19.8	27.2	38.9	29.6
Family	15.9	11.6	15.2	22.0	4.9	13.4	27.4	17.1
Partner(s)	4.6	4.4	4.5	9.7	7.6	8.7	12.8	7.9
Sharefarmer(s)	-	-	-	-	0.6	0.3	-	-
Manager	0.3	-	-	-	0.6	0.3	-	0.3
Hired - permanent	22.0	21.6	21.7	22.0	32.2	27.1	5.1	21.0
- casual	30.4	33.6	30.9	11.2	33.7	22.7	14.5	23.8
Contract	0.1	-	-	0.4	0.6	0.3	1.3	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Grading and packing apples and pears on the farm placed a greater emphasis on hired casual workers, who provided 32% of this type of labour. In Tasmania, where the larger part of apple and pear production was packed on the farm, hired casual labour provided half the labour required for this activity (Appendix Table D. XXVIII).

(15) Orchard management includes pruning, spraying, re-working, cultivating, irrigating, and fertilising etc.

Part IV

PRODUCTION

The various sources of production data for apples and pears and the conversion of recorded data into standard unit (bushels) is outlined in Appendix C.(16)

The following discussion of production of apples and pears, varietal composition of production, outlets and yields is based on Appendix D Tables D. XXIX - D. XLIII.(17)

Production and Yields

Average farm production was highest for apples in Tasmania South (10,396 bushels) and for pears in Victoria North (3,843 bushels). The differences in average production between survey regions was caused both by differences in orchard size and in yields.

Table No. 10

PRODUCTION OF APPLES AND PEARS: BY SURVEY REGIONS AND STATES

One and Four Year Farm Averages, 1965-66 to 1968-69

Type of Fruit and Year	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	bu	bu	bu	bu	bu	bu	bu	bu
Apples								
1965-66	11,197	6,010	10,147	5,494	2,926	4,543	3,084	5,984
1966-67	8,363	6,480	7,982	5,829	3,468	4,955	4,220	5,747
1967-68	11,288	6,124	10,242	5,054	3,167	4,355	3,538	6,057
1968-69	10,735	6,389	9,855	6,743	4,416	5,881	5,361	7,038
Four year average	10,396	6,251	9,557	5,780	3,494	4,933	4,051	6,207
Pears								
1965-66	480	1,696	727	534	4,414	1,972	165	1,093
1966-67	396	1,014	521	601	4,221	1,942	166	1,014
1967-68	521	1,368	693	478	3,970	1,772	203	1,009
1968-69	480	1,270	640	428	2,767	1,295	196	794
Four year average	469	1,337	645	510	3,843	1,745	182	978

(16) See pp. 71-72.
(17) See Appendix D, pp. 87-130.

Farms in Tasmania South and Western Australia, in particular, had marked differences in average production of apples in alternate years. High production years in Tasmania South were 1965-66 and 1967-68 and in Western Australia 1966-67 and 1968-69. Year to year variations in average apple production per farm in the two Victorian regions and Tasmania North were less marked but followed a similar pattern to that in Western Australia.

Bushfires, which occurred in Tasmania South in February 1967, affected some growers in that region, reducing production to some extent, although 1967 was an 'off' year and consequently a light crop was expected.(18)

The lower level of pear production in Victoria in 1969, particularly in Victoria North, was attributed by growers to a number of factors including brown rot, mite and thrip infestation, and frost etc. The already light crop was further reduced by losses due to strong winds which occurred in most pear growing areas in mid-January of that year.

Yields of apples per bearing acre were highest in Tasmania South and averaged 573 bushels per acre over the four years 1965-66 to 1968-69. In other regions they were considerably lower and ranged from 357 bushels per acre in Tasmania North to 280 bushels per acre in Western Australia.

In Victoria North, where the average was 332 bushels per acre, yields in the Beechworth-Stanley area were lower than in the irrigated districts in the region where trees were planted at a higher rate per acre.

As shown in Table No. 11, pear yields per bearing acre were lower than for apples in each survey region, but the difference was relatively small in Victoria North and in Western Australia.

Although the period of the survey was only four years and was too short to demonstrate adequately the tendency for these fruits, particularly apples, to bear biennially, the survey results for Tasmania South, Western Australia and both Victorian regions do reflect this feature.

Yields per bearing acre varied considerably within survey regions as those for apples ranged from less than 100 to more than 700 bushels on farms in both Victorian regions and in Western Australia. In Tasmania South no sample farms had an average yield per acre of less than 300 bushels and an estimated 18% of farms achieved yields of 800 bushels or more (Appendix Table D. XXXI).

Similarly, pear yields per bearing acre varied widely within regions as some growers in all regions except Victoria South had yields of less than 100 bushels, whilst in Tasmania South an estimated 14% of growers had yields of 800 bushels or more (Appendix Table D. XXXII).

---

(18) In all, three sample growers in Tasmania South were seriously affected by the 1967 bushfire, mainly by heat damage to trees and to fruit which was not marketable. Some trees had to be re-worked and consequently did not bear fruit in 1968. The official production statistics for 1967 indicate little or no effect on production in comparison to previous 'off' years, although production in 1968 was low compared to the two previous 'on' years, 1963-64 and 1965-66 (see Appendix A, page 62).

Table No. 11

YIELD PER BEARING ACRE OF APPLES AND PEARS:

BY SURVEY REGIONS AND STATES

One and Four Year Averages, 1965-66 to 1968-69

(Per Acre)

Type of Fruit and Year	Region						W.A.	Three States
	Tasmania			Victoria				
	South	North	State	South	North	State		
	bu	bu	bu	bu	bu	bu	bu.	bu
Apples								
1965-66	633	353	578	297	290	296	248	391
1966-67	476	384	458	311	325	315	302	363
1967-68	609	356	561	264	293	271	231	365
1968-69	570	336	522	346	421	364	334	413
Four year average	572	357	530	305	332	312	279	383
Pears								
1965-66	412	407	410	237	368	336	263	346
1966-67	336	238	289	266	352	331	262	320
1967-68	429	341	389	212	324	297	301	314
1968-69	364	287	329	211	228	224	264	248
Four year average	385	317	354	232	318	297	273	307

One important aspect which will not be examined here is the yield performance of particular varieties of apple and pear. Age structures of bearing plantings differed within and between regions for different varieties. Consequently, while average yields can be readily calculated from survey data, these would not enable useful comparisons to be made.

Although yields per bearing acre varied greatly between survey regions, yield per bearing tree did not vary to the same extent and the high yields per acre in Tasmania South were partly due to a higher tree planting rate per acre. Yield per bearing tree for apples ranged from 3.30 bushels in Tasmania South to 2.65 bushels in Western Australia.

Farms in Western Australia had the highest productivity per bearing pear tree with 2.88 bushels, compared to 2.12 bushels in Victoria South. Although farms in Tasmania South had the highest yield per bearing acre for pears, the average yield per bearing tree was 2.28 bushels.

Varietal Composition

The varietal composition of apple production was fairly similar to that of the acreages previously discussed, although varieties such as Golden Delicious and Red Delicious with younger age structures contributed less to production than to total acreage. For the three States the most important apple varieties were Granny Smith (26% of production), Jonathan (23%), and Democrat and Sturmer (each 10%). Granny Smith was the most important in Western Australia and Victoria North and Jonathan in Victoria South. Again the feature in Tasmania, particularly in the South, was the number of varieties which made significant contributions to total production (Appendix Table D.XXXV).

Although most of the main apple varieties were produced in all survey regions, some were of importance in only one or two regions while other less popular varieties were significant within a particular region.(19)

Packham's Triumph accounted for 55% of pear production in all three States and was the predominant variety in Victoria North (65%), Victoria South (59%) and Western Australia (53%). This variety was less popular in Tasmania where Winter Cole provided 41% of production in the South and 27% in the North (Appendix Table D. XXXVI).

Market Outlets

For the three States an estimated 49% of apple production was sold on the export market, 33% on the local fresh market, 8% to canneries and the remaining 10% for processing into juice. An estimated 64% of pear production was exported, the remaining 36% being sold on the local fresh market.

Export Market

Farms in Tasmania South sold, on average, 7,412 bushels of apples on the export market (or 71% of production as shown in Graph I. Similarly, Tasmania North and Western Australia, with 4,354 bushels (70%) and 2,519 bushels (62%) respectively, relied heavily on the export market for the disposal of their apple production (Appendix Table D. XXXVII).

Almost one third (32%) of total apple exports from the three States consisted of the Granny Smith variety while other major export varieties were Democrat and Sturmer, each 14%, Jonathan 13% and Cleopatra 10% (Appendix Table D. XXXVIII). Other less important varieties were Delicious (4%) and Crofton and Golden Delicious each 3%.(20)

Examination of the proportion of production of the major varieties exported shows that in Victoria South, where 4% of apple production was exported, approximately 10% of Granny Smiths and 6% of Democrats were exported compared with only 2% for Jonathan and the various Delicious

---

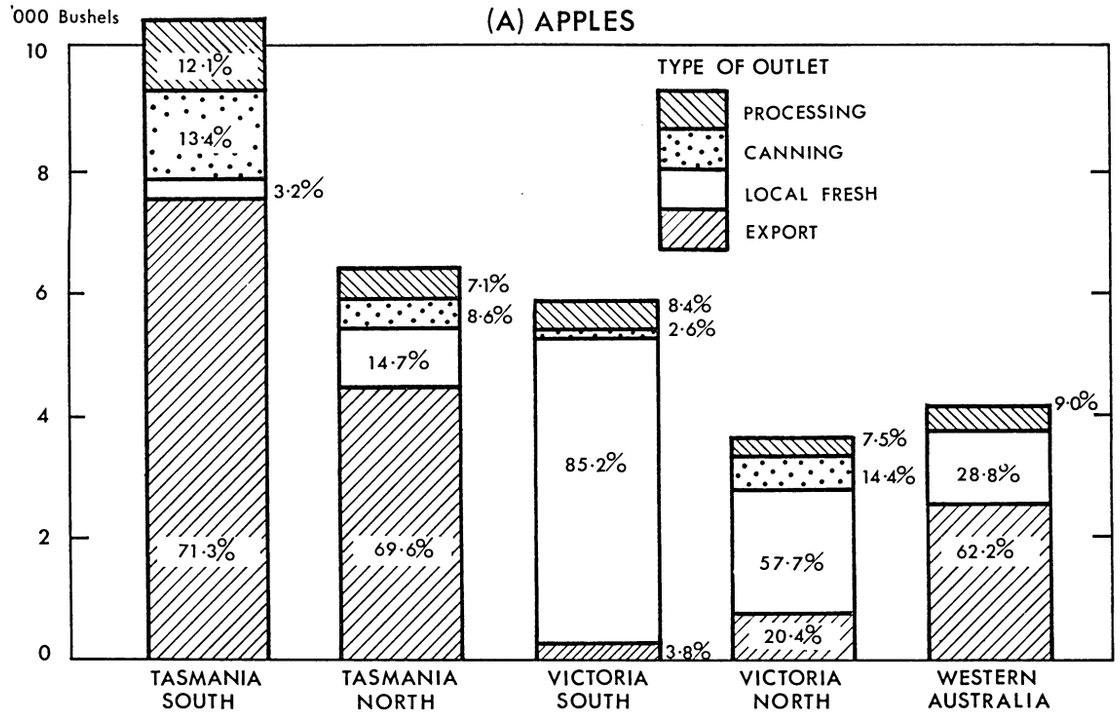
(19) Varieties such as Yates in Western Australian and Victoria, Rome Beauty and Statesman in Victoria and Cox's Orange Pippin, Scarlet Pearmain and Geeveston Fanny in Tasmania were important in these States but were of minor importance taking the three States together.

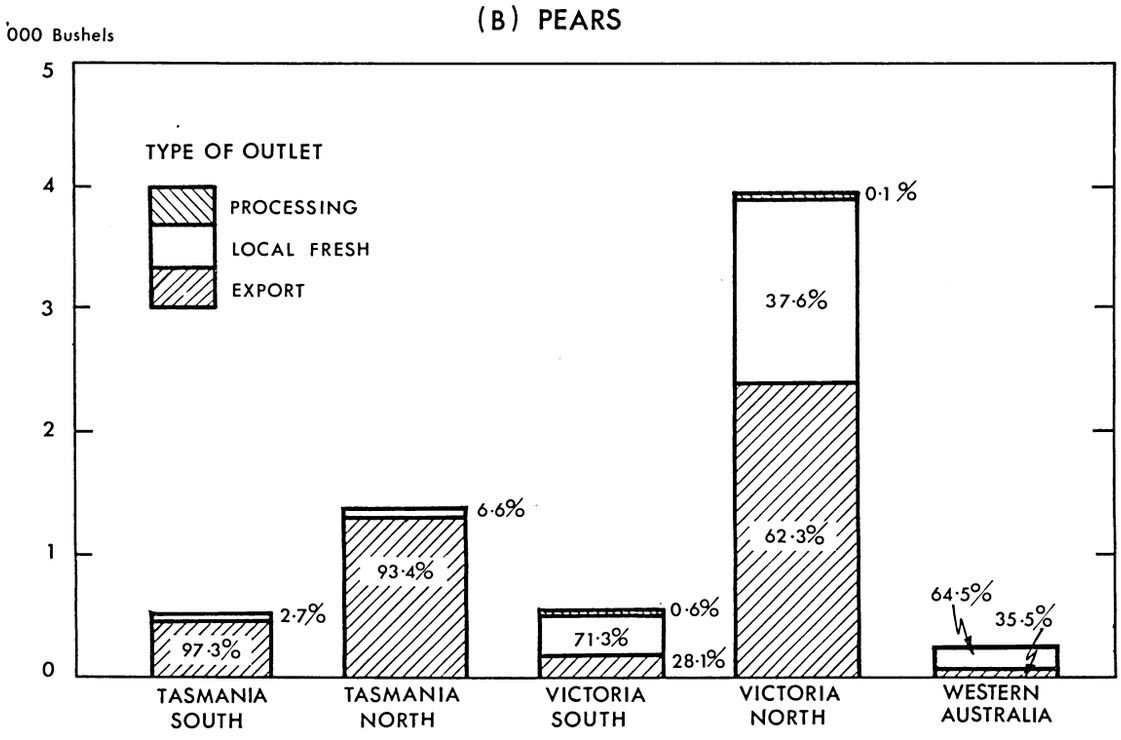
(20) These percentages, derived from survey data, compare favourably with details obtained by the Marketing Division, Department of Primary Industry, 1966 to 1969: viz. Granny Smith 30%, Democrat 16%, Sturmer 14%, Jonathan 13% and Cleopatra 8%, Delicious 4%, Crofton 3% and Golden Delicious 2% (see Part XI: Reliability of Survey Results, pp. 54-58).

GRAPH I

PRODUCTION AND SALES : BY TYPE OF OUTLET : BY SURVEY REGIONS

Four Year Farm Averages, 1965-66 to 1968-69





varieties (Appendix Table D. XXXIX). This situation was similar in Victoria North and Western Australia where the proportions of Jonathan and Delicious varieties exported were lower than for all apples produced.

Northern Victoria relied heavily on exports with an average of 3,843 bushels of pears (or 62% of production) going to this outlet. Tasmania South and Tasmania North, although smaller producers, exported 97% and 93% of pear production respectively.

Packham's Triumph, 54% of exports, Josephine 13%, Winter Cole 11% and Beurre Bosc 9% were the main varieties of pears exported from the three survey States (Appendix Table D. XL). In Victoria and Western Australia, Packham's Triumph was also the major export variety representing 66% and 90% of the total respectively. In Tasmania, Winter Cole contributed 36% of total pear exports for the State.

Local Fresh Market

The local fresh market (including interstate) was of considerable importance to Victorian apple growers, taking 85% of average farm production from Victoria South and 58% from the North.

In all three States, Jonathan comprised 39% of local fresh sales, followed by Granny Smith (20%) and Delicious (7%) (Appendix Table D. XLII). Jonathan was also the most important variety sold to this outlet in all survey regions except Western Australia where, although an estimated 87% of Jonathans were sold on the local fresh market, the quantity of Granny Smiths sold was greater. However, these sales were only 11% of Granny Smith production (Appendix Table D. XLIII).

Canneries

Canners purchased apples from farms in all regions except Western Australia, taking an average 1,397 bushels (or 13% of production) in Tasmania South and 504 bushels (or 14%) in Victoria North of which the greater part was provided by growers in the Goulburn Valley. The four main varieties sold for canning in the two Tasmanian regions were Sturmer, Jonathan, Democrat and Granny Smith,(21) while in Victoria North 68% of apples sold for canning were the Granny Smith variety.

Processors

Apples were sold for juicing in all survey regions, the proportions being 12% of production in Tasmania South, 9% in Western Australia, 8% in the two Victorian regions and 7% in Tasmania North.

---

(21) In Tasmania in 1969 there were two grades accepted for canning (see page 79), the varieties included in the higher grade being Sturmer, Jonathan, Granny Smith, Tasman's Price, Golden Delicious and Democrat.

Part V

GRADING, PACKING AND COOL STORAGE

A feature of the apple and pear industry is that the grower who sends his apples and pears in bulk bins to a commercial packing shed or to another grower is producing within the farm a raw product with a lower value at the point of despatch from the farm than the grower who grades and packs his fruit into cases, cartons, etc. for export, interstate or local sale. If no account is taken of this, the former will not incur the value-added component for grading and packing and consequently his costs and returns are lowered to this extent. As explained in Appendix C (Treatment of Items and Explanatory Notes) the survey results in terms of receipts and costs make farms packing on-farm and those packing off-farm broadly comparable, but it is useful to examine the importance of on-farm packing in various survey regions.

Expressed in terms of the proportion of packable fruit (in this context used to describe the sum of export and local fresh market apples and pears), the highest proportion was packed on-farm in Victoria South (94%), Tasmania South (84%) and Tasmania North (79%). Generally the proportion of export fruit packed on-farm was lower than the proportion packed for the local fresh market.(22) Growers in Western Australia sent 84% and those in Victoria North 82% of their export fruit to commercial packing sheds. As previously discussed, growers in these two regions were much less specialised in apple and pear production and had important other enterprises.

The proportion of packable fruit packed on-farm was higher on large apple and pear enterprises in most regions. Of the average quantity of apples and pears sold for export per farm, the proportion packed on farm was highest in the largest size group (40 to 179.9 acres of apples and pears) in all survey regions. On-farm packing was not necessarily associated with large enterprises as many such farms, mainly in Victoria North and Western Australia, with other important enterprises, had their apple and pear production packed commercially. In the specialised regions, Tasmania South, Tasmania North and Victoria South, the majority of farmers operating apple and pear orchards of between 10 and 24 acres packed their own fruit.

The proportion of growers with capital invested in grading and packing plant is indicated by the 70% of growers who packed all or part of their apple and pear production during the four years covered by the survey as shown in Table No. 12.

---

(22) Appendix Table D.XLIV, page 111 shows that an estimated 47% of local fresh market apples and pears were packed on farm in Western Australia. Much of the remaining 53% was not actually packed, being either picked direct into cases by growers or sent in bulk bins or dump cases (hired) from packing sheds after export grade fruit had been graded and packed.

Table No. 12

PROPORTION OF APPLES AND PEARS PACKED ON FARM, PROPORTION OF GROWER-PACKERS AND PROPORTION OF FARMS WITH COOL STORAGE: BY SURVEY REGIONS AND STATES

Four Year Averages, 1965-66 to 1968-69

Item	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	%	%	%	%	%	%	%	%
Proportion of export and local market apples and pears packed on farm	84	79	83	94	34	69	27	68
Proportion of total growers packing apples and pears	89	69	85	97	40	75	52	70
Proportion of farms with cool storage facilities	16	34	19	46	22	37	8	24

In Victoria and Western Australia a number of grower-packers restricted their packing to local market fruit and had their export grade packed in commercial sheds, i.e. the proportion of export growers packing export fruit was lower than the proportion of grower-packers (Appendix Table D.XLV).

Capital was also invested in cool stores as shown by the 24% of growers in the three States who owned and operated them at 30 June 1969. As shown in Table No. 12 the proportion was highest in Victoria South (46%) and lowest in Western Australia (8%). In the three States, approximately equal numbers of growers had freon gas and direct expansion systems. Some growers in Victoria South had installed controlled atmosphere (C.A.) storage.(23) (Appendix Table D.XLVIII).

(23) Apples and pears can be kept for long periods under cool storage which reduces the respiration of the fruit. Controlled atmosphere storage retards the rate of respiration even further, with the result of better quality and extension of the storage period up to a year, by reducing the amount of oxygen in the storage chamber to a much lower level than occurs in the air, e.g. from approximately 21% to about 2%. The system also involves control over the amount of carbon dioxide which would otherwise affect fruit quality.

Part VI

CAPITAL AND INVESTMENT

This part examines the levels of capital investment and the composition of this investment in the survey regions and is based on Appendix Tables D.XLIX-D.LIII.

Capital Structure

Total capital per farm was highest in Victoria South ($96,876) and Victoria North ($90,041), followed by Western Australia ($76,051), with Tasmania South and Tasmania North having the lowest values. *Land*, which represented 62% of average total capital in the three survey States, was the major item and its importance ranged from 77% of the total in Victoria South to 49% in Tasmania South. Average land values were highest in Victoria South at $1,049 per acre, followed by Victoria North $688, Tasmania South $159, Tasmania North $130 and Western Australia $71 per acre.

Table No. 13

CAPITAL STRUCTURE: BY SURVEY REGIONS AND STATES

Four Year Farm Averages, 1965-66 to 1968-69

Capital Item	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	$	$	$	$	$	$	$	$
Land	25,665	25,120	25,555	74,917	53,405	66,948	41,504	46,805
Plant and machinery	8,107	6,278	7,737	8,173	9,216	8,559	7,065	7,900
Fences, roads, culverts, etc.	1,119	2,425	1,383	546	808	643	3,828	1,719
Water supply and irrigation	1,569	682	1,389	1,553	3,285	2,195	3,140	2,180
Buildings	5,668	6,843	5,906	6,650	8,568	7,361	4,365	6,102
Livestock	1,314	1,747	1,402	541	1,489	892	10,537	3,586
Working capital	9,222	7,060	8,784	4,496	13,268	7,746	5,612	7,525
Total	52,664	50,155	52,156	96,876	90,041	94,344	76,051	75,817

The high unit land values in Victoria South were indicative of the suitability of farms in the Eastern Metropolitan district and, to a lesser extent, the Mornington Peninsula for purposes other than horticulture, i.e. subdivision for housing estates and perhaps industrial sites. High land values in Victoria North reflected sample farms in the Shepparton and Cobram

districts with a large proportion of the total area planted to applex, pears and other orchard fruits, all of which was irrigated. In the remaining three regions, Tasmania South, Tasmania North and Western Australia, where unit land values averaged less than $160 per acre, approximately 75% or more of total farm area consisted of grazing land or bushland and often wasteland which was not used.

