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MARKET GARDENING

IN THE

MELBOURNE AREA OF DERBYSHIRE

DEPARTMENT OF AGRICULTURAL ECONOMICS
SUTTON BONINGTON
LOUGHBOROUGH

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MARKET GARDENING

IN THE

MELBOURNE AREA OF DERBYSHIRE

Department of Agricultural Economics
University of Nottingham School of Agriculture
Sutton Bonington, Loughborough.

DECEMBER, 1952.

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C H A P T E R I

INTRODUCTION

The Need for the Study

Horticultural production makes a very significant contribution to the output from the soil of this country. It has been estimated that pre-war fruit, vegetables and flowers formed 12 per cent of the total value of the gross agricultural output of the United Kingdom. By 1941-42 this proportion had increased to 18 per cent, but in 1945-46 it fell again to 16 per cent. During the war years, when food imports were considerably reduced, much of the shortage was made good by an increase in the consumption of vegetables. After the war, the horticultural industry had to face the competition of imports at a time when costs of production were rising steadily. Because horticultural products are excluded from the scope of the review of agricultural prices held annually under the terms of the Agricultural Act 1947, prices of horticultural products have, since the end of the war, been determined by the interplay of supply and demand. There can be no doubt that the trend of net incomes on many horticultural units has been relatively unfavourable in recent years.

The individual producer may have a variety of objectives. He may want to make as much money as possible. Alternatively, he may be satisfied with a moderate income if he can get it with a moderate amount of effort. Given one of these objectives and the necessary technical information on input-output relationships, the economist can often suggest the system of production which is most likely to succeed.

The community, on the other hand, wants to be satisfied that the resources of the countryside are being used advantageously. It is the job of the economist today to discover which type of farming makes the best use of land, of labour, of capital or of all three factors of production. Is it better to concentrate production on good land? Are small farms more efficient than large farms? What would be the effect of changing the system of pricing or of taxation?

The economist is constantly seeking the answers to a host of problems that face producers from day to day. Would it pay to use more fertilisers or to specialise on a few crops? Would it pay better on a particular holding to double the poultry flock or to sell the poultry and keep pigs? Why do some producers make double the profits of other producers in similar situations? Which is the more profitable of two systems which fulfil the same husbandry requirements?

These are some of the problems which the economist can help advisory officers and producers to solve. But a first essential is a sound background of knowledge of the conditions appertaining to the industry or enterprise under review. In the East Midlands and indeed in the country generally, this vital information is not available for the horticultural industry.

The need for more economic data about horticulture has also been keenly felt in another field, namely in the work of teaching the horticultural students at the School of Agriculture.

Work already done.

In the East Midlands the only work done in this field consists of some cost studies of the production of tomatoes, celery, peas, carrots, savoys and spring cabbage. These were done some years ago and most of the data were, in fact, derived from farms rather than from market gardens. Some studies of financial results on horticultural units of various types have been undertaken at Wye, Reading, Aberystwyth and Bristol. But although these studies have been valuable, conditions of production and marketing vary within such wide limits that the results of these studies (in so far as they have been published) do not form an adequate basis for advisory and teaching work in this province.

Area of the Survey.

Early in 1950 the first step in a process designed to build up a general picture of horticultural production in the East Midlands province(1) was taken. The Melbourne area, on the borders of the counties of Derby and Leicester, was chosen for study. This area had the advantage of being in close proximity to the School of Agriculture and had a long established market garden industry supplying produce to local markets. It was thought that the cropping of the area had changed little over a long period of years and to a horticulturist an interesting feature of the landscape was the absence of glass either in glasshouses, frames or cloches. Many of the holdings are small and family labour is important, but in recent years there has been increased competition for the available supply of labour. It cannot be claimed that the area is in any way typical of the horticulture of the province but as the location for a pilot investigation it had several advantages.

(1)

The counties of Nottingham, Derby, Leicester, Rutland and Lincoln (Kesteven and Lindsey only).

Survey Method.

It was decided that most of the required information could best be obtained from producers by interview. The number of horticulturists within the area is not known with any accuracy. In fact 60 growers co-operated in the survey and it is thought that they represented nearly three quarters of the producers in the area.

The local advisory officers and representatives of the National Farmers' Union rendered valuable service in commending the survey to the attention of growers and by providing introductions to growers likely to co-operate in the study. Mr. Martyr, then on the staff of the School of Agriculture, gave much advice and assistance.

The Scope of the Survey.

From the start an attempt was made to make the survey as comprehensive as possible. In fact, the objective was to build up a picture which would convey a true impression of conditions in the area to an intelligent reader having no previous knowledge of the locality. It was intended that this summary should be largely of a descriptive character but it was hoped that data which could be used as a basis for a critical analysis of conditions in the area would be obtainable. The main items of information sought can be set out under the following heads:-

- (1) The number of horticultural units of each type and size. The distribution of cropping and stocking in the area as a whole and on the holdings surveyed.
- (2) The situation of holdings relative to roads, etc. Layout of holding, water supply - type and adequacy. Condition of drainage, soil type, level of soil fertility.
- (3) Systems of tenure, number of owner-occupiers, length of occupation, rentals, etc.
- (4) Management objectives, cropping and stocking policy, plans for the future, factors restricting development.
- (5) The type and volume of production. Area of each crop, estimated yield per acre, estimated receipts per acre.
- (6) Details of expenditure on rent, labour, manures, packing materials, transport, etc.
- (7) Investment in fixed equipment - sheds and buildings, glasshouses, frames, cloches, etc.

- (8) Machinery and equipment - type, number, age, cost, etc. - for cultivating, harvesting, spraying, irrigating.
- (9) Size of labour force - family or hired, regular or casual, age, source of supply, earnings.
- (10) Marketing - type of market, location of market, preparation for market, transport to market.
- (11) Problems - diseases and pests, competition from other areas, etc.

It is clear from the above outline that the survey was ambitious in its scope. In the light of experience it seems that it would have been better to have focussed attention on rather a narrower field. It was found, for example, that the system of production and marketing in the area is such that little or no information concerning receipts and expenditure can be obtained by the survey method. A large proportion of growers kept no records of cash sales, and as many of the sales were made direct to retailers or consumers this was an extremely important item. It must be stated on the other hand that, even where the information was available, many of the growers interviewed were not prepared to divulge it, despite every assurance that it would be treated with the strictest confidence.

For this reason, this study is incomplete in some extremely important respects. Much information of interest and value has emerged from this survey but the fund of knowledge regarding some of the most fundamental aspects of horticultural production in this area is still extremely small.

In particular, one of the main objectives of the survey was to obtain information regarding the production and sale of the various crops, the contribution of each to the income of the holding and the expenditure incurred under the various items. It was hoped to learn something of the variations in returns and expenses and of the reasons for these variations. Without this knowledge, little help can be given to growers on the organisation of the business side of their holdings.

This Department of Agricultural Economics has co-operated for many years with the farming community in the East Midlands Province and the willingness of farmers to provide information regarding the financial aspects of their business has enabled a mass of extremely valuable data to be built up within the Department. Many horticultural growers claim to be in serious economic difficulties - they complain of high costs of production, of competition from imports, of high marketing costs and middleman's charges.

But no real answer to these problems can be propounded until the economic efficiency of horticultural production and the organisation of marketing has been studied. This cannot be done until growers realise the necessity for providing the economist with the relevant information.

Although this survey of the Melbourne area failed to provide sufficient information, about 20 growers in various parts of the province, including Melbourne, have agreed to provide financial and quantitative data regarding their business. A number of these growers already have excellent records and Mr. K.A. Ingersent, who has undertaken this work, is hoping to obtain some valuable information on the economics of the horticultural industry from these accounts.

Despite its qualitative and predominantly descriptive nature the data derived from this survey has thrown into relief many of the problems of the area. Those persons who are familiar with the Melbourne district will find little that is new in this report but to others it will provide a cameo of a district that has many distinctive features and problems.