Plant and Machinery

Capital invested in plant and machinery for the three States ranged from $9,216 per farm in Victoria North to $6,278 in Tasmania North and averaged $7,900. Capital invested in vehicles, which included tractors, trucks, utility trucks, etc. represented 33%; followed by seeding, fertilising and spraying equipment and harvesting equipment, each 16% (Appendix Table D.L).

Distribution by Total Capital

For the three States, 25% of apple and pear farms had total capital investments of between $20,000 and $40,000, with 24% having between $40,000 and $60,000. Only 5% of farms had a total investment of less than $20,000 while on 22% it was more than $100,000. In Tasmania North and Tasmania South, 49% and 44% of farms respectively involved total capital values of less than $40,000, but in Victoria South the proportion was only 17% and in Western Australia 22%. In Victoria South, where total capital was highest for all regions, the distribution was widespread; 12% of farms had less than $20,000, 25% between $100,000 and $150,000 and 12% $200,000 or more (Appendix Table D.LI).

Purchases and Sales of Capital Items

Details of purchases and sales of capital items during the survey period were obtained from growers and divided into eleven major categories for purchases and three major categories for sales (Appendix Table D.LII).

Table No. 14

TOTAL PURCHASES OF PLANT AND EQUIPMENT:
BY SURVEY REGIONS AND STATES

Annual Farm Averages, 1965-66 to 1968-69

Year	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	$	$	$	$	$	$	$	$
1965-66	2,083	1,977	2,061	1,271	2,507	1,729	2,643	2,077
1966-67	2,344	2,196	2,314	2,210	1,783	2,052	2,006	2,125
1967-68	1,641	1,022	1,515	999	2,182	1,437	1,756	1,546
1968-69	1,008	1,302	1,068	842	1,445	1,066	1,761	1,249

For all three States average annual purchases of capital items were valued at $3,162 per farm, the value being highest in Western Australia ($4,293) and lowest in Victoria South ($2,132). Sales of capital items were much less than purchases, although the difference was not so great in Victoria South where land sales averaged $881. For all three States purchases of capital items exceeded sales by $2,782, the greatest difference being $4,164 per farm in Western Australia and the smallest $1,184 in Victoria South.

Annual purchases of plant and equipment for the three States declined from $2,077 per farm in 1965-66 to $1,249 per farm in 1968-69. In the three specialist apple and pear regions, Tasmania South, Tasmania North and Victoria South, average annual purchases of plant and machinery in 1967-68 and 1968-69 were less than 60% of purchases in 1965-66 and 1966-67. The decline in purchases was not as great in the other two regions, which was 76% in Western Australia and 85% in Victoria North.

Part VII

GROSS FARM RECEIPTS

This section discusses gross farm receipts, the contribution of various enterprises to the total and the importance of various outlets to gross receipts derived from sales of apples and pears.(24) The method of deriving gross farm receipts is set out in Appendix C; every effort was made to value sales of apples and pears in a particular production year according to the total return received by the grower even though final payment for export fruit may not have been made until October or November, i.e. in the next financial year. The discussion in this section is covered by Appendix Tables D.LIV-D.LVIII.

Gross Farm Receipts

Gross farm receipts were divided into nine major categories and these have been further summarised into six categories in Table No. 15.

Receipts from apples and pears provided approximately 90% of gross farm receipts in Tasmania South, Tasmania North and Victoria South but only slightly more than 50% in Victoria North and Western Australia.

Other enterprise income which averaged $372 over all survey regions, consisted primarily of hail insurance proceeds and income received from quarrying and timber royalties, agistment and cartage.(25)

In addition to gross farm receipts, farmers also obtained income from other sources such as off-farm work, rent of other real estate, dividends, etc., which is not regarded as income from the farm. For all survey regions $773 was received from non-farm sources, $386 of which was derived from rent, interest, dividends and other similar sources (Appendix Table D.LV). The amount received from off-farm work in the form of wages

---

(24) The term 'gross farm receipts', which refers to all sources of farm receipts, is used as it includes apples and pears packed for final sale and valued at growers' f.o.b. and/or point of sale on the local fresh market (see page 75). In a later section of the report the term 'net farm receipts' is used and refers to the estimated value of apples and pears prior to grading and packing for export and the local fresh market.

(25) Some farmers received income from carting other growers' fruit and other produce. As the running costs, depreciation, etc. of the truck, appropriate to the cartage of other farmers' produce, could not be readily determined, they were included in farm costs, the gross income from cartage being counted in gross farm receipts.

Table No. 15

COMPOSITION OF GROSS FARM RECEIPTS: BY SURVEY REGIONS AND STATES

Four Year Averages, 1965-66 to 1968-69

Source	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	%	%	%	%	%	%	%	%
Apples	88	72	85	84	22	48	52	62
Pears	5	17	7	8	32	22	2	12
Apples and pears	93	89	92	92	54	70	54	74
Other tree fruit	-	2	-	3	41	25	3	11
Livestock	3	4	3	2	2	2	17	6
Other farm produce (including vegetables)	2	4	3	2	2	2	24	7
Other enterprise income	2	1	2	1	1	1	2	2
Total	100	100	100	100	100	100	100	100
	$	$	$	$	$	$	$	$
Gross farm returns	25,149	18,913	23,886	15,446	34,998	22,691	20,575	22,525

and salaries averaged only $67 per farm for all survey regions, the highest being $219 per farm in Tasmania North. The remaining non-farm income was derived from cool storage and grading and packing as some growers with their own packing and cool storage facilities handled fruit for others.(26) Some also purchased fruit for re-sale or sold fruit on behalf of other growers.

Distribution by Gross Farm Receipts

An estimated 59% of apple and pear farms in all survey regions received less than $20,000 per annum from farming activities in the survey period 1965-66 to 1968-69, while 7% received more than $50,000 (Appendix Table D.LVI).

(26) Direct costs of grading and packing, i.e. packing materials and labour, associated with other growers' fruit was deducted from farm costs and from the income received for this service and the profit classified as off-farm income.

Gross Receipts from Apples and Pears
by Type of Outlet.

The highest average gross receipts derived from the apple and pear enterprise were $23,306 in Tasmania South, followed by $18,825 in Victoria North with Western Australia ($11,158) being the lowest.

As discussed earlier in Part IV the proportion of total production of apples and pears exported varied between regions. The proportions of gross apple receipts obtained from export sales followed a similar pattern although, because of higher unit values for export fruit, the export market was more important in terms of value than of quantity. For the three States 62% of gross apple receipts came from the export market which was most significant in Tasmania South (92%), Tasmania North (89%) and Western Australia (74%). The proportions were much lower in the two Victorian regions, viz. 30% in Victoria North and only 5% in Victoria South (Appendix Table D.LVII)

It should be noted that receipts from export apples and pears included devaluation compensation paid to growers for fruit exported to the United Kingdom, Denmark and Hong Kong in 1968 and 1969.(27) These payments made significant contributions to export receipts and gross farm receipts as shown in Table No. 16. The greater dependence of Tasmanian growers on the United Kingdom market meant that their average rate of devaluation compensation per bushel exported to all countries was slightly greater than for Victoria and much higher than for Western Australia.

Average f.o.b. values for export apples and pears by region and State for the survey period are given in Table No. 17. The lower average f.o.b. values for Tasmania appear to have been largely the result of the following factors:

- The varietal composition of exports

  Lower priced varieties made up the greater part of Tasmanian exports, e.g. Cleopatra, Democrat, Jonathan and Sturmer provided 66% of apple exports and similarly varieties such as Winter Cole provided 62% of pear exports.(28)

- The higher proportion of sales at risk compared to Victoria and Western Australia (29)

  Risk sales are normally made at prices below the minimum prices set by the Australian Apple and Pear Board for forward sales.

---

(27) Because of the 12½% devaluation of sterling late in 1967, devaluation compensation was paid by the Commonwealth Government to owners of apples and pears exported to the United Kingdom, Hong Kong and Denmark in 1968 at rates of 50c per bushel for apples and 53c per bushel for pears and in 1969 at rates of 40c and 50c for apples and pears respectively.

(28) See Appendix Tables D.XXXVIII and D.XL for the varietal composition of apple and pear exports. The schedule of 1971 varietal support prices as given in the Apple and Pear Export Stabilisation Plan (Appendix B) indicates the relative prices of the major export varieties.

(29) Information provided by the Australian Apple and Pear Board shows that for 1968 and 1969, 68% of apples and 84% of pears exported from Tasmania were shipped at risk compared to only 28% of pear exports from Victoria and 28% of apple exports from Western Australia.

Table No. 16

ESTIMATED DEVALUATION COMPENSATION PER FARM AND PERCENTAGE CONTRIBUTION TO EXPORT RECEIPTS AND GROSS FARM RECEIPTS: BY SURVEY REGIONS AND STATES

1967-68, 1968-69 and Four Year Averages, 1965-66 to 1968-69

Item	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	$	$	$	$	$	$	$	$
Devaluation compensation -								
1967-68	2,671	1,861	2,508	53	622	263	209	980
1968-69	1,880	1,511	1,806	62	530	234	433	798
Average for four years	1,138	843	1,078	29	288	124	161	444
	%	%	%	%	%	%	%	%
As percentage of apple and pear export receipts -								
1967-68	11.3	12.9	11.5	7.0	6.9	6.9	3.5	9.6
1968-69	9.3	9.8	9.4	6.0	5.3	5.4	3.6	7.1
Average for four years	5.3	5.5	5.3	2.6	2.9	2.9	2.0	4.2
As percentage of gross farm receipts -								
1967-68	9.7	10.2	9.8	0.4	1.7	1.2	1.1	4.3
1968-69	7.9	7.7	7.8	0.4	1.6	1.1	1.7	3.4
Average for four years	4.5	4.5	4.5	0.2	0.8	0.6	0.8	2.0

Table No. 17

ESTIMATED AVERAGE GROWERS' F.O.B. VALUES(a) PER BUSHEL OF EXPORT APPLES AND PEARS: BY SURVEY REGIONS AND STATES

Four Year Averages, 1965-66 to 1968-69

(Per Bushel)

Item	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	$	$	$	$	$	$	$	$
Apples	2.75	2.80	2.76	2.95	3.17	3.10	3.10	2.85
Pears	2.55	2.46	2.51	3.38	3.16	3.18	3.28	2.96

(a) F.O.B. value after deducting exporters' commission but including devaluation compensation.

Local fresh sales were the major source of apple receipts in Victoria South with 92% of the total and in Victoria North 60% and were also significant in Western Australia where they averaged 25%. Receipts obtained from apple sales for canning and processing (juicing grade) provided only 4% of apple receipts for all survey regions and these ranged from 10% in Victoria North to only 1% in Western Australia where no canning outlet was available.

Part VIII

FARM COSTS

The level and composition of farm costs varied according to the type of farm, the size of the enterprise, the level of production, the proportions sold to various outlets and the extent to which the grower packed apples and pears in his own shed.

This section examines the whole-farm costs relating to all farming enterprises in which sample farms were engaged and also the estimated costs of grading, packing and other services required to prepare apples and pears for sale on export and local fresh markets. The discussion is based on Appendix Tables D.LIX-D.LXVII and the method of treating cost items is outlined in Appendix C.(30)

Cost Structure

Total costs averaged $25,066 per farm for the three States; on a regional basis they were highest in Victoria North ($37,664) and lowest in Victoria South ($20,478). As shown in Table No. 18 the cost of labour (including the imputed cost of the operator's labour) was the major cost item and constituted 27% of total costs.

Cash costs, i.e. cash expenses incurred in operating the farm, represented 60% of total costs for the three States; the proportion ranged from 70% in Victoria North to only 44% in Victoria South where average total capital, and consequently imputed interest, was high.

The cost of materials was the major item of cash costs in the three specialist regions but was exceeded by the cost of services in Victoria North and Western Australia.

The largest item of materials cost for the three States was packing materials for apples and pears ($2,195) followed by sprays and dusts ($1,431). In Tasmania South packing materials averaged $4,879 and in Tasmania North, $3,507 or slightly more than 50% of total materials cost in both regions. However, in Victoria South, where production of apples and pears per farm was lower and sold on the local fresh market at low cost per case,(31) packing materials cost only $1,411 (or 30% of material costs), slightly more than that for sprays and dusts ($1,212). In Victoria North $3,705 per farm was spent on sprays and dusts(32) while the cost of packing materials was only $1,088. Fertilisers formed the largest materials cost item ($1,116) on Western Australian farms (Appendix Table D.LIX).

---

(30) See page 80.

(31) See Appendix C, page 85.

(32) In Victoria North the total orchard area of apples, pears and other tree fruits averaged approximately 54 acres per farm (see Appendix Table D.III page 89).

Table No. 18

COMPOSITION OF TOTAL COSTS: BY SURVEY REGIONS AND STATES

Four Year Averages, 1965-66 to 1968-69

Cost Item	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	%	%	%	%	%	%	%	%
Cash costs -								
Hired labour	15	16	15	10	21	16	5	13
Contracts	-	-	-	-	-	-	1	-
Materials	33	31	33	23	23	23	21	26
Services	20	18	19	11	26	19	26	21
Total cash costs	68	65	67	44	70	58	53	60
Imputed costs -								
Operator's labour	8	9	8	10	6	7	8	8
Family, partner's labour	5	4	5	8	3	6	8	6
Depreciation	8	8	8	10	7	8	9	8
Interest on capital	11	14	12	28	14	21	22	18
Total imputed costs	32	35	33	56	30	42	47	40
Total	100	100	100	100	100	100	100	100
	$	$	$	$	$	$	$	$
Total cash and imputed costs	27,156	21,685	26,048	20,478	37,664	26,864	21,048	25,066

The cost of services was greatest in survey regions where growers relied on commercial packers to grade and pack the greater part of their apple and pear production. The total was $9,652 in Victoria North and $5,431 in Western Australia, the major item being packing charges which averaged $5,008 and $2,795 in these two regions respectively.(33)

Imputed costs, which averaged $10,017 for the three States, ranged from $11,486 in Victoria South to $7,566 in Tasmania North. The largest item of imputed costs in all regions, except Tasmania South, was interest, which was based on total capital and consequently varied accordingly.(34) The imputed cost of labour (operator, family, partners, etc.) at $3,427 and depreciation (which averaged $2,087 for the three States) did not differ greatly between survey regions (Appendix Table D.LX).

Grading, Packing and Marketing Costs for Apples and Pears

As discussed earlier in this part, Victoria North and Western Australia incurred greater expenses on packing charges than on packing materials while in the other three regions the situation was the reverse. To estimate the total cost of grading, packing and marketing of apples and pears in all survey regions, additional information was obtained from growers concerning the cost of hired labour engaged in on-farm grading and packing and the time spent by the operator, his family and partners on this work. In addition, depreciation and interest on capital invested in grading and packing equipment such as fruit graders, refrigeration plant and packing and cool storage sheds have been calculated.

The estimated total cost of grading, packing and marketing(35) apples and pears for the three States was $7,761 (or $7,271 per farm excluding operator's labour and interest on packing and grading capital as shown in Table No. 19). Totals were highest in Tasmania South and lowest in Victoria South.

---

(33) Of the quantity of apples and pears sold on the export and local fresh markets, an estimated 66% in Victoria North and 73% in Western Australia were handled by commercial packing sheds, i.e. packed off-farm (see Appendix Table D.XLIV page 111).

(34) See Appendix C, page 82, for the rates used to impute interest on capital.

(35) As discussed in Appendix C, page 75, apples and pears were valued at grower's f.o.b. for exports, and point of sale (less commission) for local fresh sales. Therefore marketing costs include only those incurred up to the point of valuation, e.g. overseas freight on export fruit is not included. The estimated cost of grading, packing and marketing excludes certain costs such as electricity for packing shed and coolstore, repairs to grading and packing equipment, fuel, wages and depreciation relating to the cartage of fruit and other costs which could not readily be separated from particular items of total farm costs. It is consequently understated to some extent.

Table No. 19

UNIT GRADING, PACKING AND MARKETING COSTS PER BUSHEL OF APPLES AND PEARS: BY SURVEY REGIONS AND STATES

Four Year Farm Averages, 1965-66 to 1968-69

Item	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	bu	bu	bu	bu	bu	bu	bu	bu
Total pack out(a)	8,212	6,608	7,888	5,650	6,565	5,989	3,867	6,051
	$	$	$	$	$	$	$	$
Gross receipts export and local fresh market	22,169	16,313	20,983	13,830	18,098	15,411	11,025	16,075
- per bushel	2.70	2.47	2.66	2.45	2.77	2.57	2.85	2.67
Grading, packing and marketing costs per bushel -								
Labour	0.18	0.15	0.17	0.17	0.05	0.12	0.04	0.13
Packing materials	0.59	0.53	0.59	0.26	0.17	0.22	0.16	0.37
Packing charges	0.16	0.16	0.16	0.06	0.77	0.34	0.73	0.33
Local freight	0.11	0.11	0.11	0.07	0.15	0.11	0.20	0.12
Cool storage	0.13	0.08	0.12	0.06	0.13	0.09	0.14	0.11
Handling charges	0.10	0.07	0.09	0.01	0.03	0.02	0.06	0.06
Marketing charges	0.04	0.03	0.04	0.01	0.03	0.02	0.05	0.03
Depreciation(b)	0.04	0.05	0.04	0.09	0.05	0.07	0.03	0.05
Total cost(c)	1.35	1.18	1.32	0.73	1.38	0.99	1.41	1.20

(a) Defined as the sum of export and local fresh market apples and pears.
(b) Relates only to packing and cool storage plant and buildings.
(c) Excludes the cost of the operator's labour and interest on packing and cool storage capital.

Table No. 20

NET RECEIPTS PER BUSHEL OF APPLES AND PEARS: BY SURVEY REGIONS AND STATES

Four Year Farm Averages, 1965-66 to 1968-69

Item	Unit	Region							Three States
		Tasmania			Victoria			Western Australia	
		South	North	State	South	North	State		
Gross receipts apples and pears	$	23,306	16,757	21,980	14,242	18,825	15,940	11,158	16,652
Less									
Packing and marketing costs(a)	"	11,087	7,797	10,421	4,125	9,029	5,942	5,451	7,271
Net receipts from apples and pears	"	12,219	8,960	11,559	10,117	9,796	9,998	5,708	9,380
Total production of apples and pears	bu	10,865	7,588	10,202	6,290	7,337	6,678	4,233	7,185
Unit value of apples and pears at farm gate	$/bu	1.12	1.18	1.13	1.61	1.34	1.50	1.35	1.31

(a) Excludes cost of operator's labour and interest on packing and grading capital.

Calculation of the per bushel costs by dividing the total costs of grading, packing and marketing by the quantity of apples and pears 'packed-out' gives the unit costs as shown in Table No. 19. Differences between regions were largely due to the proportion sold on the local market (usually at a lower unit packing cost). In Victoria South, where approximately 94% of fresh fruit sales were on the local fresh market, the unit cost was much lower than in Victoria North where, although 53% was sold on the local market, the greater part of this was sold in Melbourne and interstate and consequently involved higher unit costs for packing materials and freight. In Western Australia, where 60% was exported and the remainder sold mainly in Perth (resulting in freight costs of 20c to 25c per case for most growers) the unit cost for packed-out fruit was similar to those in Tasmania South and Victoria North.

As shown in Table No. 19, approximately 50% of the gross receipts derived from export and local market sales was absorbed by grading, packing and marketing costs in all regions except Victoria South. The importance of these costs, together with an overseas freight charge in excess of $2 per bushel,(36) emphasises the vulnerability of export growers to both cost movements outside the farm, over which they have little control, and to relatively small declines in overseas market prices.

The net receipts from apples and pears, i.e. an estimated value at farm gate, or after harvesting but before grading and packing, is calculated in Table No. 20 by deducting total packing and marketing costs from the total receipts from all sales of apples and pears.(37)

The unit net value of apples and pears was highest in Victoria South and lowest in the two Tasmanian regions.

---

(36) The average freight rates per bushel for apple exports to the United Kingdom and Europe during the survey period were as follows: 1966 $1.94, 1967 $2.05, 1968 $2.34 and 1969 $2.12.

(37) The different point of valuation for apples and pears compared to other farm produce overstates the importance of apples and pears if gross receipts are used as the measure. For example they contributed 74% of gross farm receipts and 61% of net farm receipts for the three States, while in both Victoria North and Western Australia the proportion was 54% of gross receipts and only 38% of net receipts (Appendix Table D.LXVII).

The lower unit values in Tasmania were the result of the following:

- the high proportion (over 70%) sold for export at lower average grower's f.o.b. prices (including devaluation compensation);

- the high proportion, particularly in Tasmania South (24%), sold for canning and juicing at lower prices than in other survey regions;(38) and

- the low proportion sold on the local fresh market compared to Victoria South in particular, where growers sold more than 80% of their production locally, the greater part at a low unit cost for grading, packing and marketing.

---

(38) See page 79 for prices received by growers for canning and juicing grade apples.

Part IX

FARM INCOMES

Net farm income is normally the principal measure used to compare the economic performance of the wholefarm enterprise. It is defined as the excess of gross farm returns over the sum of total cash costs and imputed costs for family and partner's labour and depreciation on capital items. The following discussion of farm incomes is covered by Appendix Tables D.LXVIII - D. LXXXI.

Net Farm Income

This measure, which represents a return to the grower for his labour, management and capital invested, was derived as shown in Table No. 21. By survey regions net farm income per farm was highest in Western Australia and Victoria North and lowest in the three 'specialist' apple and pear regions, Tasmania South, Tasmania North and Victoria South.

During the survey period, average net farm income for all three States declined from $4,819 in 1965-66 to $3,613 in 1968-69 despite devaluation compensation paid to growers in that year.(39)

This decline was apparent in the three specialist regions, even allowing for the differing biennial cropping pattern of apples which largely explained the variations in gross receipts from apples and pears from year to year as shown in Table No. 22.