CHAPTER II

DESCRIPTION OF THE AREA

Melbourne is a small town in south Derbyshire with a population of just over 4,000 persons and situated in close proximity to a number of industrial towns providing markets for produce from the area. It is approximately eight miles from Derby, 17 miles from Nottingham and only a few miles from the industrial area around Swadlincote.

The market gardening area with which this report deals lies within a radius of two miles from the town. It is mainly in the parish of Melbourne, but extends into the parishes of Stanton-by-Bridge and Ticknall in Derbyshire and into Castle Donington, Isley Walton and Breedon-on-the-Hill in Leicestershire. The area is surrounded by farming land of the mixed arable cash crop and dairy type. Except for the Trent plain to the north, the country is undulating, and many of the market gardens are situated on south-facing slopes.

Soil Types.

The market garden holdings are on two types of soil; the light sandy loam of the Millstone Grit, and the heavier soils of the Keuper Marl. In addition there is some boulder clay overlaid on these soils. Figure 1 shows the location of the soil types within the market gardening area. The market gardens were originally situated only on the lighter sandy soils but have expanded onto the marl in development during the two world wars.

Water Supply.

There is a fairly good water supply from streams in the area, such as Ramsley Brook, and this would be sufficient for irrigation on many of the holdings. However, where sufficient water is not available in streams the piped supply is in most cases not adequate for the growers' needs on the fields.

Historical Development.

There were apparently a few market gardens in existence in Melbourne at the beginning of the nineteenth century, the area being mentioned by J. Farey⁽¹⁾ as one of the places in Derbyshire where gardens were established and "from their great use and accommodation to the surrounding neighbourhoods, ought to be more generally encouraged".

(1) JOHN FAREY, Senr... General View of the Agriculture of Derbyshire with Observations on the Means of its Improvement. Vol. II. London, 1813.