In Tasmania South, net farm income averaged $5,402 in 1965-66 (an 'on' year when yields were high) and $2,018 in 1966-67 (an 'off' year when yields were low). However, in 1967-68 (an 'on' year), net farm income was only $3,346, of which the greater part is estimated to have been provided by devaluation compensation. It fell again to $1,969 in 1968-69 and exceeded the estimated amount of devaluation compensation received by growers in that year by less than $100.

In Tasmania North net farm income declined from $3,020 in 1965-66 and $2,144 in 1966-67 to only $1,096 in 1967-68 when, in the absence of devaluation compensation, net farm income would have been negative. Although it increased to $1,969 in 1968-69 the greater part was provided by devaluation compensation.

The level of net farm income in Victoria North in the first three years of the survey was not maintained in 1968-69 and fell sharply from $6,316 in 1967-68 to only $1,994 owing primarily to a poor pear crop and the resultant reduction in income from fresh pear sales and pears sold for canning.

---

(39) Devaluation compensation paid to the owners of apples and pears exported to sterling countries in 1967-68 and 1968-69 (see page 35).

Table No. 21

INCOME STRUCTURE: BY SURVEY REGIONS AND STATES

Four Year Farm Averages, 1965-66 to 1968-69

Item	Region							
	Tasmania			Victoria			W.A.	Three States
	South	North	State	South	North	State		
	$	$	$	$	$	$	$	$
A : Gross farm receipts	25,149	18,913	23,886	15,446	34,998	22,691	20,575	22,525
B_1 : Cash costs	18,445	14,119	17,569	8,992	26,537	15,493	11,223	15,049
B_2 : Family labour	1,418	926	1,318	1,711	1,243	1,538	1,687	1,506
B_3 : Depreciation	2,102	1,811	2,043	2,062	2,527	2,234	1,910	2,087
B : Total costs[(a)]	21,965	16,856	20,930	12,765	30,307	19,265	14,820	18,642
C : Net farm income (A-B)	3,184	2,057	2,956	2,681	4,691	3,426	5,755	3,883

(a) Excluded operator's labour and imputed interest on capital.

Table No. 22

GROSS RECEIPTS, TOTAL COSTS AND NET FARM INCOME: BY SURVEY REGIONS AND STATES

Annual Farm Averages, 1965-66 to 1968-69

Item		Region							Three States
		Tasmania			Victoria			Western Australia	
		South	North	State	South	North	State		
		$	$	$	$	$	$	$	$
Gross receipts from apples and pears -	1965-66	24,723	16,379	23,034	13,875	19,292	15,882	8,579	16,295
	1966-67	20,283	16,990	19,616	15,194	18,954	16,587	11,425	16,220
	1967-68	25,909	16,498	24,003	12,998	18,224	14,935	9,339	16,420
	1968-69	22,307	17,162	21,265	14,899	18,830	16,355	15,287	17,674
Gross farm receipts-	1965-66	27,267	18,606	25,513	15,014	35,759	22,700	17,808	22,333
	1966-67	21,776	19,144	21,243	16,459	34,928	23,302	20,173	21,812
	1967-68	27,597	18,344	25,724	14,319	36,966	22,710	18,728	22,647
	1968-69	23,954	19,559	23,064	15,994	32,340	22,050	25,589	23,308
Total costs(a) -	1965-66	21,865	15,586	20,594	11,819	29,836	18,494	12,150	17,514
	1966-67	19,758	17,000	19,199	13,068	30,396	19,489	15,155	18,259
	1967-68	24,251	17,248	22,834	12,682	30,650	19,339	14,084	19,099
	1968-69	21,985	17,590	21,095	13,491	30,346	19,735	17,891	19,695
Net farm income -	1965-66	5,402	3,020	4,919	3,195	5,923	4,206	5,658	4,819
	1966-67	2,018	2,144	2,044	3,391	4,532	3,813	5,018	3,553
	1967-68	3,346	1,096	2,890	1,637	6,316	3,371	4,644	3,548
	1968-69	1,969	1,969	1,969	2,503	1,994	2,315	7,698	3,613

(a) Excluding operator's labour and imputed interest on capital.

In 1968-69, net farm income averaged $7,698 in Western Australia and was somewhat greater than in the three previous years; this was due mainly to a higher apple yield.

Distribution by Net Farm Income

Average net farm incomes differed between regions, but an examination of the distribution of farms by level of income shows that in all regions some farms had negative incomes and others had net farm incomes of $10,000 or more as shown in Table No. 23.

Table No. 23

PERCENTAGE DISTRIBUTION BY NET FARM INCOME:

BY SURVEY REGIONS AND STATES

Four Year Averages, 1965-66 to 1968-69

Net Farm Income	Region							
	Tasmania			Victoria			W.A.	Three States
	South	North	State	South	North	State		
$'000	%	%	%	%	%	%	%	%
Under 0	20	41	24	18	11	15	8	16
0 - 1.9	15	18	16	36	15	28	9	19
2 - 3.9	29	19	27	22	29	25	20	25
4 - 5.9	23	15	21	9	12	10	24	17
6 - 7.9	7	-	5	4	26	12	18	11
8 - 9.9	1	3	2	5	-	3	3	3
10 and over	5	4	5	6	7	7	18	9
Total	100	100	100	100	100	100	100	100

For the three States, 16% of farms had negative net farm incomes. The proportion in Tasmania North was 41%, but most of these farms had losses of less than $1,000 (Appendix Table D. LXX).

Return to Capital and Management

Return to capital and management, which is derived by deducting the imputed cost of the operator's labour from net farm income and expressing the remainder as a percentage of total capital, gives the rate of return to capital and management.

Table No. 24

RETURN TO CAPITAL AND MANAGEMENT AND RATE OF RETURN: BY SURVEY REGIONS AND STATES

Four Year Farm Averages, 1965-66 to 1968-69

Item	Unit	Region							Three States
		Tasmania			Victoria			Western Australia	
		South	North	State	South	North	State		
A. Net farm income	$	3,184	2,057	2,956	2,681	4,691	3,426	5,754	3,883
B. Operator's labour	$	2,063	1,850	2,020	1,961	2,011	1,979	1,710	1,922
C. Return to capital and management (A-B)	$	1,121	207	936	720	2,680	1,447	4,044	1,961
D. Total capital	$	52,664	50,155	52,156	96,876	90,041	94,344	76,051	75,817
E. Rate of return to capital and management $(\frac{C}{D} \times \frac{100}{1})$	%	2.12	0.41	1.79	0.74	2.97	1.53	5.31	2.58

As shown in Table No. 24 the average rate of return was 2.6% and ranged from 0.4% in Tasmania North, where net farm income was only slightly greater than the allowance for operator's labour, to 5.3% in Western Australia. In Victoria South the rate of return was only 0.7%, which was caused by low net farm incomes and by inflated per acre values of land which contributed to high capital values for apple and pear farms in that region.

Within regions the proportion of farms with a positive return to capital and management was similar to that of farms with net farm incomes of $2,000 or more as operator's labour averaged approximately $2,000. In all regions there were some farms with rates of return to capital and management of 10% or more.

Other Income Measures

Although net farm income indicates the economic situation of the grower, farm income shows the income earned by the farm as a family concern, i.e. total receipts less cash costs and depreciation. Farm income ranged from $7,442 in Western Australia to only $2,983 in Tasmania North and, between regions, followed a pattern fairly similar to that shown by net farm income (Appendix Table D.LXVIII).

Farmer's net income, defined as the sum of net farm income and off-farm income, averaged $4,656 for the three States. It was similar in Western Australia and Victoria North, $6,092 and $5,826 respectively, and in Victoria South and Tasmania South, $3,847 and $3,761 respectively. Farms in Tasmania North again had the lowest income with $2,946.

Part X

INDEBTEDNESS

Information concerning amount of debt and sources from which borrowings were made was obtained from sample growers as at 30 June 1969.(40)

Average gross indebtedness per farm for the three States was estimated at $10,741 at 30 June 1969. The debt per farm ranged from $15,325 in Tasmania South to $5,166 in Victoria South.

Table No. 25

SOURCES OF FUNDS BORROWED: BY SURVEY REGIONS AND STATES

At 30 June 1969

Source of Funds	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	%	%	%	%	%	%	%	%
Banks	34	42	36	47	40	44	44	41
Development banks and agencies	18	6	16	17	18	17	24	19
Packing houses, exporters, etc.	43	9	38	1	2	1	11	19
Private	2	29	6	31	33	33	16	17
All other	3	14	4	4	5	5	5	4
Total	100	100	100	100	100	100	100	100
	$	$	$	$	$	$	$	$
Total indebtedness per farm	15,325	8,836	14,009	5,166	14,111	8,480	10,238	10,741

(40) Ten growers did not wish to answer questions on debt and consequently the debt information comprises industry estimates based on a total of 186 farms rather than the complete sample number on which the preceding parts are based. In any event there is no reason to believe that the debt situation of the ten growers differed from average. The raising factors were adjusted to take account of the slightly smaller sample.

Banks (predominately trading banks) provided 41% of the funds borrowed and still outstanding as shown in Table No. 25. Other main sources were packing houses, exporters and other merchants 19%; development banks (Commonwealth and State) and other Government agencies such as War Service Land Settlement 19%; and private lenders (including relatives) 17%. Banks were the major source in all regions except in Tasmania South where packing houses, exporters and other merchants provided 43%.(41)

The estimates of debt given in Table No. 25 relate, however, to only one point of time and therefore can give no indication of changes in the level of indebtedness during the four years of the survey. Information obtained from accountants concerning interest paid shows that the average annual amount for the three States increased from $397 in 1965-66 to $641 in 1968-69. The increase was greatest in Tasmania South where the amount paid was $451 per farm in 1965-66 and $888 in 1968-69 (Appendix Table D.LXXIII). This increase would have been only partly due to higher interest rates and consequently indebtedness apparently increased considerably in this region in the survey period. Interest paid has not been included as a cost for purposes of the survey and consequently had to be met out of net farm income. Debt servicing was therefore a serious problem for many growers in Tasmania South in 1968-69 when interest paid was equivalent to 45% of net farm income.

Table No. 26

DISTRIBUTION OF FARMS BY TOTAL INDEBTEDNESS:

BY SURVEY REGIONS AND STATES

At 30 June 1969

Debt Outstanding	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
$'000	%	%	%	%	%	%	%	%
Nil	23	30	24	39	43	41	27	32
0 and under 5	21	24	22	27	13	22	20	22
5 " " 10	10	30	14	20	7	15	8	13
10 " " 15	9	3	8	7	13	6	16	9
15 " " 20	9	-	7	3	7	8	12	8
20 " " 40	20	7	17	1	14	5	13	11
40 and over	8	6	8	3	3	3	4	5
Total farms	100	100	100	100	100	100	100	100

(41) The licensed exporters, in addition to making mortgage loans to growers, make finance available by way of cash advances on which the grower is also charged interest. These cash advances are usually made before the end of February and are used to meet cash costs such as the purchase of packing materials, wages for pickers, etc. see *Marketing of Tasmanian Apples and Pears: Report of Board of Enquiry*, Parliament of Tasmania, 1970, p. 49.

In the three States 16% of farms owed $20,000 or more, while approximately one third had no debts at 30 June 1969 as shown in Table No. 26. The proportion of farms free of debt was highest in Victoria North (43%) and Victoria South (39%). At the other end of the scale 28% of farms in Tasmania South had debts totalling $20,000 or more.

The equity ratio(42) indicates the proportion of total capital in which the grower has equity, i.e. capital free of debt. For the three States the average equity ratio at 30 June 1969 was 85% and ranged from 94% in Victoria South to 67% in Tasmania South. The proportion of growers with less than 50% equity in their farming enterprise was highest in Tasmania South where 25% were in this category (Appendix Table D. LXXV).

---

(42) Defined as:

$$\frac{\left[\text{Capital value at 30 June 1969 (excluding working capital) minus indebtedness at 30 June 1969}\right]}{\text{Capital value at 30 June 1969 (excluding working capital)}} \times \frac{100}{1}$$

Part XI

RELIABILITY OF SURVEY ESTIMATES

Estimates of farm characteristics (such as net farm income) based on a probability sample of farms are likely to be different from results obtained had the information been collected for all farms. These differences are called sampling errors. Estimates of sampling errors on major variables of the survey are shown in Table No. 27.

While a variety of procedures has been developed for the purpose of minimising sampling errors, no procedure can eliminate them. There are several related measures of the sampling error of a survey estimate. The two used in this report are standard error and relative standard error. Interpretation of these two measures and their relationship are discussed below.

Standard Error

The standard error of an estimate may be used to calculate a confidence interval within which the population value is likely to fall and is interpreted as follows. There are nineteen chances in twenty that the population value will lie within a range of two standard errors either side of a sample estimate of that value. Survey estimates are shown in column B of Table No. 28 and their standard errors are shown in column C. The first line of the table shows that the survey-estimated percentage production for Cleopatra apples in Tasmania is 11.08% with a standard error of 1.58%. Thus there are nineteen chances in twenty that the actual percentage of total production for Cleopatra lies in the range of (7.92% to 14.24%): that is, (11.08 ± 2 x 1.58%).

Relative Standard Errors

The relative standard error is closely related to the standard error. It is in fact a standardised form which allows comparisons of the level of sampling error on different estimates. It is equal to the ratio of the standard error of a survey estimate to the survey estimate, expressed as a percentage. Relative standard errors have been used in Table No. 27 and are interpreted as follows. The table shows that the estimated mean production of apples and pears for farms in Southern Tasmania is 10,865 bushels and this estimate has a relative standard error of 5.6%. There are nineteen chances in twenty that the population value of mean production of apples and pears in this region lies within a range of 11.2% (2 x 5.6%) either side of this value, that is between 9,648 and 12,082 bushels.

Non-Sampling Error

The results of both complete enumerations and sample surveys may be subject to errors arising from incomplete and poor response, from mistakes made in the course of processing and so on. Such errors are known as non-sampling errors since their occurrence in no way depends on the use of sampling methods.

Table No. 27

MEAN AND RELATIVE STANDARD ERRORS FOR MAJOR VARIABLES: BY SURVEY REGIONS AND STATES

Four Year Averages, 1965-66 to 1968-69

Variable	Unit	Region							Three States
		Tasmania			Victoria			W.A.	
		South	North	State	South	North	State		
Total farm area									
- mean	acres	161.2	192.9	167.6	71.4	149.1	100.2	586.7	249.7
- relative standard error	%	14.8	14.1	11.8	10.9	24.3	14.3	21.3	13.6
Total acreage apples and pears									
- mean	acres	22.3	26.6	23.2	25.1	25.7	25.3	20.1	23.3
- relative standard error	%	3.9	5.0	3.2	5.9	6.6	4.4	4.3	2.5
Total production apples and pears									
- mean	bushel	10,865	7,588	10,201	6,290	7,337	6,678	4,233	7,184
- relative standard error	%	5.6	8.4	5.0	7.6	7.9	5.5	8.1	3.4
Yield/bearing acre of apples									
- mean	bushel	572	357	530	305	332	312	279	383
- relative standard error	%	5.4	8.9	4.7	6.5	6.1	5.1	8.7	3.3
Yield/bearing acre of pears									
- mean	bushel	385	317	354	232	318	297	273	307
- relative standard error	%	11.1	11.0	8.2	10.4	7.2	6.7	17.4	5.5
Total capital									
- mean	$	52,664	50,155	52,156	96,876	90,041	94,344	76,051	75,817
- relative standard error	%	4.8	7.6	4.2	13.1	11.1	9.3	10.5	5.6
Gross farm receipts									
- mean	$	25,149	18,913	23,886	15,446	34,998	22,691	20,575	22,525
- relative standard error	%	5.2	8.9	4.6	9.1	11.0	7.4	8.1	4.0
Total cash costs									
- mean	$	18,445	14,119	17,569	8,992	26,537	15,493	11,223	15,049
- relative standard error	%	5.1	8.7	4.5	8.6	12.2	8.4	7.3	4.2
Total imputed costs									
- mean	$	8,711	7,566	8,479	11,486	11,127	11,353	9,825	10,017
- relative standard error	%	3.3	6.7	3.0	8.6	8.4	6.3	7.1	3.5
Net farm income									
- mean	$	3,184	2,057	2,956	2,681	4,691	3,426	5,755	3,883
- relative standard error	%	14.6	26.4	13.1	17.1	13.9	11.0	12.7	7.1
Return to capital and management									
- mean	$	1,121	207	936	720	2,680	1,447	4,044	1,961
- relative standard error	%	40.7	263.4	40.6	61.5	24.1	25.4	17.4	13.7
Rate of return to capital and management									
- mean	"	2.1	0.4	1.8	0.7	3.0	1.5	5.3	2.6
- relative standard error	"	38.6	261.2	38.9	63.6	23.3	26.7	12.1	13.1

Table No. 28

VARIETAL COMPOSITION OF PRODUCTION AND STANDARD ERRORS

FOUR YEAR AVERAGES, 1965-66 to 1968-69: BY STATE

TASMANIA: APPLES PRODUCED

Variety	*a* Percentage	*b* Production	*c* S.E.	$\frac{(a-b)^2}{c}$
	Dept. of * Agriculture	BAE	BAE	
Cleopatra	9.04	11.08	1.58	1.70
Crofton	4.28	5.08	1.16	0.48
C.O.P.	2.00	1.61	0.29	1.80
Delicious	4.63	5.91	0.75	2.90
G. Del.	2.62	3.55	0.67	1.94
Democrat	19.25	18.22	1.80	0.32
G. Fanny	1.65	1.74	0.62	0.02
G. Smith	13.09	12.19	1.13	0.65
Jonathan	19.36	17.66	1.56	1.20
Scarlet	1.20	1.94	0.70	1.10
Sturmer	21.67	16.32	2.15	1.19
T. Pride	1.21	1.70	0.43	1.22
			χ^2_{11}	14.52 n.s.

VICTORIA: APPLES PRODUCED

Variety	*a* Percentage	*b* Production	*c* S.E.	$\frac{(a-b)^2}{c}$
	Dept. of * Agriculture	BAE	BAE	
Delicious	10.96	9.08	1.26	2.22
G. Del.	5.83	6.01	1.14	0.02
Democrat	1.85	2.57	0.47	2.29
G. Smith	34.35	30.23	3.04	1.84
Jonathan	36.33	42.46	3.32	3.38
King Cole	2.59	2.28	0.89	0.12
R. Beauty	5.81	4.99	1.04	0.62
Yates	2.28	2.38	0.84	0.01
			χ^2_7	10.54 n.s.

WESTERN AUSTRALIA: APPLES PRODUCED

Variety	*a* Percentage	*b* Production	*c* S.E.	$\frac{(a-b)^2}{c}$
	Dept of * Agriculture	BAE	BAE	
Cleopatra	5.36	7.56	1.38	2.53
Delicious	3.76	2.07	0.79	4.57
G. Del.	1.46	2.04	0.53	1.20
G. Smith	74.33	75.51	8.17	0.02
Jonathan	7.21	6.26	0.98	0.93
Yates	7.88	6.56	1.40	0.89
			χ^2_5	10.14 n.s.

VICTORIA: PEARS PRODUCED

Variety	*a* Percentage	*b* Production	*c* S.E.	$\frac{(a-b)}{c}$
	Dept of * Agriculture	BAE	BAE	
Beurre Bosc	11.51	8.66	2.71	1.10
Josephine	10.85	9.06	2.21	0.65
Packham	69.89	68.78	11.03	0.01
W. Cole	2.21	2.29	1.86	0.14
W. Nelis	5.54	10.58	2.94	2.93
			χ^2_4	4.83 n.s.

χ^2 Values

	5%	1%
χ^2_{11} =	19.68	24.73
χ^2_7 =	14.07	18.48
χ^2_5 =	11.07	15.01
χ^2_4 =	9.49	13.28

n.s., non-significant.

* Production figures as provided by the appropriate State Department of Agriculture.

An Evaluation of the Non-Sampling Errors of the Estimates

Whilst the concept of non-sampling errors is simple, it is very difficult to measure them. This is undesirable since this means that the reliability of survey estimates cannot be fully evaluated. However, if the non-sampling errors are very much smaller than the sampling errors this is not important, since the latter can be calculated.

An attempt was made to discover whether the non-sampling errors of the estimates presented in this report were significant. To do this, the varietal composition of production and exports estimated from the survey were compared with relevant statistics compiled by the State Departments of Agriculture and the Department of Primary Industry. A χ^2 test was used to test for differences between the two sets of figures. If the test produced a non-significant result it was concluded that the non-sampling errors of the relevant survey estimates were relatively small. This was the case for what were regarded as the four most important comparisons, namely for the varietal composition of apple production in Tasmania, Victoria and Western Australia and of pear production in Victoria.

The conclusion to be reached was less obvious in those comparisons where the test produced a significant result. The survey excluded small producers. However, they were included in the calculation of the State Department and Commonwealth Department of Primary Industry figures. Thus significant differences between the survey estimates and other figures could have arisen because of the size of the non-sampling errors in the survey estimates or because the varietal composition of production and exports of small producers was unusual.

Table No. 29

CHI-SQUARE TEST RESULTS ON VARIETAL COMPOSITION SHOWN IN TABLE NO. 28

	χ^2 Value		d.f.
Tasmanian apple exports	96.88	Highly significant	12
Victorian " "	16.68	Significant	7
W.A. " "	124.32	Highly significant	5
Tasmanian pear production	33.64	Highly significant	7
W.A. " "	1.90	Not significant	1
Tasmanian pear exports	20.11	Highly significant	7
Victorian " "	2.20	Not significant	4
W.A. " "	5.22	Significant	1

There was evidence to suggest that significance arose for this latter reason, namely that it could be attributed to the survey underestimating the production of less common varieties.

Whilst the tests were not conclusive, they suggest that the non-sampling errors of the survey estimates were relatively small. Consequently, the reliability of these estimates could be satisfactorily evaluated by looking at the estimated sampling errors, that is the relative standard errors presented.

APPENDIXES

A P P E N D I X A

ACREAGES, PRODUCTION, YIELDS AND EXPORTS OF APPLES AND PEARS BY STATE

1960-61 to 1969-70

Table A.I

PRODUCTION OF APPLES

Financial Year	Tas.	Vic.	W.A.	N.S.W.	Qld	S.A.	Aust. (a)
	'000 bushels	'000 bushels	'000 bushels	'000 bushels	'000 bushels	'000 bushels	'000 bushels
1960-61	5,594	3,135	2,053	2,386	1,064	1,254	15,487
1961-62	7,844	3,046	1,137	2,660	1,160	1,276	17,127
1962-63	6,262	4,059	1,977	3,246	1,305	1,496	18,349
1963-64	8,545	2,399	1,287	3,329	1,481	1,341	19,285
1964-65	6,207	4,394	2,355	2,988	1,324	1,625	18,897
1965-66	8,364	4,206	1,603	2,924	1,375	1,308	19,783
1966-67	6,301	4,357	2,387	3,329	1,496	1,544	19,418
1967-68	7,943	3,875	3,060	3,287	1,071	1,378	19,615
1968-69	7,138	4,858	2,870	3,701	2,043	1,561	22,174
1969-70	7,400	5,331	2,610	4,100	1,250	1,561	22,259
10-year average	7,160	3,966	2,134	3,195	1,357	1,434	19,239
As percentage of total	% 37.1	% 20.6	% 11.1	% 16.6	% 7.1	% 7.5	% 100.0

(a) Includes A.C.T.

Source: Commonwealth Bureau of Census and Statistics, *The Fruit Growing Industry* (various issues).

Table A.II

PRODUCTION OF PEARS

Financial Year	Tas.	Vic.(a)	W.A.	N.S.W. (a)	Qld	S.A.	Aust.(b)
	'000 bushels	'000 bushels	'000 bushels	'000 bushels	'000 bushels	'000 bushels	'000 bushels
1960-61	461	1,489	169	405	68	337	2,929
1961-62	566	1,931	153	481	75	434	3,640
1962-63	415	1,414	172	441	95	412	2,949
1963-64	625	1,833	156	466	113	523	3,716
1964-65	490	1,681	191	375	82	574	3,393
1965-66	650	2,205	190	357	107	509	4,018
1966-67	404	1,865	154	428	101	530	3,482
1967-68	511	1,861	182	383	125	610	3,672
1968-69	451	1,260	191	463	128	405	2,898
1969-70	496	2,334	212	549	119	644	4,354
10-year average	507	1,787	177	435	101	498	3,505
As percentage of total	% 14.5	% 51.0	% 5.0	% 12.4	% 2.9	% 14.2	% 100.0

(a) Non-canning pears only. (b) Includes A.C.T.

Source: Commonwealth Bureau of Census and Statistics, op. cit.

Table A.III

TOTAL APPLE ACREAGE

Financial Year	Tas.	Vic.	W.A.	N.S.W.	Qld	S.A.	Aust.(a)
	acres	acres	acres	acres	acres	acres	acres
1960-61	17,551	21,159	14,432	16,693	11,315	5,680	86,882
1961-62	17,254	21,373	14,553	17,095	11,576	5,660	87,571
1962-63	17,383	22,726	14,849	18,193	12,299	5,879	91,380
1963-64	17,621	22,887	15,126	18,743	12,570	5,862	92,859
1964-65	18,075	22,678	15,742	19,031	13,255	6,038	94,870
1965-66	18,389	22,247	16,041	19,062	13,144	5,943	94,865
1966-67	18,540	22,154	15,654	18,945	13,710	5,937	94,973
1967-68	18,378	21,074	15,078	18,692	13,438	5,900	92,591
1968-69	18,159	21,110	15,165	18,826	13,801	5,869	92,957
1969-70	17,846	20,910	14,371	19,014	13,570	5,886	91,630

(a) Includes A.C.T.

Source: Commonwealth Bureau of Census and Statistics, op. cit.

Table A.IV

BEARING APPLE ACREAGE

Financial Year	Tas.	Vic.	W.A.	N.S.W.	Qld	S.A.	Aust. (a)
	acres	acres	acres	acres	acres	acres	acres
1960-61	15,825	15,109	10,766	11,766	7,491	4,868	65,868
1961-62	15,417	15,408	10,657	11,749	7,815	4,783	65,873
1962-63	15,489	15,813	10,833	12,632	8,179	4,902	67,886
1963-64	15,545	15,934	10,889	12,963	8,541	4,768	68,680
1964-65	15,532	16,597	11,511	13,315	9,178	4,826	70,972
1965-66	15,454	16,731	11,760	13,278	9,158	4,699	71,111
1966-67	15,235	16,710	11,596	13,366	9,640	4,638	71,210
1967-68	14,945	16,083	11,296	13,530	9,735	4,609	70,197
1968-69	14,487	16,305	11,480	13,996	10,587	4,562	71,441
1969-70	14,343	16,392	11,435	14,568	10,571	4,641	71,974

(a) Includes A.C.T.

Source: Commonwealth Bureau of Census and Statistics, op. cit.

Table A.V

TOTAL PEAR ACREAGE

Financial Year	Tas.	Vic.	W.A. (a)	N.S.W.	Qld (a)	S.A. (a)	Aust.(b)
	acres	acres	acres	acres	acres	acres	acres
1960-61	1,302	6,913	984	1,920	659	1,977	13,755
1961-62	1,323	6,792	1,027	2,149	796	2,080	14,167
1962-63	1,318	6,884	1,074	2,058	887	2,059	14,280
1963-64	1,352	6,753	1,080	2,007	1,154	2,027	14,373
1964-65	1,394	6,479	1,148	1,917	994	2,034	13,966
1965-66	1,367	6,426	1,144	1,999	1,160	1,977	14,073
1966-67	1,284	6,408	1,080	2,009	987	1,920	13,688
1967-68	1,164	5,827	1,018	1,930	1,171	1,942	13,052
1968-69	1,136	5,865	978	1,971	1,124	1,885	12,959
1969-70	1,138	5,843	973	2,030	1,208	1,903	13,095

(a) Includes canning pears. (b) Includes canning pears grown in Western Australia, Queensland and South Australia.

Source: Commonwealth Bureau of Census and Statistics, op. cit.

Table A.VI

BEARING PEAR ACREAGE

Financial Year	Tas.	Vic.	W.A. (a)	N.S.W.	Qld (a)	S.A. (a)	Aust. (b)
	acres	acres	acres	acres	acres	acres	acres
1960-61	1,177	5,415	789	1,675	337	1,466	10,859
1961-62	1,185	5,578	790	1,731	380	1,567	11,231
1962-63	1,186	5,918	799	1,733	414	1,606	11,656
1963-64	1,208	5,959	783	1,703	544	1,637	11,834
1964-65	1,225	5,394	799	1,612	487	1,664	11,181
1965-66	1,189	5,447	800	1,700	624	1,641	11,401
1966-67	1,117	5,441	812	1,720	538	1,578	11,206
1967-68	1,005	4,979	743	1,637	666	1,585	10,605
1968-69	988	5,048	760	1,659	680	1,538	10,673
1969-70	1,018	5,075	813	1,705	797	1,526	10,934

(a) Includes canning pears. (b) Includes canning pears grown in Western Australia, Queensland and South Australia.

Source: Commonwealth Bureau of Census and Statistics, op. cit.

Table A.VII

YIELD PER BEARING ACRE OF APPLES

(Per Acre)

Financial Year	Tas.	Vic.	W.A.	N.S.W.	Qld	S.A.	Aust. (a)
	bu	bu	bu	bu	bu	bu	bu
1960-61	353	207	191	203	142	258	235
1961-62	509	198	107	226	148	267	260
1962-63	404	257	183	257	160	305	270
1963-64	550	207	118	257	173	281	281
1964-65	400	265	205	224	144	337	266
1965-66	541	251	136	220	150	278	278
1966-67	414	261	206	249	155	333	273
1967-68	531	241	183	243	110	299	279
1968-69	493	298	250	264	193	342	310
1969-70	516	325	228	281	118	336	309

(a) Includes A.C.T.

Source: Commonwealth Bureau of Census and Statistics, op. cit.

Table A.VIII

YIELD PER BEARING ACRE OF PEARS(a): BY STATE

(Per Acre)

Financial Year	Tas.	Vic.	W.A.	N.S.W.	Qld	S.A.	Aust. (b)
	bu	bu	bu	bu	bu	bu	bu
1960-61	318	275	214	242	201	230	270
1961-62	385	346	194	278	197	277	324
1962-63	285	239	215	254	231	257	253
1963-64	428	308	199	273	209	320	314
1964-65	334	312	239	233	169	345	303
1965-66	453	405	237	210	172	310	352
1966-67	289	343	189	249	188	336	311
1967-68	419	374	245	234	187	385	346
1968-69	384	250	252	279	188	263	272
1969-70	407	460	261	322	149	422	398

(a) Pear yields for Victoria and New South Wales relate to non-canning pears only; for other States yields relate to all types of pears. (b) Yield per bearing acre for Australia derived using estimated production and bearing acreage for Australia as presented in Tables A.II and A.VI.

Source: Commonwealth Bureau of Census and Statistics, op. cit.

Table A.IX

EXPORTS OF APPLES

Financial Year	Tas.	Vic.	W.A.	N.S.W.	Qld	S.A.	Aust.
	'000 bushels	'000 bushels	'000 bushels	'000 bushels	'000 bushels	'000 bushels	'000 bushels
1960-61	3,877	101	1,353	86	93	240	5,750
1961-62	5,685	207	561	195	155	314	7,117
1962-63	4,924	363	1,302	222	154	431	7,396
1963-64	6,350	205	701	192	192	366	8,006
1964-65	4,570	471	1,597	174	49	559	7,420
1965-66	6,191	413	863	131	192	94	7,884
1966-67	4,376	299	1,550	174	83	407	6,889
1967-68	5,414	137	1,048	64	97	132	6,892
1968-69	4,917	527	1,700	178	209	21	7,552
1969-70	4,919	234	1,526	134	57	125	6,996
10-year average	5,119	296	1,220	155	128	269	7,190
As percentage of total	% 71.2	% 4.1	% 17.0	% 2.2	% 1.8	% 3.7	% 100.0

Source: Australian Apple and Pear Board, *Annual Report* (various issues).

Table A.X

EXPORTS OF PEARS

Financial Year	Tas.	Vic.	W.A.	N.S.W.	Qld	S.A.	Aust.
	'000 bushels	'000 bushels	'000 bushels	'000 bushels	'000 bushels	'000 bushels	'000 bushels
1960-61	374	835	27	9	5	13	1,263
1961-62	451	1,141	18	10	11	27	1,658
1962-63	296	723	29	17	13	-	1,078
1963-64	538	1,128	38	33	9	20	1,766
1964-65	389	979	53	16	4	-	1,441
1965-66	540	1,491	48	22	8	17	2,126
1966-67	291	1,085	36	18	4	-	1,434
1967-68	423	1,201	36	17	7	4	1,688
1968-69	355	654	69	27	7	-	1,112
1969-70	377	1,510	65	46	2	1	2,002
10-year average	403	1,075	42	22	7	8	1,557
As percentage of total	% 26.0	% 69.0	% 2.7	% 1.4	% 0.4	% 0.5	% 100.0

Source: Australian Apple and Pear Board, op. cit.

Appendix B

APPLE AND PEAR EXPORT STABILISATION PLAN

The main features of the plan, which applied from the 1971 export season, are as follows:

Quantity

- up to 4.4m bushels of apples and pears exported in a season at some degree of risk to the owner (i.e. fruit sold afloat, on free consignment or against a guaranteed advance);

- the Commonwealth guarantee per bushel will decrease in proportion to the extent to which more than 4.4m bushels of apples and pears are exported at risk.

Level of Support

- determined by the difference between the individual negotiated varietal support prices and the corresponding average varietal returns from *all* sales, at risk or otherwise, in all export markets. The maximum level of support to be 80c per bushel.

Varietal Support Prices

- the weighted average of all apple and pear varietal support prices will equal the general support prices of $2.90 per bushel for apples and $3.13 per bushel for pears at f.o.b. and exclusive of exporters' commission;

- the general support prices will be adjusted each year in accordance with movements in cash costs. The varietal support prices for 1971 were:

Table B.I

STABILISATION VARIETAL SUPPORT PRICES: 1971

Variety	Price per Bushel	Variety	Price per Bushel
	$		$
Apples -		Apples -	
Granny Smith	3.33	Delicious	2.68
Red Delicious	3.30	Yates	2.68
Golden Delicious	2.90	Rome Beauty	2.65
Crofton	2.90	Scarlet Pearmain	2.60
Cox's Orange Pippin	2.84	Tasman's Pride	2.60
Legana	2.75	Sturmer	2.55
Cleopatra	2.75	Red Jonathan	2.58
Geeveston Fanny	2.73	Other Jonathans	2.50
Democrat	2.70	Other varieties	2.55
Pears -			
Packham	3.40		
Beurre Bosc	3.00		
Josephine	2.63		
Winter Nelis	2.60		
Other varieties	2.55		

Funds

- will be established for each variety:

  (i) if the average varietal return exceeds the varietal support price -

  Owners will contribute to the funds at a uniform rate as follows:

  25% of the first 20c of the difference;

  plus 50% of the second 20c of the difference;

  plus 75% of the third 20c of the difference;

  plus 100% of the balance;

  up to a maximum of 80c per bushel.

(ii) if the average varietal return is less than the varietal support price -

Owners will receive a uniform rate of contribution from the fund of the difference, up to a maximum of 80c per bushel.

Where there is insufficient money in a fund to pay all owners the uniform rate, the Commonwealth Government will make up the deficiency.

There will be ceilings to the amount of contributions to be held in each fund.

Contributions will be returned to owners, on a first-in, first-out basis when a ceiling is pierced.

Period of the Plan

- 5 years

Administration of the Plan

- the Australian Apple and Pear Board will establish a central body for administration.

Review Provisions

- the plan includes a review provision which will enable any inequities which may become apparent to be examined.

Appendix C

TREATMENT OF ITEMS AND EXPLANATORY NOTES

The procedures used in deriving individual farm results and incorporating them in the farm survey tables are outlined below, together with appropriate explanatory and background information.

Farm Characteristics

The land use pattern of apple and pear farms was divided into eight components according to the way total area was utilised during the survey period. One of these categories, 'crops', includes cereal and fodder crops and another category, 'waste and fallow', includes uncleared land.

Labour Force

Information concerning family labour, permanent and casual hired labour and contract labour was obtained from the farmers interviewed. All classes of labour were subdivided as closely as possible into apple and pear orchard work and harvesting, apple and pear packing and grading, other farm enterprises, farm development and, for the operator only, off-farm work.

The allocation of the farm labour force into these different categories was based on information provided by the grower. In many cases, as the information was required over a four year period, it was subdivided on the basis of experience for the period, rather than from information obtained from farm records. The estimates for each year were based on the general position adjusted according to the changes in levels of production on which the amount of casual labour employed was largely dependent.

Farm development work for which the labour input was obtained, related to work of a capital nature such as clearing, fencing, and new tree plantings which expanded orchard area.

Contract work consisted primarily of two types - labour intensive contracts such as tree planting, pruning, re-working and shearing which was included in the labour analysis, and capital intensive contract work such as bulldozing in which the labour content was relatively small and was consequently not included in total labour.

The average number of weeks worked by particular types of labour was calculated from the data collected and, to enable comparisons to be made, these were converted into adult male equivalents. Hired labour, both permanent and casual, was included according to the number of weeks worked, with appropriate reductions in adjusting to adult male equivalents for female and junior males.(43) Contract labour was treated in the same way as hired labour.

---

(43) Adjusted according to the ratio of the hypothetical cost for the particular labour class (as if it had been imputed) to the ordinary hand adult rate.

The imputed annual cost of family labour(44) was divided by the annual award rate(45) for an adult male (ordinary hand) to give the portion of an adult male equivalent attributable to each class of family labour used.

The operator, of which by definition there was only one on each survey farm (partners and sharefarmers being counted as family labour), was treated as one complete adult male equivalent with appropriate reduction for time spent on farm development, off-farm work and, in cases where it was significant, on trading in and/or packing other growers' fruit. In the last two cases, as the time and the imputed cost of these activities did not relate to his operation of the farm, they were not charged against the farming enterprise, being excluded completely from the labour analysis.(46)

Production

Records of production were available for apples and pears exported by survey growers, but details of production sold to other outlets, particularly the local fresh fruit market, were either difficult to obtain or non-existent. Where no records of production and sales were available, growers' estimates were used. With the authority of growers and the co-operation of exporters, wholesale fruit merchants and managers of canneries and processing factories, details of apples and pears produced and the respective payments made to growers were recorded for each year.

The four methods of disposal used to classify apples and pears were:

- exports
- local fresh market including interstate
- canning grade
- juicing grade

The type of data available and the methods of converting quantities into a standard unit are discussed below.

Exports

Quantities by variety were obtained from each grower's exporter(s) and each case or box was treated as being equivalent to one bushel even though the actual weight of fruit varied to some extent according to the type of container and the count.(47) Bulk bin export shipments were converted to approximate bushel equivalents. Details of the type of container or box and the quantities of the various grades and counts were not so readily available and were not collected. Some growers who packed for others included this fruit with their own export fruit and consequently these growers' estimates of the quantities and varieties of their fruit were used.

---

(44) See Part VIII.
(45) See page 81 for relevant State awards.
(46) See Appendix D, Table D.LV, page 118 for estimated net income from trading in and packing other growers' fruit.
(47) See page 73.

Local Fresh Market

Information concerning quantities and varieties sold in the local fresh market relied to a certain extent on growers' estimates. In Tasmania interstate sales of apples and pears were normally arranged through the exporter, but in Victoria these sales were usually organised by the grower himself selling through an agent in Sydney or Brisbane. In Victoria substantial sales were made by growers direct to the public, fruiterers and supermarkets either at the roadside, through shop deliveries or from their own truck or market stand at the Victorian Fruit and Vegetable Market in Melbourne. Details of these were obtained from the grower and based on either his own records or his estimates. Sales on the local market in Western Australia were mainly by market agents at the Metropolitan Markets in Perth.

Canneries

Apples included in this outlet type were used for canning as pie pack, processing for baby foods, dehydration and jam. The main criterion for distinguishing between canning grade and juice grade apples is the higher price of canning grade.(48) In Tasmania canneries and other processors recorded quantities delivered in pounds or 50 lb bushels and these were converted into 40 lb bushels for survey purposes.(49) In Victoria canneries and factories recorded deliveries in pounds or tons and these quantities were also converted into 40 lb bushels.

As a cannery outlet was not available for apples in Western Australia, fruit which was not up to standard for export or local fresh consumption could only be disposed of as juicing grade.

Juicing

Juicing grade apples are used primarily for processing into concentrated apple juice which is used by soft drink manufacturers.(50) This grade is also used in the manufacture of apple cider, vinegar and canned apple juice. Factories recorded deliveries in tons, 50 lb bushels or pounds and these were converted to 40 lb bushels for survey purposes.

Grading, Packing and Storage

Farms were considered to grade and pack apples and pears where all or part of the production was packed on the farm into the containers in which the fruit was sold. Containers consisted primarily of cell pack cartons for export fruit, cartons and wooden boxes for interstate fruit and cases, dump boxes and in some instances plastic bags for local market fruit. Only a small proportion of fruit was sold in bulk bins, mainly to wholesale fruit merchants.

---

(48) See page 79.

(49) As discussed earlier the quantity of apples and/or pears in various types of boxes, cartons or cell packs varies, but averages approximately 40 lb.

(50) Soft drink manufacturers receive a sales tax concession when pure fruit juice is used in the manufacture of the product.

Information collected on cool storage related only to cool stores owned and operated by the grower and did not include storage rented or leased from co-operative cool stores, etc.

The requirements covering grading, size, quality, packing and other related matters for export apples and pears shipped from Australia are set out in the Exports (Fresh Fruit) Regulations administered by the Commonwealth Department of Primary Industry.(51)

The various types of containers used for export apples and pears are summarised in Table C.I. The net weight of fruit in each type of container differs with the variety.

Table C.I

CONTAINERS USED FOR EXPORTS OF AUSTRALIAN APPLES AND PEARS

Type of Fruit	Type of Container	Net Weight of Fruit
Apples	Cell pack fibreboard carton	37 - 42 lb
	Tray pack carton	Not less than 36 but usually over 40 lb
	Trays in wooden boxes	
	Standard apple box (American type)	42 - 48 lb
	Australian (or dump) apple box	Slightly less than the standard apple box
	Bulk bins	18 to 25 bushels
Pears		
	Long pear box	41 to 45 lb
	Standard pear box	41 to 45 lb
	Pear carton	39 to 42 lb
	Standard apple box (a)	50 to 54 lb
	Bulk bins	22 bushels

(a) Not used for exports to Europe, the Middle East or North America.

Source: *Australian Apples and Pears - Buyer's Guide to the Principal Varieties*, Department of Trade and Industry, 1969.

(51) A summary of the requirements concerning grades, marking, sizes, etc. for export apples and pears is given in *Australian Apples and Pears: Buyer's Guide to the Principal Varieties*, produced by the Department of Trade and Industry, Commonwealth of Australia, in conjunction with the Department of Primary Industry and the Australian Apple and Pear Board, 1969.

Capital and Investment

The major capital items were valued as follows:

Land

Valuations of land for all survey properties were carried out by valuers of the Reserve Bank of Australia. All land was valued on a freehold basis and consequently rent and interest paid by farmers have been excluded from cash costs. The basis of valuation was fair market price derived from analysis of recent sales and purchases of horticultural land with similar plantings and of similar condition. Valuations included general pasture improvements, irrigation and drainage facilities (excluding irrigation plant), perennial crops, access roads, etc. The house occupied by the farmer was not considered to be part of the farm enterprise and was excluded from the valuation; and any employees' accommodation on the property was included as capital in buildings and structures.

The valuations of properties in metropolitan areas (e.g. Melbourne) reflected land values applicable to subdivision for housing rather than for horticultural use.

All valuations were as at 30 June 1969 and adjustments were made to valuations for prior years to allow for changes in farm area and plantings and removals of perennial crops. No attempt was made to adjust valuations for individual sample farms for any changes in the general level of land values.

Structural Improvements and Plant and Machinery

During field interviews an inventory of depreciable assets was obtained for all survey farms and each item was valued on the basis of present day replacement cost depreciated for age. The value of equipment and structures purchased, built or sold during the four year period was added to or subtracted from farm capital at the midpoint of the relevant financial year (i.e. 31 December) irrespective of the actual date of purchase, construction or sale.