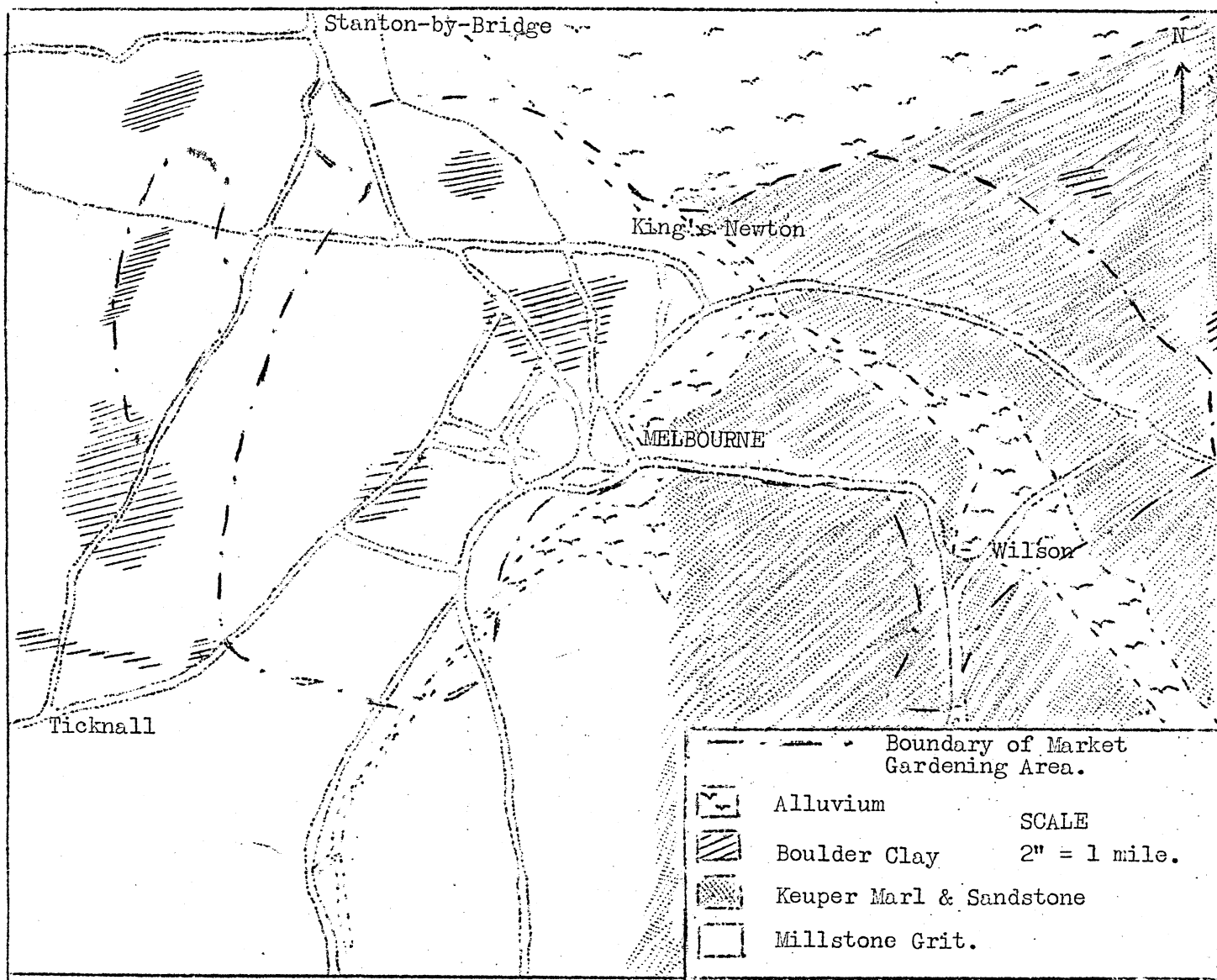


FIGURE I. Map of Melbourne District showing the Market Gardening Area in relation to Soil Types.

Writing in the middle of the nineteenth century J. J. Briggs⁽¹⁾ gives some information on the extent of market gardening in the district at that time. "From an estimate made as accurately as possible, there are, at the present time, about 240 acres under spade cultivation. Of these, 194 are occupied by persons, who, in a greater or lesser degree, send vegetables to market. This land is divided into plots about 150 in number, varying in extent from one rood to four or five acres, and rented at prices according to soil and situation, of from £3. to £9. and £10. per acre". "The great demand for vegetables has caused to spring up a class of men who rent from three to four acres each - cultivate them with the spade, and then take the produce to Derby, for sale".

In addition to these market gardens there were a number of allotments. Apparently some belonged to workers on the local farms and estates. Briggs said "the condition of the labourer here is certainly superior to that in many districts. His weekly wages vary from nine to 12 shillings, and on some farms, each man has 120 yards of ground, well manured, free of expense, upon which to grow potatoes". This, however, was a fairly widespread movement of this period when poverty was causing considerable unrest among the workers.

In 1843 Lord Melbourne divided up some of his land for allotments intended as garden ground for use of the poor, and this was known as "Lord Melbourne's potatoe land".⁽²⁾ A committee was set up to supervise these allotments and more land was gradually included. The committee continued until 1922 when the allotments came under the direct control of the Estate Office in Melbourne. During the 1914-18 war the County Council purchased some land which was divided up into smallholdings.

One of the most important reasons for the rise of market gardening in the area was the increasing population of the local industrial towns. Briggs wrote "the town of Derby affords a ready market for the produce, and what is not required there is sold to regular dealers from the Peak of Derbyshire, and the populous districts of the Potteries". The population of Derby rose, from 43,000 in 1861 to 106,000 in 1901, and by 1951 had reached 141,000.

The produce was taken to market by horse and cart, and the grower returned with a load of manure from the stables in the town. This supply of cheap manure was another incentive for growing vegetables. The practice was only discontinued when the number of horses declined and the growers are now finding difficulty in replacing this source of manure.

-
- (1) J. J. BRIGGS. The History of Melbourne, in the County of Derby. London. 1852.
- (2) A. S. JACQUES. Melbourne. 1933.