Capital values of those structures included in the valuation for land, i.e. irrigation and drainage facilities, etc., were computed to determine the approximate contribution they made to land values; they were not double-counted in total capital.

Sedan cars were not included in the farm capital inventory unless no alternative vehicle was available for business transport or the car was primarily used for business purposes.

Livestock

Values for cattle, pigs and sheep were estimated from information available from other surveys recently conducted by the Bureau. These values were also used for valuing natural increase and stock on hand in the livestock accounts for the purpose of determining profits and losses on livestock trading enterprises.

The opening values as at 1 July 1965 for the three classes of livestock used as the basis for livestock valuations are given in Table C.II.

Table C.II

OPENING VALUES FOR LIVESTOCK AS AT 1 JULY 1965

Livestock	Tasmania	Victoria South	Victoria North	W.A.
	$	$	$	$
Sheep	6.96	6.39	6.98	7.42
Cattle	87.97	83.57	86.99	85.70
Pigs	23.58	23.58	23.58	23.22

Working Capital

This was assessed as half the annual cash cost for paid labour, contracts, materials and services employed in operating the farm business.

Farm Receipts

Gross farm receipts included proceeds from apples and pears sold for export, for the local fresh market, for canning and for processing into juice, from sales of other fruit, vegetables and other crops, and income from livestock and other miscellaneous income obtained from the operation of the farm.

The basis of gross farm receipts for produce other than apples and pears was net value at farm gate except in some areas where growers packed and/or transported fruit such as plums, citrus, etc. grown on the farm. In such cases the basis of determining returns was net at agents, packing shed or wholesale market and the extra costs were included in farm costs.

For apples and pears, gross farm receipts were calculated as follows:

Exports were valued on an estimated grower's f.o.b. basis (f.o.b. value less exporters' commission) by adding on to the amount received by the grower any off-farm costs such as packing, local freight, cool storage, wharfage and handling charges. These extra costs were also included in farm costs. In actual fact it was not feasible to arrive at a true f.o.b. valuation less exporters' commission for Tasmania and Victoria. In Tasmania the cost of transferring fruit from the wharf shed into the ship's hold and in Victoria from the ship's side into the hold is paid by the shipping company and recovered from the owners of the fruit by including this cost as part of overseas freight charge. Consequently in Tasmania and Victoria the gross value of export apples and pears was an estimated free along side (f.a.s.) value less exporters' commission rather than f.o.b.

Local fresh sales were valued at point of sale, i.e. at the roadside, wholesale market, etc., less any commission paid to wholesale agents.

Canning and juicing grades were valued at cannery or factory for fruit delivered by the grower; otherwise they were valued at growers' gate.

As data concerning local sales were normally obtained from the grower, values were given on a crop basis irrespective of the dates on which fruit was sold. Exports were also valued on a crop year basis as, in many cases, preparation of tax returns by accountants was delayed until all sales information for export fruit was available. Gross receipts for export apples and pears also include devaluation compensation(52) payable for fruit exported for particular crop years and insurance payments made for fruit carried by ships trapped in the Suez Canal.

Particulars were also obtained of off-farm income derived from salaries and wages and other sources including bank interest, dividends, rent from other property, etc. Operators with their own packing and cool storage facilities frequently handled some production for other growers and the direct costs, i.e. for materials and labour, associated with handling this fruit, was deducted from the income received and the profit classified as other non-farm income.

Apple and Pear Prices

Prices received by growers for apples and pears during the survey period are discussed below by type of major outlet.

Exports

Growers can market their export fruit by a number of methods, the principal ones being:

Forward sale - sale to a licensed exporter on f.o.b. terms usually based on the Australian currency equivalent of selling prices, for which the minimum price for each variety is set by the Apple and Pear Board with minor variations between markets, less ocean freight cost and a handling margin. This means that ownership of the fruit passes from the grower to the exporter prior to sale.

Guaranteed advance (G.A.) consignment - the importer provides an advance payment on shipment which is in effect a guaranteed minimum price to the grower, the exporter retaining sufficient of the advance to cover the cost of ocean freight.

Free consignment - the grower through a licensed exporter has the fruit sold on his behalf by an importer at the best market price. The fruit remains the property of the grower until sold.

Sales afloat - firm sales between the points of loading and discharge, realisation depending on the expected market situation at the estimated time of arrival and discharge of the ship.(53)

---

(52) See footnote 27 on page 35 .

(53) Exporters can purchase from growers on f.o.b. terms and dispose of the fruit by the last three methods outlined. The grower ceases to be the owner of the fruit when it is loaded.

The only price series available for the survey period is the authorised base apple prices for forward sales which were set at levels designed to maintain the return to the grower taking into account any changes in the overseas freight rate, devaluation of sterling and other factors. Details of the authorised base prices for some of the main varieties were as shown in Table C.III.

Table C.III

AUTHORISED BASE APPLE PRICES: TASMANIA AND WESTERN AUSTRALIA

1966 to 1969

(Preferred Counts, C & F sterling equivalent for cell pack: United Kingdom)

Variety	1966	1967	1968	1969
	s d	s d	s d	s d
Tasmania				
Sturmer	37/6	34/6	46/4	46/-
Jonathan	36/-	34/6	46/4	46/-
Democrat	38/6	36/6	47/3	46/6
Granny Smith	43/6	41/-	51/-	51/-
Western Australia				
Granny Smith	44/6	43/3	52/-	51/-

Source: Australian Apple and Pear Board: *Annual Report*, 1968-69.

The authorised base apple prices as shown in Table C.III applied only to sales forward and, as indicated in Table C.IV, the proportion of Australian apples and pears sold forward to the United Kingdom declined considerably in the four years covered by the survey.

Local Fresh Market

Prices for apples and pears in the local fresh market in all three survey States were determined by disposing of fruit on a free market. Growers normally sold their produce through market agents in the cities (including interstate sales) or by private treaty to supermarkets, greengrocers and to the public at the roadside or in metropolitan markets.

Table C.IV

PROPORTIONS OF AUSTRALIAN APPLES AND PEARS EXPORTED TO THE UNITED KINGDOM: BY TYPE OF SALE

Year	Sold Forward	Sold Afloat	Free Consignment	Guaranteed Advance
	%	%	%	%
Apples				
1966	49	16	20	15
1967	18	13	17	52
1968	10	7	18	65
1969	26	10	16	48
Pears				
1966	31	10	16	17
1967	14	16	43	27
1968	5	8	49	38
1969	19	12	27	42

Source: Australian Apple and Pear Board, op. cit., 1969-70.

There have been no real minimum price arrangements by apple and pear growers. The Orchardists' and Fruit Cool Stores Association of Victoria recommends market prices by major variety, grade and count. The Western Australian Fruit Growers' Association Inc. initiated a voluntary minimum price scheme in 1969, but this operated for only a short time because of lack of support by growers.(54) The Apple Sale Advisory Committee sets standards for sizes and quality of apples and pears permitted for sale in Western Australia and employs inspectors to inspect fruit at the metropolitan markets, shops, supermarkets, etc.(55)

During the period of the survey, growers' organisations in Tasmania had no recommended minimum prices for local sales, although in 1970 the State Fruit Board recommended to growers that a price of not less than $1 per case by adopted generally for fruit sold at the roadside.(56)

(54) Western Australian Fruitgrowers' Association Inc., *Annual Report and Proceedings*, Annual Conference, 1969.

(55) In 1969 the Apple Sales Advisory Committee consisted of four growers, two from the South West and one each from the hills and great southern areas, together with a market agent, an exporters, a consumers' representative and a representative of the Department of Agriculture as Chairman. Growers pay a compulsory levy of 2c per bushel of apples and pears sold in the local market. This money is paid into the Fruit Growing Industry Trust Fund, which in turn is the source of funds for the Apple Sales Advisory Committee.

(56) *The Tasmanian Fruitgrower and Farmer*, March 1970.

Canning and Juicing Grade Apples

Table C.V sets out the prices paid to growers for canning and juicing grade apples in the four years of the survey.

Table C.V

PRICES RECEIVED FOR CANNING AND JUICING GRADE APPLES

1965-66 to 1968-69

State	Basis of Payment	Unit	1965-66	1966-67	1967-68	1968-69
Canning Grade						
Tasmania	per 50 lb bushel at factory	cents	60 and 70	55 and 70	55 and 75	60 and 80
Victoria	per ton at factory or cannery	$	45 - 65	45 - 65	45 - 65	45 - 65
Juicing Grade						
Tasmania	per 50 lb bushel at grower's gate	cents	30	30	30	45
Victoria	per ton at factory	$	28	27	27, but higher when in short supply	33.72
Western Australia	per ton at factory	"	22.50	22.50	22.50	32.50

Prices for canning and juicing grade apples in Tasmania are fixed each year by the State Fruit Board after discussions with the Tasmanian Fruit Processors' Association. The different prices given for canning grade apples relate to different classes according to size, variety and quality as specified by the Board. The 'at factory' price provides for the first 5c of freight to be on grower's account, the second 5c on the processor's account, any further freight to be shared equally.

In Victoria prices for canning grade apples varied because of the different qualities and uses covered by this 'canning grade' classification. Two canneries in the Goulburn Valley canned apples in the last three years of the survey, i.e. 1966-67, 1967-68 and 1968-69, and paid $65 per ton at cannery for Granny Smith apples. In Victoria South canners and processors paid varying prices depending on variety and quality and these normally ranged from $45 per ton for jam to $64 per ton for canning as pie pack.

The higher rate of payment for juicing apples in Western Australia in 1969 resulted from negotiations between the Factory Committee of the Western Australian Fruit Growers' Association and the processor. Before that year freight costs had considerably reduced the proportion returned to the grower from juicing grade apples.

Farm Costs

Information on cash operating costs was obtained from the farmers' accountants and from packing shed operators and/or exporters. The grower's assistance was sought when further details were required.

Costs relating to capital development were as far as possible excluded from operating expenses. These development costs were incorporated into capital and reflected in the level of capital valuations and in depreciation. Similarly, private expenditures unrelated to the farm business were excluded. Rebates and refunds, which could be identified, were deducted from the appropriate cost item and the remaining rebates and refunds were deducted from cash costs.

Labour: The amounts actually paid for hired, either permanent or casual, and contract labour were included as cash costs. Workers hired at piece-work rates were classified as 'casual' labour, and 'contract' labour was defined as such where labour only was supplied without materials or plant.

For the operator, his family, partners, managers and sharefarmers, labour costs were imputed and based on the total number of weeks worked in the farm enterprise excluding development work. The average weekly wage rates used to impute labour costs are set out in Table C.VI. These wage rates were derived from the various State awards for employees in the apple and pear industry. These were as follows:

Tasmania	-	*Determination of the Horticulturalists' Wages Board*
Victoria	-	*Determination of the Fruit Growers' Board*
Western Australia	-	*State Farm Workers' Award.*

As changes occurred in award rates in some years, the rates adopted were weighted for each survey year in accordance with the number of weeks for which each particular rate applied.

The amount of whole-farm labour was calculated on the basis of a 50-week year, the weekly wage rates being multiplied by 1.04 to allow for two weeks holiday pay. Operator's labour was costed at leading hand rates, other adult males at the general hand rates for permanents, and females and junior workers at the appropriate percentages applying in the awards.

Members of the operator's family, partners and sharefarmers were costed at their appropriate award rates, any actual cash payments being disregarded as these may bear little relationship to actual work input. Each farm was charged with the labour cost of one full time operator, except on farms where the operator spent part of his time off the farm or on activities such as buying and selling fruit or packing other growers' fruit. In such

Table C.VI

WEEKLY AWARD RATES FOR APPLES AND PEARS; VICTORIA, TASMANIA AND WESTERN AUSTRALIA

1965-66 to 1968-69

Classification and Age	Victoria				Tasmania(a)				Western Australia(a)			
	65-66	66-67	67-68	68-69	65-66	66-67	67-68	68-69	65-66	66-67	67-68	68-69
	$	$	$	$	$	$	$	$	$	$	$	$
MALES												
Adult												
Leading hand	37.60	39.60	41.30	42.65	40.00	42.00	43.80	45.15	34.15	35.80	36.40	37.75
General hand	36.00	38.00	39.60	40.95	35.70	37.70	39.10	40.45	32.58	34.10	34.70	36.05
Junior												
20 but under 21	31.67	33.44	34.84	36.04	32.12	33.93	35.18	36.40	29.30	30.68	31.23	32.44
19 " " 20	26.64	28.11	29.30	30.31	26.78	28.28	29.33	30.34	24.42	25.58	26.03	27.04
18 " " 19	23.04	24.32	23.35	26.21	23.20	24.51	25.41	25.30	21.16	22.16	22.56	23.43
17 " " 18	19.44	20.52	21.38	22.11	21.42	22.62	23.46	24.27	19.54	20.46	20.82	21.62
16 " " 17	17.64	18.61	19.40	20.07	17.86	18.86	19.55	20.23	16.28	17.05	17.36	18.03
15 " " 16	15.84	16.72	17.42	18.02	16.07	16.96	17.60	18.20	14.65	15.35	15.61	16.22
FEMALES												
Adult	27.00	28.50	29.67	30.71	)							
Junior					)							
20 but under 21	23.76	25.09	26.13	27.03	) 26.78	28.28	29.33	30.34	24.42	25.58	26.03	27.04
19 " " 20	19.98	21.09	21.97	22.73	)							
18 " " 19	17.28	18.24	19.01	19.66	)							
17 " " 18	14.59	15.39	16.04	16.59	21.42	22.62	23.46	24.27	19.54	20.46	20.82	21.62
16 " " 17	13.23	13.96	14.56	15.05	17.86	18.86	19.55	20.23	16.28	17.05	17.36	18.03
15 " " 16	11.87	12.54	13.07	13.52	16.07	16.96	17.60	18.20	14.65	15.35	15.61	16.22

(a) Federal percentage rates apply for junior males, adult females and junior females.

cases the number of weeks was adjusted and the imputed cost of the operator's labour reduced accordingly. Reductions were similarly made for time spent by the operator in farm development work.

Interest: The rate of interest on capital was derived from average bank overdraft rates applying to primary producers in each year of the survey.

The relevant rates used were:

Year	*Percentage*
1965-66	5.875
1966-67	5.875
1967-68	6.000
1968-69	6.000

When calculating the interest charge, the above rates were applied to the average of the opening and closing values of total capital (depreciated, where applicable) for each survey year. Interest on capital was calculated irrespective of the owner's equity and consequently interest paid, although included in the cost table, was not counted as a cash cost in determining net farm income.(57)

Depreciation was imputed by the straight line method, based on the present day replacement cost of the particular items. The rates applied were the standard rates set out in *Income Tax Order 1217, 1960 Revision*, checked for amendments up to the end of the survey period. For items purchased or sold during the survey period, depreciation was assessed as if the transaction took place at the midpoint of the financial year.

Materials: Costs of materials were obtained from tax returns supplied by growers although, in some instances, purchases of packing materials had been treated as contra items against value of fruit sold through an exporter. Where this occurred the cost of the materials was included in farm costs and the same amounts added to the appropriate receipt items. Materials such as sprays and fertilisers are not necessarily used in the year of purchase. The same situation can occur with packing materials but, based on information obtained from growers concerning quantities packed on the farm, adjustments were made to cost of packing materials and cases in each year so that it related to quantity packed. The cost item 'packing materials and cases' relates only to materials used for packing apples and pears; materials such as cases, bags, woolpacks, etc. used for other produce such as other fruit, potatoes, wool, etc. are included in the cost item 'other miscellaneous materials'.

Services: As discussed earlier under Farm Receipts, growers received payment for export fruit after the deduction of local freight, cool storage (pre-cooling of fruit before loading into the ship), handling and marketing charges and off-farm packing charges. The value of export fruit was adjusted to a growers f.o.b. value by adding the value of these off-farm charges to the net payment to the grower. The same amounts for these various charges were added to the costs extracted from the tax return.

---

(57) See page 86.

The following service costs relate to apples and pears only:

- packing charges
- local freight and cartage
- cool storage charges (export and local market)
- handling charges (wharfage, shipping fee, etc. for export fruit)
- marketing charges (inspection and levy on export fruit, levy on fruit sold in local fresh market).

Any service charges applicable to other farm produce were included in 'other miscellaneous services'.

Cash costs include payments made for materials, services and hired labour, including contract labour. Actual payments made for family labour are excluded.

Costs of grading, packing and marketing apples and pears: The total cost of presenting the harvested product to the ship's side for exported fruit and to the point of sale for fruit sold on the local market is the sum of the following on-farm and off-farm costs:

Cash Costs (58)

- packing materials and cases
- packing charges
- local freight and cartage
- cool storage charges
- handling charges
- marketing charges
- hired labour.

Imputed Costs

- family labour
- operator's labour
- depreciation on packing and cool storage equipment and structures
- interest on capital invested in packing and cool storage equipment and structures.

The net value of apples and pears sold for export and/or the local fresh fruit market (i.e. quantity 'packed out') is equal to the gross value of apples and pears sold to these two outlet categories less the estimated cost of grading, packing and marketing. This is equivalent to the net value of the fruit after harvesting.

---

(58) These are understated to some extent as part of the total enterprise costs of electricity and motor fuel usually relate to the packing and cartage of apples and pears.

Table C.VII

ESTIMATED ANNUAL AVERAGE CHARGES FOR PACKING AND MARKETING OF EXPORT APPLES AND PEARS: BY SURVEY REGIONS
1965-66 to 1968-69
(Per Bushel)

Survey Region	Year	Packing Materials and Cases	Packing Charges	Local Freight	Cool Storage	Handling Charges	Marketing Charges(a)
		$	$	$	$	$	$
Tasmania South	1965-66	0.71	1.07				
	1966-67	0.73	1.09	0.15			
	1967-68	0.75	1.11		0.15	0.10	0.04
	1968-69	0.77	1.13	0.17			
Tasmania North	1965-66	0.70	1.06				
	1966-67	0.70	1.10	0.12-0.15		0.08	
	1967-68	0.70	1.10		0.15		0.04
	1968-69	0.77	1.12	0.13-0.17		0.09	
Victoria South	1965-66					0.06	
	1966-67	0.70	1.10	0.10	0.30		0.07
	1967-68						
	1968-69					0.08	
Victoria North	1965-66					0.06	
	1966-67	0.80	1.20	0.17	0.30		0.07
	1967-68					0.08	
	1968-69						
Western Australia	1965-66		1.15		0.18		
	1966-67		1.18				
	1967-68	0.75-0.80	1.23	0.13-0.25	0.20	0.08	0.04
	1968-69		1.28			(0.095 in Albany)	

(a) Levies to growers' organisations or local marketing authorities not included.

Source: Derived from information obtained from exporters and packers.

Table C.VII sets out the approximate costs of materials and services applying to export apples and pears. The costs given in the table are presented to give an indication of the levels of various charges and costs and not with the object of enumerating those which applied to all situations.

Packing materials and cases: The figures shown are the average costs of cells and cartons, the unit cost of which decreased with the increased quantity purchased. The unit cost of cells increased with the count or number of apples for which the container was designed. The cost of wooden boxes for apples and pears plus the cost of liners and paper was generally 10c to 15c less than the cost of cells or cartons.

Growers who packed apples and pears in their own shed provided estimates of their own packing costs and, although estimates varied, the unit cost of cells and cartons approximated those given in the table. Growers in all survey regions, except Western Australia, sold apples and pears interstate; and most of the fruit was packed in containers similar to those used for export. Some growers in Victoria North used returnable wooden boxes for interstate sales and consequently the cost of direct materials was only 20c per bushel for liners and paper. Many growers in the two Victorian survey regions who sold apples and pears at the Victoria Fruit and Vegetable Market in Melbourne participated in a pool system for wooden boxes which,being returnable, involved them only in the cost of repairs and replacements and approximately 10c per bushel for paper.

Packing charges: The charges presented in Table C.VII relate primarily to apples; these varied to some extent between different packing sheds and include the profit margin. Packing charges for pears in Tasmania were approximately 15c per bushel less than for apples. In Victoria North some packers charged the same rate for pears as for apples although some charged more and others less.

Local freight: The local freight charges normally consisted of two parts, the first being road or rail freight from packing sheds to cool store at the port and the second being freight from cool store to the wharf. Some growers transported their own fruit and consequently did not incur the full rate of local freight; the remaining cost of this service was included in farm costs such as fuel and oil, wages, etc.

Cool storage: The rate per bushel given in the table is the standard charge applied to the pre-cooling of export apples and pears before loading. Some growers with their own cool stores did not have to pay this pre-cooling charge, but generally it applied to all export fruit.

The cost item 'cool storage' in the table of cash costs(59) also includes payments made by growers to cool stores for storage of apples and pears awaiting sale on the local markets.

Handling charges includes wharfage and shipping fees.

---

(59) See Appendix D, Table D.LIX.

Marketing charges consisted of two types for survey purposes - those applying to export apples and pears and those applying to local market apples and pears. Charges relating to export fruit included the levy charged under the *Apple and Pear Export Charges Act* which provides revenue for the operations of the Australian Apple and Pear Board. The rates applying in the survey period were 2.5c per bushel of export apples and pears in 1965-66, 1966-67 and 1967-68; the rate was increased to 3.5c per bushel for the 1969 export season. The 4c per bushel marketing charge on export fruit for Tasmania South is an approximation of the following:

	1965-66 to 1967-68 *cents*	1968-69 *cents*
Apple and Pear Board levy	2.5	3.5
Insurance (packing shed to wharf)	0.4	0.4
Pallet hire	0.7	0.7
	3.6	4.6

Grading and packing labour: The cost of grading and packing labour in commercial packing sheds was included in the total packing charge. Estimates given by some packers ranged from 12c to 30c per bushel for grading and packing labour.

Growers packing in their own sheds gave estimates of from 10c to 40c per bushel as the cost of labour in grading and packing of apples and pears. The lower cost tended to relate to fruit for the local fresh market. Overall the most common estimate of labour cost was 20c per bushel, excluding the grower's own time given to this work and supervision in the packing shed.

Income Structure

The net income performance of the farm can be determined from several income measures:

Net cash income derived by subtracting all cash costs from total farm receipts. As payments in respect of interest and rent have been excluded from the analysis, allowance would have to be made for any such payments out of net cash income.

Farm income obtained by reducing net cash income by the amount charged for depreciation, and is the amount earned by the farm as a family concern.