The area originally had a reputation for producing early crops. Briggs wrote "for the growth of vegetables this neighbourhood seems peculiarly fitted; the character of the surface is undulating, and presents many warm slopes and sheltered aspects. The soil, too, near the town is light and friable; the climate kindly; consequently, these natural advantages, combined with the skill and industry of the persons engaged in horticulture, enable them to produce their vegetables earlier than any parish in the county".

This advantage was only relative to the other local areas supplying Derby market. The climate and soil are not particularly suited to market gardening in comparison with the more important producing areas and when transport facilities increased the importance of Melbourne as an "early" area declined.

Another reason for the rise of market gardening in the Melbourne area during the nineteenth century was the development of the railways, which was particularly rapid during the 1840's. Many railways were fenced with "Quicksets", a type of whitethorn, which were grown in Melbourne. As the demand for "Quicksets" declined the land was turned over to vegetable cultivation.

Market gardening has thus been established in the area for over a 100 years. Although there have been many changes much of the traditional system of cultivation remains today. The average size of holding has increased considerably and there has been a change from the spade cultivation referred to by Briggs in 1850 to horse and, later, to tractor cultivation. With improved transport facilities and increasing competition the growers are selling their produce further afield.

There has been little outside influence in the area to promote changes in the area in cultivation systems. Out of the 60 growers included in the survey only five had not been born and brought up in Melbourne, and few had any experience of horticulture outside the area. It is only in recent years that through the efforts of the National Agricultural Advisory Service and the National Farmers' Union that many growers are coming into contact with the newer and everchanging methods of horticultural production.

CHAPTER III

SIZE OF HOLDING AND LAND UTILISATION

One of the primary objects of the survey was to obtain descriptive material on the type of market garden holdings in the Melbourne area. Information was obtained on the size and layout of holdings, the number and type of crops grown, the number of livestock kept and soil fertility.

Size of Holdings.

The 60 holdings surveyed had a total of 1,821 acres, or approximately 30 acres per holding. The size range was from under five to over 100 acres. Table 1 shows the number of holdings in each of six acreage groups. Although more than 60 per cent of the holdings were under 30 acres in size, these accounted for only a third of the total acreage. In fact nearly 50 per cent of the acreage was on the 11 holdings of over 50 acres in size.

SIZE AND ACREAGE DISTRIBUTION 1949-50

Size group	Survey holdings			
	Number of holdings	Percentage of all holdings	Acreage in each size group	Percentage of total acreage
Up to 10 acres	11	18	73	4
10 and up to 20 acres	17	29	239	13
20 " " " 30 "	12	20	286	16
30 " " " 50 "	9	15	318	18
50 " " " 100 "	8	13	534	29
100 acres and over	3	5	371	20
All survey holdings	60	100	1,821	100

Type of Crops Grown.

Of the total acreage covered by the survey just over 70 per cent was under fruit and market garden crops. Farm crops (excluding potatoes) occupied another 13 per cent and the remainder was accounted for by pasture and buildings.

LAND UTILISATION JUNE 1950

TABLE 2. Survey holdings

Item	Acreage	Percentage of total
Vegetables*	1,187	65
Small fruit	33	2
Orchard fruit	65	4
Farm crops and fallow	231	13
Pasture - permanent	197	11
Pasture - temporary	81	4
Buildings	27	1
Total	1,821	100

* Including potatoes.

(1) Vegetables.

A wide variety of vegetables is grown within the area, although brassicas are the predominant group. Table 3 shows the total acreage of each vegetable produced by the co-operating growers, and its importance in relation to the area of all vegetables. Brussels sprouts, cabbage, savoys, broccoli and cauliflower together accounted for 60 per cent of the total. Brussels sprouts occupied more land than any other vegetable with 20 per cent of the total acreage. Other crops of importance were spring cabbage, cauliflower and broccoli, and rhubarb.

(2) Fruit.

The total area of fruit grown was only 100 acres. A third of this was under small fruit, mainly strawberries. The remainder was under orchards, the majority of which were old and in a neglected condition, receiving little attention.

(3) Farm crops and pasture.