Net farm income determined by deducting the imputed cost of family labour from farm income. It is an important measure of the economic situation of farm operators being the residual return to the operator for his labour and management and for the investment of capital.

Farmer's net income ascertained by adding off-farm income to net farm income, which represents the total income obtained by the farmer from all sources.

Appendix D

TABULATED RESULTS OF

FARM SURVEY

1965-66 to 1968-69

By Survey Regions and States

Table D.I

DISTRIBUTION OF FARMS: BY TYPE OF LAND OWNERSHIP

As at 30 June 1969

Type of Ownership	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	%	%	%	%	%	%	%	%
Sole owner	55	36	51	52	30	44	42	46
Partnership -								
Husband/wife	19	39	23	17	15	16	24	20
Other family	15	15	15	29	43	34	27	26
Non-family	-	-	-	-	6	2	-	1
Company -								
Registered private	6	10	7	1	5	3	7	5
Public	-	-	-	-	1	-	-	-
Estate	4	-	3	-	-	-	-	1
Other	1	-	1	1	-	1	-	1
Total farms	100	100	100	100	100	100	100	100

Table D.II

DISTRIBUTION OF FARMS: BY TYPE OF MANAGEMENT

As at 30 June 1969

Type of Management	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	%	%	%	%	%	%	%	%
Sole operator	77	68	75	60	64	61	59	65
Partnership -								
Husband/wife	5	13	6	8	4	7	9	7
Other family	17	18	18	32	23	29	31	26
Non-family	-	-	-	-	6	2	-	1
Partner	-	1	-	-	-	-	1	-
Trustee	1	-	1	-	-	-	-	-
Paid manager	-	-	-	-	3	1	-	1
Total farms	100	100	100	100	100	100	100	100

Table D.III

LAND USE

Four Year Farm Averages

Land Use	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	acres	acres	acres	acres	acres	acres	acres	acres
Apples	20.8	22.0	21.1	22.8	12.5	19.0	19.0	19.7
Pears	1.5	4.6	2.1	2.3	13.2	6.3	1.1	3.6
Total	22.3	26.6	23.2	25.1	25.7	25.3	20.1	23.3
Other tree fruits	0.1	0.8	0.3	2.0	28.9	12.0	2.2	5.6
Other fruit and vegetables	0.6	0.0	0.4	0.0	0.9	0.3	7.2	2.1
Crops	0.3	0.6	0.4	0.0	2.7	1.0	12.2	3.7
Pasture and grazing	53.0	82.3	59.0	27.3	51.7	36.4	402.2	139.6
Buildings, channels and drains	1.7	4.0	2.2	3.9	4.4	4.1	3.7	3.4
Waste, fallow, etc.	83.2	79.4	82.3	13.5	35.7	21.7	139.2	72.3
Total farm area	161.2	192.9	167.6	71.4	149.1	100.2	586.7	249.7
Area intercropped	0.0	0.8	0.2	0.4	0.9	0.6	0.1	0.3

Table D.IV

PERCENTAGE DISTRIBUTION OF FARMS: BY TOTAL FARM AREA

Four Year Averages

Range of Total Farm Area	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
Acres	%	%	%	%	%	%	%	%
Under 20	-	-	-	8	-	5	-	2
20 - 39	8	12	8	45	26	38	4	19
40 - 59	24	4	20	8	17	11	5	13
60 - 79	11	9	11	8	10	9	7	9
80 - 99	11	4	10	13	14	13	-	9
100 - 149	6	20	9	7	11	8	2	7
150 - 199	5	8	6	10	6	8	-	5
200 - 249	13	28	16	-	5	2	5	7
250 - 299	10	-	8	-	1	1	7	4
300 - 499	7	10	8	-	8	3	35	13
500 - 999	4	5	4	1	1	1	23	8
1,000 and over	1	-	-	-	1	1	12	4
Total farms	100	100	100	100	100	100	100	100

Table D.V

DISTRIBUTION OF FARMS; BY PROPORTION OF APPLE AND PEAR ACREAGE PLANTED TO APPLES

Four Year Averages

Proportion of Acreage Planted to Apples	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
%	%	%	%	%	%	%	%	%
0 - 9.9	-	-	-	4	-	2	-	1
10 - 19.9	-	-	-	-	23	8	-	3
20 - 29.9	-	-	-	-	27	10	-	4
30 - 39.9	-	-	-	-	4	1	-	1
40 - 49.9	1	-	1	4	3	4	-	2
50 - 59.9	-	4	1	-	5	2	-	1
60 - 69.9	4	6	4	-	8	3	4	3
70 - 79.9	3	18	6	7	7	7	-	5
80 - 89.9	10	33	15	9	4	7	16	12
90 - 99.9	40	35	39	22	13	19	18	25
100	42	4	34	54	6	37	62	43
Total farms	100	100	100	100	100	100	100	100

Table D.VI

COMPOSITION OF APPLE ACREAGE; BY MAJOR VARIETIES

Four Year Averages

Variety	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	%	%	%	%	%	%	%	%
Cleopatra	9.3	2.5	7.8	0	-	-	6.2	4.3
Crofton	5.4	7.4	5.8	1.0	0.2	0.8	-	2.3
Delicious	4.7	6.3	5.1	5.4	10.2	6.5	2.9	5.1
G. Delicious	5.7	4.7	5.5	5.1	5.9	5.3	2.6	4.7
R. Delicious	2.2	3.8	2.6	1.9	0.8	1.7	3.1	2.3
Democrat	16.7	7.4	14.7	2.6	3.7	2.9	1.0	6.5
Granny Smith	15.5	15.5	15.5	19.3	41.3	24.6	65.4	31.8
Jonathan	14.4	22.5	16.1	46.5	19.5	39.9	8.7	23.7
Sturmer	14.8	17.2	15.3	-	-	-	-	5.3
Other	11.3	12.7	11.6	18.2	18.3	18.3	10.1	14.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table D.VII

COMPOSITION OF PEAR ACREAGE; BY MAJOR VARIETIES

Four Year Averages

Variety	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	%	%	%	%	%	%	%	%
Beurre Bosc	7.7	14.6	10.7	12.0	3.8	5.7	-	6.2
Comice	10.0	14.2	11.8	0.1	-	-	10.2	3.1
Glou Morceau	1.8	11.3	5.9	-	-	-	-	1.1
Josephine	5.2	2.8	4.2	0.8	12.4	9.8	4.9	8.3
Packham's Triumph	46.6	30.0	39.4	54.2	70.4	66.6	55.2	60.5
Winter Cole	27.9	21.5	25.2	24.3	1.2	6.5	-	9.6
Winter Nelis	-	2.3	1.0	7.5	10.3	9.6	2.3	7.4
Other	0.8	3.3	1.8	1.1	1.9	1.8	27.4	3.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table D.VIII

COMPOSITION OF NEW AND REPLACEMENT PLANTINGS:
BY MAJOR APPLE VARIETY

Four Years Ended 30 June 1969

Variety	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	%	%	%	%	%	%	%	%
Cleopatra	1.0	-	0.5	-	-	-	-	0.2
Crofton	10.2	16.6	13.2	4.2	-	2.8	-	6.0
Delicious	2.3	6.0	4.0	1.6	4.6	2.6	2.2	3.0
G. Delicious	21.8	12.6	17.6	17.5	12.8	15.9	0.6	12.5
R. Delicious	13.0	13.3	13.1	9.1	1.6	6.6	3.2	8.2
Democrat	14.3	17.7	15.8	-	-	-	-	5.9
Granny Smith	33.7	25.0	29.8	36.3	81.0	51.1	85.8	52.3
Jonathan	1.8	0.3	1.1	28.0	-	18.8	1.2	7.4
Sturmer	1.8	1.2	1.5	-	-	-	-	0.6
Other	0.1	7.3	3.4	3.3	-	2.2	7.0	3.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table D.IX

DISTRIBUTION OF FARMS: BY ACREAGE OF APPLE AND PEAR TREES

Four Year Averages

Area of Apples and Pears	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
acres	%	%	%	%	%	%	%	%
10 - 14.9	45	33	43	28	34	30	45	38
15 - 19.9	18	7	16	26	19	23	20	20
20 - 24.9	6	19	9	10	17	12	12	11
25 - 29.9	7	8	7	9	6	8	6	7
30 - 34.9	10	14	11	9	3	7	11	9
35 - 39.9	5	6	5	3	7	5	1	4
40 - 44.9	2	3	2	1	3	2	2	2
45 - 49.9	1	-	1	3	3	3	1	2
50 - 74.9	4	7	4	9	3	7	1	5
75 - 99.9	1	3	1	2	4	3	1	2
100 - 179.9(a)	1	-	1	-	1	-	-	-
Total Farms	100	100	100	100	100	100	100	100

(a) Farms with 180 acres or more of apples and pears were considered too large to be representative and were excluded from the population from which the sample was drawn.

Table D.X

DISTRIBUTION OF APPLE ACREAGES: BY PLANTING RATE

As at 30 June 1969

Planting Rate per acre	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
trees	%	%	%	%	%	%	%	%
Under 100	-	5	1	6	16	8	14	7
100 - 199	-	39	9	79	49	72	70	49
120 - 139	3	30	9	13	30	17	14	13
140 - 159	1	10	3	1	1	1	-	1
160 - 179	72	13	58	-	1	-	1	22
180 - 199	10	1	8	-	-	-	-	3
200 - 299	12	2	10	1	3	2	1	4
300 and over	2	-	2	-	-	-	-	1
Total	100	100	100	100	100	100	100	100

Table D.XI

DISTRIBUTION OF PEAR ACREAGES: BY PLANTING RATE

At at 30 June 1969

Planting Rate per Acre	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
trees	%	%	%	%	%	%	%	%
Under 100	-	3	1	-	-	-	35	3
100 - 119	1	42	19	88	43	53	54	46
120 - 139	5	29	16	11	56	46	9	37
140 - 159	2	6	4	1	-	-	-	1
160 - 179	67	20	46	-	-	-	-	10
180 - 199	16	-	9	-	-	-	-	2
200 - 299	9	-	5	-	1	1	2	1
300 and over	-	-	-	-	-	-	-	-
Total	100	100	100	100	100	100	100	100

Table D.XII

DISTRIBUTION OF APPLE ACREAGES: BY AGE OF TREE

As at 30 June 1969

Age	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
years	%	%	%	%	%	%	%	%
1	1	3	1	2	1	2	3	2
2	1	4	2	1	5	2	1	1
3	3	8	4	3	4	3	4	4
4	2	5	3	2	1	2	3	3
5	3	1	2	4	2	3	4	3
6	2	2	2	5	5	5	5	4
7	2	2	2	1	1	1	3	2
8	3	2	3	2	1	2	5	3
9	1	-	1	1	2	2	8	3
10	1	2	1	4	7	5	4	3
11 - 14	1	2	1	5	15	7	15	8
15 - 19	2	1	2	7	9	7	9	6
20 - 24	4	3	4	11	3	9	5	6
25 - 29	2	1	2	3	7	4	4	3
30 - 34	12	3	10	10	9	10	11	10
35 - 39	7	-	5	6	2	5	5	5
40 - 44	11	11	11	11	14	11	2	9
45 - 49	1	8	3	2	8	4	2	3
50 - 59	25	35	27	11	3	9	2	13
60 and over	16	7	14	9	1	7	5	9
Total	100	100	100	100	100	100	100	100

Table D. XIII

DISTRIBUTION OF PEAR ACREAGES: BY AGE OF TREE

As at 30 June 1969

Age	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
years	%	%	%	%	%	%	%	%
1	1	-	1	1	-	-	2	1
2	1	-	1	3	1	2	1	1
3	8	-	4	-	-	-	12	2
4	4	3	4	-	-	-	6	1
5	1	2	1	-	5	4	6	4
6	1	2	1	3	2	2	7	2
7	8	-	5	-	1	1	7	2
8	-	1	-	-	3	2	3	2
9	-	2	1	-	-	-	1	-
10	1	-	-	-	3	2	4	2
11 - 14	5	-	3	15	23	22	2	16
15 - 19	6	-	3	1	5	4	7	4
20 - 24	3	1	2	-	13	10	5	8
25 - 29	-	-	-	10	13	13	1	9
30 - 34	8	-	4	23	10	13	3	10
35 - 39	13	-	8	1	13	10	3	10
40 - 44	14	17	16	13	3	6	6	8
45 - 49	-	10	4	9	2	3	-	3
50 - 59	13	57	32	19	3	6	2	11
60 and over	13	5	10	2	-	-	22	4
Total	100	100	100	100	100	100	100	100

Table D.XIV

BEARING AND HARVESTED ACREAGES OF APPLES AND PEARS

Four Year Farm Averages

Type of Fruit	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	acres	acres	acres	acres	acres	acres	acres	acres
Apples -								
Bearing	18.2	17.5	18.0	19.0	10.5	15.8	14.4	16.2
Harvested	17.9	17.5	17.8	18.8	10.5	15.7	14.6	16.1
Pears -								
Bearing	1.2	4.2	1.8	2.2	12.1	5.9	0.7	3.2
Harvested	1.2	4.1	1.8	2.2	12.0	5.8	0.7	3.2

Table D.XV

PROPORTION OF TOTAL APPLE AND PEAR ACREAGES OF NON-BEARING AGE

Annually and Four Year Averages

Year	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	%	%	%	%	%	%	%	%
Apples								
1965-66	11	13	11	17	14	16	31	18
1966-67	14	21	16	18	14	17	26	19
1967-68	14	24	16	16	17	16	21	17
1968-69	12	23	15	17	18	17	19	17
Four year average	13	20	15	17	16	17	25	18
Pears								
1965-66	15	8	12	4	8	8	34	10
1966-67	23	6	15	4	9	8	43	12
1967-68	23	7	16	5	7	7	40	11
1968-69	16	8	12	7	8	8	35	11
Four year average	19	7	14	5	8	8	38	11

Table D.XVI

PROPORTION OF TOTAL ACREAGES OF NON-BEARING AGE:

BY MAJOR APPLE VARIETIES

Four Year Averages

Variety	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	%	%	%	%	%	%	%	%
Cleopatra	1.2	0.0	0.9	-	-	-	0.0	0.2
Crofton	20.8	45.6	28.5	72.5	95.6	74.4	-	34.6
Delicious	15.5	20.0	16.9	7.0	12.7	8.9	29.9	14.9
G. Delicious	31.0	52.2	34.9	38.2	43.0	39.7	28.9	36.3
R. Delicious	42.9	78.4	55.1	30.8	19.8	29.7	18.0	36.5
Democrat	14.2	48.0	18.0	6.4	0.0	4.4	0.0	14.9
Granny Smith	21.6	36.7	25.0	25.5	29.4	27.1	21.7	23.9
Jonathan	3.8	0.9	2.9	15.6	2.8	14.1	12.2	11.3
Sturmer	1.7	1.7	1.7	0.0	-	0.0	-	1.3
Other	7.7	14.1	9.3	2.7	2.8	2.7	19.7	8.1
All varieties	12.4	22.8	14.8	16.8	18.1	17.1	19.4	16.9

Table D.XVII

PROPORTION OF TOTAL ACREAGES OF NON-BEARING AGE: BY MAJOR PEAR VARIETIES

Four Year Averages

Variety	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	%	%	%	%	%	%	%	%
Beurre Bosc	32.3	0.0	13.0	16.8	38.3	28.9	-	22.9
Comice	27.1	0.0	13.0	0.0	-	0.0	0.1	9.4
Glou Morceau	0.0	2.9	2.4	-	-	-	-	2.4
Josephine	0.0	0.0	0.0	0.0	0.1	0.1	-	0.1
Packham's Triumph	23.4	20.7	22.5	7.1	8.2	8.0	43.6	12.6
Winter Cole	0.0	0.0	0.0	3.3	53.0	10.1	-	5.2
Winter Nelis	-	0.0	0.0	5.6	1.9	2.5	16.6	2.8
Other	-	0.0	0.0	0.0	0.0	0.0	31.0	25.4
All varieties	15.9	7.5	12.2	6.9	8.1	7.8	34.5	10.8

Table D.XVIII

NUMBER OF APPLE AND PEAR TREES PER ACRE, NUMBER OF TREES AND NUMBER OF BEARING TREES

Four Year Farm Averages

Item	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	no.	no.	no.	no.	no.	no.	no.	no.
Trees per acre								
- apples	175	130	165	106	111	107	108	127
- pears	170	127	153	110	118	117	100	122
Trees per farm								
- apples	3,636	2,853	3,478	2,428	1,383	2,041	2,052	2,511
- pears	255	584	321	254	1,562	739	110	438
Bearing trees per farm								
- apples	3,151	2,240	2,966	2,018	1,124	1,687	1,527	2,061
- pears	206	545	275	240	1,428	680	63	386

Table D.XIX

LAND USE: BY TYPE OF IRRIGATION

Four Year Farm Averages

Type of Irrigation	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	acres	acres	acres	acres	acres	acres	acres	acres
Apples								
Furrow or flood	0.5	-	0.4	2.4	7.3	4.2	-	1.9
Sprinkler								
- ground	9.6	4.8	8.7	4.2	0.8	2.9	8.2	6.2
- overhead	1.8	-	1.4	0.9	-	0.6	2.3	1.3
Other(a)	-	0.6	0.1	5.8	0.5	3.8	0.1	1.7
Total apples irrigated	11.9	5.4	10.6	13.3	8.6	11.5	10.6	11.1
Pears								
Furrow or flood	0.1	-	0.1	0.4	10.9	4.3	-	1.8
Sprinkler								
- ground	0.4	0.7	0.5	0.6	1.4	0.9	0.6	0.7
- overhead	0.1	-	0.1	-	-	-	-	0.1
Other(a)	-	0.1	-	0.8	0.1	0.6	-	0.2
Total pears irrigated	0.6	0.8	0.7	1.8	12.4	5.8	0.6	2.8
Other tree fruits, pastures etc.								
Furrow or flood	0.1	-	-	0.1	49.5	18.4	0.1	7.6
Sprinkler								
- ground	0.2	0.3	0.2	0.5	4.3	1.9	4.0	1.9
- overhead	0.2	-	0.1	0.1	-	0.1	0.3	0.1
Other(a)	-	-	-	0.6	1.2	0.8	-	0.3
Total other tree fruits, etc. irrigated	0.5	0.3	0.3	1.3	55.0	21.2	4.4	9.9
Total area irrigated	13.0	6.5	11.6	16.4	76.0	38.5	15.6	23.8

(a) Mainly basin irrigation and also trickle irrigation which was used by some growers.

Table D.XX

PROPORTION OF APPLE AND PEAR ACREAGE IRRIGATED

Four Year Averages

Type of Fruit	Region							
	Tasmania			Victoria			W.A.	Three States
	South	North	State	South	North	State		
	%	%	%	%	%	%	%	%
Apples	57	25	50	58	69	61	56	56
Pears	40	17	33	78	94	92	54	78
Apples and pears	56	23	48	60	82	68	56	60

Table D.XXI

LAND SUITABLE FOR GROWING APPLES AND PEARS

Farm Averages as at 30 June 1969

Land Condition	Region							
	Tasmania			Victoria			W.A.	Three States
	South	North	State	South	North	State		
	acres	acres	acres	acres	acres	acres	acres	acres
Suitable for apple and pear trees								
- cleared	42.5	88.2	51.7	48.2	110.7	71.4	188.9	95.8
- uncleared	35.5	76.7	43.8	0.7	9.3	3.9	49.5	28.9
Unsuitable for apple and pear trees								
- cleared	31.0	15.5	27.8	9.4	3.0	7.0	293.6	88.9
- uncleared	56.8	17.2	48.8	8.2	27.9	15.5	79.5	43.1
Buildings, channels and roads	1.8	4.0	2.2	3.9	4.4	4.1	3.9	3.4
Total farm area	167.5	201.6	174.4	70.4	155.3	101.9	615.4	260.1

Table D.XXII

EXISTING ORCHARD AREA AND AREA SUITABLE FOR APPLES AND PEARS

Farm Averages as at 30 June 1969

Land Use	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	acres	acres	acres	acres	acres	acres	acres	acres
Existing area								
- apple and pear trees	23.1	29.4	24.4	25.6	26.0	25.8	21.1	24.1
- other orchard fruit	0.1	0.8	0.3	2.1	28.9	12.1	2.1	5.6
Total orchard area	23.2	30.2	24.7	27.7	54.9	37.9	23.2	29.7
Total area suitable for apple and pear trees	78.0	164.9	95.5	48.9	120.0	74.3	238.4	124.7

Table D.XXIII

LAND SUITABLE FOR IRRIGATION

Farm Averages as at 30 June 1969

Land Type	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	acres	acres	acres	acres	acres	acres	acres	acres
Suitable for								
- furrow irrigation	19.2	40.0	23.4	30.5	82.4	49.7	45.1	40.0
- spray irrigation	55.0	126.9	69.5	22.4	33.3	26.4	184.4	81.9
Total suitable for irrigation	74.2	166.9	92.9	52.9	125.7	76.1	229.5	121.9
Unsuitable for irrigation	18.1	13.2	17.1	5.7	21.2	11.4	257.7	77.8
Hilly, rugged and wasteland	73.4	17.6	62.1	8.0	14.1	10.2	124.4	57.1
Area buildings, channels and roads	1.8	4.0	2.2	3.9	4.4	4.1	3.9	3.4
Total farm area	167.5	201.6	174.4	70.4	155.3	101.9	615.4	260.1

Table D.XXIV

FARM LABOUR FORCE IN ADULT MALE EQUIVALENTS

Four Year Farm Averages

Type of Activity	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	no.	no.	no.	no.	no.	no.	no.	no.
Apple and pear enterprise								
- orchard and harvesting	2.46	1.93	2.35	1.84	1.93	1.87	1.21	1.85
- packing and grading	0.80	0.61	0.77	0.66	0.24	0.50	0.12	0.49
Total	3.26	2.54	3.12	2.50	2.17	2.37	1.33	2.34
Other farm enterprises	0.21	0.36	0.24	0.19	2.56	1.07	1.02	0.79
Total enterprise work	3.47	2.90	3.36	2.69	4.73	3.44	2.35	3.13
Development work	0.05	0.02	0.04	0.02	0.01	0.02	0.04	0.03
Off-farm work	0.00	0.10	0.02	0.01	0.01	0.01	0.03	0.02

Table D.XXV

AVERAGE NUMBER OF APPLE AND PEAR TREES AND ACRES

PER ADULT MALE EQUIVALENT

ENGAGED ON ORCHARD AND HARVESTING

Four Year Averages

Apples and Pears	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	no.	no.	no.	no.	no.	no.	no.	no.
Trees per AME	1,648	1,920	1,700	1,496	1,557	1,523	1,876	1,659
Acres per AME	9.1	13.8	9.9	13.6	13.3	13.5	16.6	12.6

Table D. XXVI

TYPE OF LABOUR USED: BY PERCENTAGE OF TOTAL ENTERPRISE WORK

Four Year Averages

Type of Labour	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	%	%	%	%	%	%	%	%
Operator	26.7	28.8	27.7	34.7	19.8	27.2	38.9	29.6
Family	15.9	11.6	15.2	22.0	4.9	13.4	27.4	17.1
Partner(s)	4.6	4.4	4.5	9.7	7.6	8.7	12.8	7.9
Sharefarmer(s)	-	-	-	-	0.6	0.3	-	-
Manager	0.3	-	-	-	0.6	0.3	-	0.3
Hired permanent	22.0	21.6	21.7	22.0	32.2	27.1	5.1	21.0
Hired casual	30.4	33.6	30.9	11.2	33.7	22.7	14.5	23.8
Contract	0.1	-	-	0.4	0.6	0.3	1.3	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table D.XXVII

TYPE OF LABOUR USED: BY PROPORTION OF APPLE AND PEAR ORCHARD AND HARVESTING WORK

Four Year Averages

Type of Labour	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	%	%	%	%	%	%	%	%
Operator	29.3	29.0	29.2	34.8	23.5	30.5	40.1	31.7
Family	14.6	9.9	13.8	18.7	5.8	13.7	29.3	16.4
Partner(s)	4.8	3.5	4.6	10.4	7.2	9.2	10.6	7.5
Sharefarmer(s)	-	-	-	-	0.7	0.3	-	0.1
Manager	0.4	-	0.4	-	0.4	0.1	-	0.2
Hired permanent	25.7	22.8	25.2	23.4	29.6	25.8	4.2	21.8
Hired casual	25.2	34.8	26.8	12.4	32.0	19.9	15.2	22.0
Contract	-	-	-	0.3	0.8	0.5	0.6	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table D.XXVIII

TYPE OF LABOUR USED: BY PROPORTION OF APPLE AND PEAR GRADING AND PACKING WORK

Four Year Averages

Type of Labour	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	%	%	%	%	%	%	%	%
Operator	15.1	20.0	16.0	33.9	40.5	35.1	32.1	25.3
Family	21.0	13.6	19.8	30.7	3.6	25.8	31.5	23.1
Partner(s)	2.9	2.4	2.8	8.1	7.5	8.0	9.0	5.4
Sharefarmer(s)	-	-	-	-	-	-	-	-
Manager	0.1	-	0.1	-	-	-	-	-
Hired permanent	11.2	14.7	11.7	17.5	20.8	18.1	3.1	13.9
Hired casual	49.6	54.3	49.5	9.8	27.6	13.0	24.3	32.2
Contract	0.1	-	0.1	-	-	-	-	-
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table D.XXIX
PRODUCTION OF APPLES AND PEARS
One and Four Year Farm Averages

Year	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	bu	bu	bu	bu	bu	bu	bu	bu
Apples								
1965-66	11,197	6,010	10,147	5,494	2,926	4,543	3,084	5,984
1966-67	8,363	6,480	7,982	5,829	3,468	4,955	4,220	5,747
1967-68	11,288	6,124	10,242	5,054	3,167	4,355	3,538	6,057
1968-69	10,735	6,389	9,855	6,743	4,416	5,881	5,361	7,083
Four year average	10,396	6,251	9,557	5,780	3,494	4,933	4,051	6,207
Pears								
1965-66	480	1,696	727	534	4,414	1,972	165	1,093
1966-67	396	1,014	521	601	4,221	1,942	166	1,014
1967-68	521	1,368	693	478	3,970	1,772	203	1,009
1968-69	480	1,270	640	428	2,767	1,295	196	794
Four year average	469	1,337	645	510	3,843	1,745	182	977

Table D.XXX
YIELD PER BEARING ACRE FOR APPLES AND PEARS
One and Four Year Averages
(Per Acre)

Year	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	bu	bu	bu	bu	bu	bu	bu	bu
Apples								
1965-66	633	353	578	297	290	296	248	391
1966-67	476	384	458	311	325	315	302	363
1967-68	609	356	561	264	293	271	231	365
1968-69	570	336	522	346	421	364	334	413
Four year average	573	357	530	305	332	312	270	383
Pears								
1965-66	412	407	410	237	368	336	263	346
1966-67	336	238	289	266	352	331	262	320
1967-68	429	341	389	212	324	297	301	314
1968-69	364	287	329	211	228	224	264	248
Four year average	385	317	353	232	318	298	273	307

Table D.XXXI

DISTRIBUTION OF FARMS: BY YIELD PER BEARING ACRE OF APPLES

Four Year Averages

Yield per Acre	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
bu	%	%	%	%	%	%	%	%
Under 100	-	-	-	2	1	2	8	3
100-149.9	-	-	-	18	7	14	11	9
150-199.9	-	26	5	10	11	11	18	11
200-249.9	-	8	2	8	11	9	11	7
250-299.9	-	22	4	13	27	18	4	10
300-349.9	9	12	10	20	4	14	21	15
350-399.9	8	1	6	10	11	11	7	8
400-449.9	19	15	18	9	10	9	2	10
450-499.9	9	4	8	1	5	2	6	5
500-599.9	20	-	16	9	3	7	4	9
600-699.9	10	8	10	-	6	2	1	4
700-799.9	7	-	6	-	3	1	7	4
800 and over	18	4	15	-	1	-	-	5
Total farms	100	100	100	100	100	100	100	100

Table D.XXXII

DISTRIBUTION OF FARMS: BY YIELD PER BEARING ACRE OF PEARS

Four Year Averages

Yield per Acre	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
bu	%	%	%	%	%	%	%	%
Under 50	-	-	-	-	-	-	22	4
50- 99.9	1	12	4	-	8	4	3	4
100-149.9	10	12	10	7	19	13	7	11
150-199.9	11	11	11	35	-	15	23	15
200-249.9	5	8	6	18	8	13	6	9
250-299.9	7	6	7	18	25	22	6	14
300-349.9	11	26	15	-	3	2	-	7
350-399.9	-	5	1	11	12	12	10	7
400-449.9	7	12	9	1	10	6	-	6
450-499.9	17	-	12	9	7	8	12	10
500-599.9	8	2	6	1	7	4	-	4
600-699.9	1	3	2	-	1	1	11	3
700-799.9	8	-	6	-	-	-	-	2
800 and over	14	3	11	-	-	-	-	4
Total farms	100	100	100	100	100	100	100	100

Table D.XXXIII

YIELD PER TREE AND PER BEARING TREE: APPLES AND PEARS

Four Year Averages

(Per Acre)

Item	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	bu	bu	bu	bu	bu	bu	bu	bu
Yield per tree (bearing and non-bearing)								
- apples	2.86	2.19	2.75	2.38	2.53	2.42	1.97	2.47
- pears	1.84	2.29	2.01	2.01	2.46	2.36	1.65	2.23
Yield per bearing tree								
- apples	3.30	2.79	3.22	2.86	3.11	2.92	2.65	3.01
- pears	2.28	2.45	2.35	2.12	2.69	2.57	2.88	2.53

Table D.XXXIV

PRODUCTION OF APPLES AND PEARS: ORCHARD AND HARVESTING WORK IN ADULT MALE EQUIVALENTS AND BUSHELS PER ADULT MALE EQUIVALENT

Four Year Farm Averages

Item	Unit	Region							Three States
		Tasmania			Victoria			W.A.	
		South	North	State	South	North	State		
Production of apples and pears	bu	10,865	7,588	10,201	6,290	7,337	6,678	4,233	7,184
Orchard and harvesting work	AME	2.46	1.93	2.35	1.84	1.93	1.87	1.21	1.85
Bushels per AME	bu	4,417	3,932	4,341	3,418	3,802	3,571	3,498	3,883

Table D.XXXV

COMPOSITION OF APPLE PRODUCTION: BY MAJOR VARIETIES

Four Year Averages

Variety	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	%	%	%	%	%	%	%	%
Cleopatra	12.2	2.6	10.9	-	(a)	(a)	5.5	6.4
Crofton	4.7	5.1	4.7	0.3	-	0.2	-	2.4
Delicious	4.9	7.6	5.3	4.7	10.4	6.2	2.2	5.0
G. Delicious	3.0	1.4	2.8	4.6	4.4	4.5	2.0	3.2
R. Delicious	0.2	0.7	0.2	2.1	1.0	1.8	2.4	1.1
Democrat	19.5	7.4	17.9	2.1	3.5	2.5	0.3	9.8
Granny Smith	11.4	13.8	11.8	19.3	39.6	24.7	72.3	26.3
Jonathan	15.9	32.0	18.0	43.9	20.8	37.8	6.6	22.6
Sturmer	18.7	21.3	19.0	(a)	-	(a)	-	9.6
Other	9.5	8.1	9.4	23.0	20.3	22.3	8.7	15.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) Negligible

Table D.XXXVI

COMPOSITION OF PEAR PRODUCTION: BY MAJOR VARIETIES

Four Year Averages

Variety	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	%	%	%	%	%	%	%	%
Beurre Bosc	10.2	20.4	14.6	20.4	4.0	7.0	-	8.3
Comice	8.1	12.9	20.2	0.2	0.2	0.2	5.5	2.6
Glou Morceau	3.8	16.0	9.0	-	-	-	-	1.9
Josephine	7.5	1.8	5.1	0.6	17.6	14.4	3.3	11.9
Packham's Triumph	28.8	17.4	24.0	59.0	65.1	64.0	53.3	54.9
Winter Cole	41.1	26.9	35.0	9.4	0.1	1.8	-	8.9
Winter Nelis	-	1.6	0.6	7.2	9.9	9.4	1.3	7.1
Other	0.5	3.0	1.5	3.2	3.1	3.2	36.6	4.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table D.XXXVII

PRODUCTION AND SALES:

BY TYPE OF OUTLET

Four Year Farm Averages

Type of Outlet	Region							
	Tasmania			Victoria			W.A.	Three States
	South	North	State	South	North	State		
	bu	bu	bu	bu	bu	bu	bu	bu
Apples								
Export	7,412	4,354	6,793	217	712	400	2,519	3,036
Local sales	331	917	450	4,926	2,015	3,848	1,166	2,039
Canning	1,397	535	1,222	149	504	280	-	514
Processing	1,256	445	1,092	488	263	405	366	618
Total	10,396	6,251	9,557	5,780	3,494	4,933	4,051	6,207
Pears								
Export	457	1,249	617	143	2,394	977	64	621
Local sales	12	88	28	364	1,444	764	118	355
Processing	-	-	-	3	5	4	-	2
Total	469	1,337	645	510	3,843	1,745	182	978

Table D.XXXVIII

COMPOSITION OF APPLE EXPORTS: BY MAJOR VARIETIES

Four Year Averages

Variety	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	%	%	%	%	%	%	%	%
Cleopatra	12.3	2.5	11.1	-	-	-	6.2	9.5
Crofton	4.3	5.2	4.4	-	-	-	-	3.2
Delicious	5.0	7.9	5.4	0.3	3.2	2.3	0.1	4.1
G. Delicious	3.3	1.6	3.1	2.2	2.4	2.3	0.8	2.5
R. Delicious	0.2	0.3	0.3	0.5	1.3	1.0	0.2	0.3
Democrat	20.9	7.0	19.1	2.9	4.8	4.2	0.2	14.2
Granny Smith	12.1	14.2	12.4	53.0	66.0	61.5	91.1	32.2
Jonathan	14.5	32.1	16.8	21.0	4.9	10.5	0.6	12.9
Sturmer	18.5	20.4	18.8	-	-	-	-	13.7
Other	8.9	8.2	8.6	20.1	17.4	18.2	0.8	7.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	bu	bu	bu	bu	bu	bu	bu	bu
Total quantity	7,412	4,354	6,793	217	712	400	2,519	3,036

Table D.XXXIX

PROPORTION OF PRODUCTION SOLD FOR EXPORT:

BY MAJOR APPLE VARIETIES

Four Year Averages

Variety	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	%	%	%	%	%	%	%	%
Cleopatra	72.3	68.3	72.2	-	-	-	69.2	71.9
Crofton	65.1	71.0	66.2	0.0	-	0.0	-	63.8
Delicious	73.3	72.5	73.2	0.4	6.3	3.0	3.3	39.5
G. Delicious	77.0	75.8	76.5	1.9	11.1	4.1	23.5	38.3
R. Delicious	73.7	95.1	82.6	0.8	26.5	4.4	5.2	12.9
Democrat	76.6	66.3	76.0	5.8	27.9	13.9	54.5	70.8
Granny Smith	75.3	71.8	74.7	10.3	33.9	20.2	79.4	59.8
Jonathan	66.1	69.8	66.3	1.8	4.8	2.3	5.6	28.0
Sturmer	70.5	66.8	70.0	-	-	-	-	70.0
Other	66.3	69.6	66.5	2.4	17.4	6.7	5.7	27.2
All varieties	71.3	69.7	71.1	3.8	20.3	8.1	62.2	48.9

Table D.XL

COMPOSITION OF PEAR EXPORTS: BY MAJOR VARIETIES

Four Year Averages

Variety	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	%	%	%	%	%	%	%	%
Beurre Bosc	10.5	20.0	14.4	23.5	5.2	6.9	-	9.2
Comice	8.3	11.8	9.7	-	0.2	0.2	1.5	3.4
Glou Morceau	3.5	16.3	8.8	-	-	-	-	2.9
Josephine	7.0	1.9	4.9	-	18.4	16.7	1.5	12.6
Packham's Triumph	29.1	17.5	24.3	64.4	66.7	66.5	90.7	53.5
Winter Cole	41.1	27.5	35.5	-	-	-	-	11.4
Winter Nelis	-	1.7	0.6	11.7	9.5	9.7	-	6.4
Other	0.5	3.3	1.8	0.4	-	-	6.3	0.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	bu	bu	bu	bu	bu	bu	bu	bu
Total quantity	457	1,249	617	143	2,394	977	64	621

Table D.XLI

PROPORTION OF PRODUCTION SOLD FOR EXPORTS:

BY MAJOR PEAR VARIETIES

Four Year Averages

Variety	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	%	%	%	%	%	%	%	%
Beurre Bosc	98.9	91.6	94.6	32.3	81.2	54.9	0.0	69.9
Comice	99.5	84.9	91.7	0.0	72.4	61.0	7.5	81.4
Glou Morceau	88.9	95.2	93.7	-	-	-	-	93.7
Josephine	92.2	100.0	93.4	0.0	65.3	64.8	22.7	66.9
Packham's Triumph	98.4	94.4	97.2	30.6	63.8	58.2	60.4	61.9
Winter Cole	97.4	95.5	96.8	0.0	0.0	0.0	-	82.3
Winter Nelis	-	100.0	100.0	45.0	60.0	57.9	0.0	58.2
Other	100.0	100.0	100.0	4.7	-	0.9	5.8	10.2
All varieties	97.4	93.4	95.7	28.0	62.3	56.0	35.2	63.6

Table D.XLII

COMPOSITION OF LOCAL FRESH MARKET SALES OF APPLES:

BY MAJOR VARIETIES

Four Year Averages

Variety	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	%	%	%	%	%	%	%	%
Cleopatra	5.3	1.4	3.8	-	-	-	3.7	0.8
Crofton	17.1	6.4	12.7	0.4	-	0.3	-	1.1
Delicious	10.0	10.5	10.2	4.8	15.1	6.8	7.5	7.1
G. Delicious	0.7	1.8	1.2	5.0	4.6	4.9	4.9	4.7
R. Delicious	-	0.2	0.1	2.4	1.2	2.1	7.6	2.8
Democrat	9.7	12.0	10.4	2.0	4.3	2.4	0.4	2.7
Granny Smith	4.5	8.7	6.2	18.3	25.5	19.7	28.3	20.0
Jonathan	40.2	29.3	35.6	45.9	28.7	42.6	20.2	38.7
Sturmer	6.3	22.5	12.9	0.1	-	0.1	-	1.0
Other	6.2	7.2	7.9	21.1	20.6	21.1	27.4	21.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	bu	bu	bu	bu	bu	bu	bu	bu
Total quantity	331	917	450	4,926	2,016	3,848	1,166	2,039

Table D.XLIII

PROPORTION OF PRODUCTION SOLD ON THE LOCAL FRESH MARKET:

BY MAJOR APPLE VARIETIES

Four Year Averages

Variety	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	%	%	%	%	%	%	%	%
Cleopatra	1.4	8.1	1.6	-	-	-	19.2	4.3
Crofton	11.5	18.4	12.6	100.0	-	100.0	-	15.1
Delicious	6.5	20.2	9.1	87.5	83.5	85.9	95.6	46.2
G. Delicious	0.8	18.4	1.9	94.3	60.1	85.6	70.4	47.3
R. Delicious	0.0	5.0	0.2	95.5	73.5	92.2	91.7	82.1
Democrat	1.6	23.9	2.8	80.2	70.5	76.2	50.0	9.0
Granny Smith	1.3	9.3	2.5	80.6	37.2	62.2	11.3	25.0
Jonathan	8.0	13.4	9.3	89.0	79.6	87.7	87.4	56.3
Sturmer	1.1	15.5	3.2	100.0	-	100.0	-	3.4
Other	2.1	12.8	4.0	78.9	58.4	74.0	90.9	51.3
All varieties	3.2	14.7	4.7	85.2	57.7	78.0	28.8	32.9

Table D.XLIV
PROPORTION OF EXPORT AND LOCAL FRESH MARKET APPLES AND PEARS PACKED ON FARM
Four Year Averages

Item	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	%	%	%	%	%	%	%	%
Export	84	84	84	55	18	25	16	62
Local fresh market	90	52	74	96	47	83	47	77
Total packed	84	79	83	94	34	69	27	68

Table D.XLV
PROPORTIONS OF GROWERS PACKING APPLES AND PEARS
Four Year Averages

Type of Grower	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	%	%	%	%	%	%	%	%
Proportion of total growers -								
Packing apples and pears	89	69	85	97	40	75	52	70
Packing apples and pears for export	85	69	82	23	17	21	14	39
Producing export apples and pears	100	93	99	31	90	53	98	80
Packing for export	85	75	83	74	19	39	14	49

Table D.XLVI
TOTAL QUANTITIES OF APPLES AND PEARS PACKED ON FARM
Four Year Farm Averages

Item	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	bu	bu	bu	bu	bu	bu	bu	bu
Own production	6,910	5,205	6,559	5,287	2,207	4,147	1,025	4,116
Other growers	920	991	934	478	585	517	1	518
Total packed	7,830	6,196	7,493	5,765	2,792	4,664	1,026	4,634

Table D. XLVII

PROPORTION OF TOTAL FARMS WITH COOL STORAGE FACILITIES:

BY TYPE OF COOL STORAGE

As at 30 June 1969

Type of Cool Storage	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	%	%	%	%	%	%	%	%
Freon	10	22	12	12	16	14	8	12
Direct expansion	6	12	7	33	6	22	-	12
Controlled atmosphere	-	-	-	1	-	1	-	-
Total farms with cool storage	16	34	19	46	22	37	8	24

Table D. XLVIII

COOL STORAGE CAPACITY

Farm Averages as at 30 June 1969

Type of Cool Storage	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	bu	bu	bu	bu	bu	bu	bu	bu
Freon	812	1,637	980	650	549	613	312	653
Direct expansion	445	974	552	3,002	1,540	2,460	-	1,194
Controlled atmosphere	-	-	-	132	-	83	-	33
Total storage	1,257	2,611	1,532	3,784	2,089	3,156	312	1,880

Table D.XLIX

CAPITAL STRUCTURE

Four Year Farm Averages

Capital Item	Region							
	Tasmania			Victoria			W.A.	Three States
	South	North	State	South	North	State		
	$	$	$	$	$	$	$	$
Land	25,665	25,120	25,555	74,917	53,405	66,948	41,504	46,805
Plant and machinery	8,107	6,278	7,737	8,173	9,216	8,559	7,065	7,900
Fences, roads, culverts, etc.	1,119	2,425	1,383	546	808	643	3,828	1,719
Water supply and irrigation	1,569	682	1,389	1,553	3,285	2,195	3,140	2,180
Buildings	5,668	6,843	5,906	6,650	8,568	7,361	4,365	6,102
Livestock	1,314	1,747	1,402	541	1,489	892	10,537	3,586
Working capital	9,222	7,060	8,784	4,496	13,268	7,746	5,612	7,525
Total	52,664	50,155	52,156	96,876	90,041	94,344	76,051	75,817

Table D.L

CAPITAL VALUE OF PLANT AND MACHINERY

Four Year Farm Averages

Capital Item	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	$	$	$	$	$	$	$	$
Vehicles	2,779	2,193	2,660	2,087	3,095	2,461	2,658	2,577
Land preparation and cultivation equipment	537	413	512	401	619	482	787	572
Seeding, fertiliser and spray equipment	1,346	1,033	1,283	1,190	2,151	1,546	701	1,239
Irrigation plant	536	203	468	701	267	540	1,052	651
Water supply plant	59	38	55	71	123	90	95	80
Harvesting equipment	1,156	954	1,116	1,599	1,682	1,629	751	1,232
Packing equipment	1,021	411	897	369	527	427	195	519
Cool storage equipment	255	700	345	1,407	400	1,034	287	614
Livestock and other plant	175	150	170	79	54	70	386	185
General tools	243	183	231	269	298	280	153	231
Total	8,107	6,278	7,737	8,173	9,216	8,559	7,065	7,900

Table D.LI

DISTRIBUTION OF FARMS: BY TOTAL CAPITAL

Four Year Averages

Range of Total Capital	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
$'000	%	%	%	%	%	%	%	%
Under 20	-	7	1	12	4	9	4	5
20- 39.9	44	42	44	5	29	14	18	25
40- 59.9	27	19	26	22	14	19	31	24
60- 79.9	17	18	17	13	20	15	16	16
80- 99.9	5	5	5	10	4	8	10	8
100- 149.9	5	6	5	25	20	23	14	15
150- 199.9	1	3	2	1	1	1	5	2
200- 299.9	1	-	-	9	4	7	4	4
300- 399.9	-	-	-	-	1	1	1	-
400 and over	-	-	-	3	3	3	-	1
Total farms	100	100	100	100	100	100	100	100

Table D.LII

PURCHASES AND SALES OF CAPITAL ITEMS

Four Year Farm Averages

Capital Item	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	$	$	$	$	$	$	$	$
Purchases -								
Land	434	599	468	248	228	240	1,291	590
Buildings	564	412	533	444	529	476	305	449
Fences, roads, etc.	126	19	105	3	18	8	138	74
Waters	211	79	184	106	500	252	518	300
Vehicles	748	867	773	427	749	546	1,008	741
Cultivation equipment	88	73	85	76	132	96	136	103
Spray and fertiliser equipment	296	170	270	117	531	271	230	260
Harvesting equipment	279	213	266	354	305	336	213	281
Packing equipment	152	59	133	56	59	57	42	78
Cool storage equipment	92	145	103	217	104	175	65	122
Other plant	114	97	110	84	99	90	347	164
Total purchases	3,104	2,733	3,030	2,132	3,254	2,547	4,293	3,162
Sales -								
Land	85	-	68	881	70	581	10	264
Vehicles	64	113	108	47	64	53	92	70
Other items	74	8	26	20	89	37	27	46
Total sales	223	121	202	948	223	671	129	380

Table D. LIII

TOTAL PURCHASES AND SALES OF PLANT AND EQUIPMENT

Annual Farm Averages

Year	Region							
	Tasmania			Victoria			W.A.	Three States
	South	North	State	South	North	State		
	$	$	$	$	$	$	$	$
Purchases								
1965-66	2,083	1,977	2,061	1,271	2,507	1,729	2,643	2,077
1966-67	2,344	2,196	2,314	2,210	1,783	2,052	2,006	2,125
1967-68	1,641	1,022	1,515	999	2,182	1,437	1,756	1,546
1968-69	1,008	1,302	1,068	842	1,445	1,066	1,761	1,249
Sales								
1965-66	73	56	69	51	132	81	96	81
1966-67	136	216	152	148	119	137	64	123
1967-68	14	35	19	49	175	96	168	90
1968-69	196	179	193	21	188	82	149	136

Table D.LIV

GROSS FARM RECEIPTS

Four Year Farm Averages

Source of Income	Region							
	Tasmania			Victoria			W.A.	Three States
	South	North	State	South	North	State		
	$	$	$	$	$	$	$	$
Apples	22,128	13,621	20,405	12,907	7,532	10,915	10,614	13,925
Pears	1,178	3,136	1,575	1,335	11,293	5,025	544	2,727
Total apples and pears	23,306	16,757	21,980	14,242	18,825	15,940	11,158	16,652
Other tree fruit	15	377	88	524	14,561	5,725	674	2,566
Other fruit	199	-	159	-	2	1	-	52
Vegetables	33	6	27	-	257	95	1,902	547
Other crops	-	-	-	-	5	2	178	47
Livestock	650	711	662	232	703	407	3,371	1,267
Other farm produce	390	859	485	294	285	291	2,839	1,022
Other enterprise income	556	203	485	154	360	230	453	372
Total gross farm receipts	25,149	18,913	23,886	15,446	34,998	22,691	20,575	22,525

Table D.LV

OFF-FARM INCOME

Four Year Farm Averages

Source of Income	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	$	$	$	$	$	$	$	$
Off-farm work	14	219	56	105	25	75	69	67
Cool storage	256	267	258	126	107	119	15	137
Packing and grading	206	253	216	259	281	267	7	183
Other businesses, interest, dividends, etc.	101	150	111	676	722	693	246	386
Total	577	889	641	1,166	1,135	1,154	337	773

Table D.LVI

DISTRIBUTION OF FARMS: BY GROSS FARM RECEIPTS

Four Year Averages

Gross Farm Receipts	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
$'000	%	%	%	%	%	%	%	%
Under 5	-	14	3	13	-	8	7	6
5 - 9.9	-	26	5	29	7	21	9	13
10 - 14.9	28	12	24	25	30	27	18	24
15 - 19.9	17	18	17	12	10	11	23	16
20 - 24.9	21	5	17	3	11	6	18	13
25 - 29.9	16	3	13	4	4	4	7	8
30 - 39.9	4	12	5	8	12	10	13	9
40 - 49.9	7	3	6	4	1	3	4	4
50 - 59.9	1	4	2	-	7	3	-	2
60 - 79.9	4	3	4	2	13	5	1	4
80 - 99.9	1	-	1	-	-	-	-	-
100 and over	1	-	1	-	5	2	-	1
Total farms	100	100	100	100	100	100	100	100

Table D.LVII

COMPOSITION OF GROSS RECEIPTS FROM APPLES AND PEARS:
BY TYPE OF OUTLET
Four Year Averages

Type of Outlet	Region							
	Tasmania			Victoria			W.A.	Three States
	South	North	State	South	North	State		
	%	%	%	%	%	%	%	%
Apples								
Export	92	89	92	5	30	11	74	62
Local fresh sales	3	8	3	92	60	84	25	34
Canning	3	2	3	1	8	3	-	3
Processing	2	1	2	2	2	2	1	1
Total	100	100	100	100	100	100	100	100
Pears								
Export	99	97	98	36	67	62	39	68
Local fresh sales	1	3	2	64	33	38	61	32
Processing	-	-	-	(a)	(a)	(a)	-	(a)
Total	100	100	100	100	100	100	100	100

(a) 0.1% or less of total.

Table D.LVIII

GROSS RECEIPTS FROM APPLES AND PEARS
PER BEARING ACRE AND PER BEARING TREE
Four Year Averages

Item	Region							
	Tasmania			Victoria			W.A.	Three States
	South	North	State	South	North	State		
	$	$	$	$	$	$	$	$
Gross receipts per acre								
- apples	121.8	77.7	116.3	68.0	71.7	68.9	73.5	86.0
- pears	96.5	74.3	86.0	60.7	93.4	85.7	81.2	85.5
Gross receipts per tree								
- apples	7.0	6.1	6.9	6.4	6.7	6.5	6.9	6.8
- pears	5.7	5.8	5.7	5.6	7.9	7.4	8.6	7.1

Table D.LIX

CASH COSTS

Four Year Farm Averages

Cost Item	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	$	$	$	$	$	$	$	$
Labour -								
Hired permanent	1,781	1,342	1,692	1,299	3,956	2,284	259	1,560
Hired casual	2,378	2,038	2,309	691	4,046	1,933	776	1,752
Total labour	4,159	3,380	4,001	1,990	8,002	4,217	1,035	3,312
Contracts	63	57	62	39	143	78	248	117
Materials -								
Electricity	197	166	190	242	322	271	190	224
Fuel, oil and grease	415	456	424	526	785	622	581	547
Repairs and maintenance	742	743	742	701	1,337	936	920	869
Fertilisers	950	615	882	522	1,013	704	1,116	870
Sprays and dusts	1,502	1,088	1,418	1,212	3,705	2,136	338	1,431
Packing materials(a)	4,879	3,507	4,601	1,411	1,088	1,291	629	2,195
Other materials	275	233	267	131	529	280	778	405
Total materials	8,960	6,808	8,524	4,745	8,779	6,240	4,552	6,541
Services -								
Packing charges(a)	1,345	1,077	1,291	366	5,008	2,086	2,795	2,013
Local freight(a)	901	712	863	417	997	632	791	749
Cool storage(a)	1,059	501	946	366	839	541	552	676
Handling charges(a)	812	463	742	31	218	101	217	340
Marketing charges(a)	311	224	293	64	222	122	202	199
Rates and taxes	190	201	192	406	707	517	150	315
Insurance	386	295	367	286	902	514	216	388
Other services	338	420	355	287	759	463	508	439
Total services	5,342	3,893	5,049	2,223	9,652	4,976	5,431	5,119
Deduct rebates and refunds	79	19	67	5	39	18	43	40
Total cash costs	18,445	14,119	17,569	8,992	26,537	15,493	11,223	15,049
Interest paid	629	358	574	352	737	495	512	525

(a) Relate to apples and pears only.

Table D.LX

IMPUTED COSTS

Four Year Farm Averages

Cost Item	Region							
	Tasmania			Victoria			W.A.	Three States
	South	North	State	South	North	State		
	$	$	$	$	$	$	$	$
Labour -								
Operator	2,063	1,850	2,020	1,961	2,011	1,979	1,710	1,922
Family, partners, etc.	1,418	926	1,318	1,711	1,243	1,538	1,687	1,505
Total labour	3,481	2,776	3,338	3,672	3,254	3,517	3,397	3,427
Depreciation -								
Plant and machinery	1,679	1,340	1,611	1,674	1,985	1,789	1,382	1,624
Buildings	283	301	286	281	355	308	222	279
Fences, roads, culverts, etc.	44	124	60	26	36	30	164	75
Water supply and irrigation	96	46	86	81	151	107	142	109
Total depreciation	2,102	1,811	2,043	2,062	2,527	2,234	1,910	2,087
Interest on capital -								
Land	1,524	1,492	1,518	4,448	3,171	3,975	2,466	2,779
Plant and machinery	481	373	460	485	547	508	420	469
Buildings	337	406	351	395	509	437	259	363
Fences, roads, culverts, etc.	67	144	82	33	48	38	227	102
Water supply and irrigation	93	41	83	92	195	131	187	130
Livestock	78	104	83	32	88	53	626	213
Working capital	548	419	522	267	788	460	333	447
Total interest	3,128	2,979	3,098	5,752	5,346	5,602	4,518	4,503
Total imputed costs	8,711	7,566	8,479	11,486	11,127	11,353	9,825	10,017

Table D.LXI

DISTRIBUTION OF FARMS: BY TOTAL COSTS

Four Year Averages

Range of Costs	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
$'000	%	%	%	%	%	%	%	%
Under 5	-	-	-	4	-	2	4	2
5 - 9.9	-	22	4	16	10	14	7	9
10 - 14.9	21	26	22	26	14	21	10	19
15 - 19.9	11	9	11	16	19	17	32	19
20 - 24.9	26	15	24	16	13	15	22	19
25 - 29.9	22	3	18	4	7	5	11	11
30 - 39.9	6	11	7	10	7	9	9	8
40 - 49.9	5	10	6	3	5	4	4	5
50 - 59.9	4	1	3	4	10	6	-	3
60 - 79.9	4	3	4	-	10	4	1	3
80 and over	1	-	1	1	5	3	-	2
Total farms	100	100	100	100	100	100	100	100

Table D.LXII

GRADING, PACKING AND MARKETING COSTS FOR APPLES AND PEARS

Four Year Farm Averages

Cost Item	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	$	$	$	$	$	$	$	$
Labour - hired	1,074	791	1,017	433	302	384	70	508
- family	381	195	343	519	55	347	87	278
Total labour	1,455	986	1,360	952	357	731	157	786
Packing materials	4,879	3,507	4,601	1,411	1,088	1,292	628	2,195
" charges	1,345	1,077	1,291	366	5,009	2,085	2,795	2,013
Local freight	901	712	862	417	997	632	791	749
Cool storage	1,059	501	946	366	839	541	552	676
Handling charges	813	463	742	31	218	101	217	340
Marketing "	310	224	293	64	222	123	202	199
Depreciation(a)	325	327	326	518	299	437	108	314
Total cost	11,087	7,797	10,421	4,125	9,029	5,942	5,451	7,271
Operator's labour	271	271	271	474	207	375	72	262
Interest on capital(a)	204	259	215	370	247	324	92	228
Total including operator's labour and interest	11,562	8,327	10,907	4,969	9,483	6,641	5,615	7,761

(a) Relates only to packing and cool storage plant and buildings.

Table D.LXIII

UNIT GRADING, PACKING AND MARKETING COSTS PER BUSHEL OF APPLES AND PEARS

Four Year Farm Averages

Item	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	bu	bu	bu	bu	bu	bu	bu	bu
Apples and pears -								
Export	7,869	5,603	7,410	360	3,106	1,377	2,583	3,657
Local fresh market	343	1,005	478	5,290	3,459	4,612	1,284	2,394
Total pack-out	8,212	6,608	7,888	5,650	6,565	5,989	3,867	6,051
	$	$	$	$	$	$	$	$
Cost *excluding* operator's labour and interest								
- total	11,087	7,797	10,421	4,125	9,029	5,942	5,451	7,271
- per bushel	1.35	1.18	1.32	0.73	1.38	0.99	1.41	1.20
Cost *including* operator's labour and interest								
- total	11,562	8,327	10,907	4,969	9,483	6,641	5,615	7,761
- per bushel	1.41	1.26	1.38	0.88	1.44	1.11	1.45	1.28

Table D.LXIV

NET RECEIPTS FROM APPLES AND PEARS

Four Year Farm Averages

Item	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	$	$	$	$	$	$	$	$
Gross receipts -								
Export apples and pears	21,546	15,206	20,262	1,123	9,832	4,350	8,024	10,492
Local apples and pears	623	1,107	721	12,707	8,266	11,061	3,001	5,583
Total export and local	22,169	16,313	20,983	13,830	18,098	15,411	11,025	16,075
Less grading, packing and marketing costs	11,087	7,797	10,421	4,125	9,029	5,942	5,450	7,272
Net receipts export and local	11,082	8,516	10,562	9,705	9,069	9,469	5,575	8,803
Receipts canning and juicing apples and pears	1,137	444	997	412	727	529	133	577
Net receipts apples and pears	12,219	8,960	11,559	10,117	9,796	9,998	5,708	9,380

Table D.LXV

CONTRIBUTION OF APPLES AND PEARS TO GROSS FARM RECEIPTS AND NET FARM RECEIPTS

Four Year Farm Averages

Item	Unit	Region							Three States
		Tasmania			Victoria			W.A.	
		South	North	State	South	North	State		
Gross receipts -									
Apples and pears	$	23,306	16,757	21,980	14,242	18,825	15,940	11,158	16,652
Other enterprises	"	1,842	2,156	1,906	1,204	16,173	6,751	9,417	5,873
Gross farm receipts	"	25,149	18,913	23,886	15,446	34,998	22,691	20,575	22,525
Proportion provided by apples and pears	%	93	89	92	92	54	70	54	74
Net receipts -									
Apples and pears	$	12,219	8,960	11,559	10,117	9,796	9,998	5,708	9,380
Other enterprises	"	1,842	2,156	1,906	1,204	16,174	6,751	9,415	5,874
Net farm receipts	"	14,061	11,116	13,465	11,321	25,970	16,749	15,123	15,254
Proportion provided by apples and pears	%	87	81	86	89	38	60	38	61

Table D.LXVI

NET RECEIPTS PER BUSHEL OF APPLES AND PEARS

Four Year Farm Averages

Item	Unit	Region							Three States
		Tasmania			Victoria			W.A.	
		South	North	State	South	North	State		
Apples and pears -									
Net receipts	$	12,219	8,960	11,559	10,117	9,796	9,998	5,708	9,380
Total production	bu	10,865	7,588	10,202	6,290	7,337	6,678	4,233	7,185
Unit value	$/bu	1.12	1.18	1.13	1.61	1.34	1.50	1.35	1.31

Table D.LXVII

NET RECEIPTS FROM APPLES AND PEARS PER BEARING ACRE AND PER BEARING TREE

Four Year Farm Averages

Item	Unit	Region							Three States
		Tasmania			Victoria			W.A.	
		South	North	State	South	North	State		
Net receipts from apples and pears	$	12,219	8,960	11,559	10,117	9,796	9,998	5,708	9,380
Bearing acreage of apples and pears	acres	19.4	21.7	19.8	21.2	22.6	21.6	15.1	19.4
Net receipts per bearing acre	$	63.0	41.3	58.4	47.7	43.2	46.1	37.8	48.4
Number of bearing apple and pear trees	no.	3,357	2,785	3,241	2,258	2,552	2,367	1,590	2,447
Net receipts per bearing tree	$	3.6	3.2	3.6	4.5	3.8	4.2	3.6	3.8

Table D.LXVIII

INCOME STRUCTURE

Four Year Farm Averages

Income Item	Region							
	Tasmania			Victoria			W.A.	Three States
	South	North	State	South	North	State		
	$	$	$	$	$	$	$	$
A. Gross farm receipts	25,149	18,913	23,886	15,446	34,998	22,691	20,575	22,525
B. Cash costs	18,445	14,119	17,569	8,992	26,537	15,493	11,223	15,049
C. Net cash income (A-B)	6,704	4,794	6,317	6,454	8,461	7,198	9,352	7,476
D. Depreciation	2,102	1,811	2,043	2,062	2,527	2,234	1,910	2,087
E. Farm income (C-D)	4,602	2,983	4,274	4,392	5,934	4,964	7,442	5,389
F. Family labour	1,418	926	1,318	1,711	1,243	1,538	1,687	1,506
G. Net farm income (E-F)	3,184	2,057	2,956	2,681	4,691	3,426	5,755	3,883
H. Off-farm income	577	889	641	1,166	1,135	1,154	337	773
J. Farmer's net income (G+H)	3,761	2,946	3,597	3,847	5,826	4,580	6,092	4,656

Table D.LXIX

NET FARM INCOME

Annual Farm Averages

Year	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	$	$	$	$	$	$	$	$
1965-66	5,402	3,020	4,919	3,195	5,923	4,206	5,658	4,819
1966-67	2,018	2,144	2,044	3,391	4,532	3,813	5,018	3,553
1967-68	3,346	1,096	2,890	1,637	6,316	3,371	4,644	3,548
1968-69	1,969	1,969	1,969	2,503	1,994	2,315	7,698	3,613

Table D.LXX

DISTRIBUTION OF FARMS: BY NET FARM INCOME

Four Year Averages

Range of Net Farm Income	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
$'000	%	%	%	%	%	%	%	%
Under -4	1	-	1	-	1	-	-	-
-4 and under -2	3	3	3	1	-	1	-	1
-2 " " -1	6	-	5	7	7	7	8	7
-1 " " 0	10	38	15	10	3	7	-	8
0 " " 1	8	18	10	18	14	16	7	12
1 " " 2	7	-	6	18	1	12	2	7
2 " " 3	19	15	18	10	17	13	6	13
3 " " 4	10	4	9	12	12	12	14	12
4 " " 5	17	14	16	9	5	7	10	11
5 " " 6	6	1	5	-	7	3	14	6
6 " " 7	4	-	3	4	14	7	15	8
7 " " 8	3	-	2	-	12	5	3	3
8 " " 9	1	3	2	2	-	1	2	2
9 " " 10	-	-	-	3	-	2	1	1
10 and over	5	4	5	6	7	7	18	9
Total farms	100	100	100	100	100	100	100	100

Table D.LXXI

RETURN TO CAPITAL AND MANAGEMENT AND RATE OF RETURN

Four Year Farm Averages

Item	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	$	$	$	$	$	$	$	$
A. Net farm income	3,184	2,057	2,956	2,681	4,691	3,426	5,754	3,883
B. Operator's labour	2,063	1,850	2,020	1,961	2,011	1,979	1,710	1,922
C. Return to capital and management (A-B)	1,121	207	936	720	2,680	1,447	4,044	1,961
D. Total capital	52,664	50,155	52,156	96,876	90,041	94,344	76,051	75,817
	%	%	%	%	%	%	%	%
E. Rate of return to capital and management $(\frac{C}{D} \times \frac{100}{1})$	2.12	0.41	1.79	0.74	2.97	1.53	5.31	2.58

Table D.LXXII

SOURCES OF FUNDS BORROWED

At 30 June 1969

Source	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	%	%	%	%	%	%	%	%
Banks	34	42	36	47	40	44	44	41
Development banks and agencies	18	6	16	17	18	17	24	19
Packing houses, exporters, etc.	43	9	38	1	2	1	11	19
Hire purchase	1	7	2	2	-	1	3	2
Private - relatives	2	12	3	11	5	8	8	6
- other	-	17	3	20	28	25	8	11
Insurance companies	2	7	2	2	5	4	1	2
Other	-	-	-	-	-	-	1	-
Total	100	100	100	100	100	100	100	100
	$	$	$	$	$	$	$	$
Total indebtedness per farm	15,325	8,836	14,009	5,166	14,111	8,480	10,238	10,741

Table D.LXXIII

INTEREST PAID

Annual Farm Averages

Year	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
	$	$	$	$	$	$	$	$
1965-1966	451	310	422	233	575	360	426	397
1966-1967	535	318	491	582	561	574	497	527
1967-1968	641	375	587	264	939	514	503	535
1968-1969	888	429	795	330	872	531	624	641

Table D.LXXIV

DISTRIBUTION OF FARMS: BY TOTAL INDEBTEDNESS

At 30 June 1969

Debt Outstanding	Region							Three States
	Tasmania			Victoria			W.A.	
	South	North	State	South	North	State		
$'000	%	%	%	%	%	%	%	%
Nil	23	30	24	39	43	41	27	32
0 and under 5	21	24	22	27	13	22	20	22
5 " " 10	10	30	14	20	7	15	8	13
10 " " 15	9	3	8	7	13	6	16	9
15 " " 20	9	-	7	3	7	8	12	8
20 " " 40	20	7	17	1	14	5	13	11
40 and over	8	6	8	3	3	3	4	5
Total farms	100	100	100	100	100	100	100	100

Table D.LXXV

DISTRIBUTION OF FARMS: BY EQUITY RATIO

At 30 June 1969

Equity Ratio	Unit	Region							Three States
		Tasmania			Victoria			W.A.	
		South	North	State	South	North	State		
%									
Under 50	%	25	8	21	1	10	4	2	9
50 and under 60	"	9	20	12	4	4	4	-	5
60 " " 70	"	9	-	7	1	12	5	10	8
70 " " 80	"	8	13	9	8	8	8	4	7
80 " " 90	"	13	11	11	12	13	22	41	19
90 " " 100	"	11	18	16	35	10	26	16	20
100	"	23	30	24	39	43	41	27	32
Total farms	"	100	100	100	100	100	100	100	100
Average equity ratio	"	67	80	69	94	80	90	87	85
Average equity per farm	$	30,560	36,025	31,669	86,205	57,115	75,427	68,661	59,410

INDEX TO TABLES

TEXT TABLES

APPENDIX TABLES