Farm crops accounted for 13 per cent of the total acreage in the survey. A fact which is not brought out in Table 2 is that the majority of the farm crops were grown on the edge of the area where market gardening and farming are practised on the same holding. But even the more typical market gardeners in the area sometimes included a small area of farm crops in their cropping programme. About 36 per cent of the acreage of farm crops was on holdings which could be called primarily market garden holdings.

ACREAGE OF VEGETABLES AND FRUIT 1949-50

TABLE 3

Crop	Acreage	Survey holdings
		Percentage of total acreage
<u>VEGETABLES (FOR HUMAN CONSUMPTION)</u>		
Brussels sprouts	271	20
Cabbage - spring	111	8
" - summer	51	4
" - autumn	20	1
" - winter	24	2
Savoys - autumn	45	3
" - winter	82	6
Kale and sprouting broccoli	5	-
Cauliflower	94	7
Broccoli	139	10
Carrots	2	-
Parsnips	8	1
Turnips and swedes	3	-
Potatoes - early	30	2
" - main crop	91	7
Leeks	20	1
Onions - dry bulb	14	1
" - salad	19	1
Beans - broad	27	2
Beans - runner and French	39	3
Peas	88	6
Lettuce	52	4
Celery	7	1
Beetroot	30	2
Radishes	4	-
Rhubarb	98	7
Vegetable marrows	6	-
Red cabbage	5	-
Other vegetables	6	-
Flowers and nursery stock	9	1
Total	1,400*	100
<u>FRUIT</u>		
Strawberries	31	32
Raspberries	1	1
Gooseberries	1	1
Apples	19	20
Pears	28	28
Plums	18	18
Total	98	100

* This figure is larger than that for the acreage of vegetables given in Table 2 as there was some double cropping during the year.

There was some pasture on two thirds of the holdings and only 38 per cent of the area of grass was accounted for by holdings mainly concerned with farming. The area of loys was small and few of the market gardeners had made any advance in this direction.

Crops Grown by Size of Holding.

The proportion of land devoted to different crops tended to vary according to the acreage of the holding. In Table 4 the utilisation of the land is shown according to acreage size groups revealing that there is a considerable difference between holdings of under and over 50 acres. The four groups under 50 acres are similar in their use of land, although on the under 10 acre group only a very small percentage of the land is devoted to grass and a higher percentage to other vegetables. In the four groups the proportion of brassica crops was approximately 50 per cent. The holdings over 50 acres in size devoted less land to brassica crops and more to farm crops.

LAND UTILISATION BY SIZE OF HOLDING 1949-50

TABLE 4		Survey holdings						
		Size group	Up to 10 acres	10 and up to 20 acres	20 and up to 30 acres	30 and up to 50 acres	50 and up to 100 acres	100 acres and over
No. of holdings		11	17	12	9	8	3	60
		----- P e r c e n t -----						
Vegetables:								
Brassica crops		50	50	46	47	40	28	41
Root crops +		6	8	10	9	11	11	10
Salad crops		6	5	4	6	4	2	4
Other*		25	15	14	16	11	9	13
Small fruit		3	2	2	2	2	1	2
Orchard fruit		4	3	2	3	2	6	3
Farm crops and fallow		3	4	8	5	16	26	13
Grazing - permanent and temporary		3	13	14	12	14	17	14
Total		100	100	100	100	100	100	100

+ For human consumption only.

* Beans, peas, rhubarb, etc.

Recent Changes in Cropping.

The last 12 years have seen some significant changes in the cropping pattern of the area and these are clearly illustrated by the parish acreage figures for the years 1939 to 1950 set out in Table 5. It should be borne in mind that these figures refer only to the Parish of Molbourne whilst the survey itself included

parts of other parishes and that the acreages of several farms which have no connection with horticulture are also included in the figures.

CHANGES IN LAND USE IN THE PARISH OF MELBOURNE 1939 TO 1950

TABLE 5.

Year								Acres
	Vegetables, flowers and glasshouse crops	Small fruit	Orchard fruit	Corn	Potatoes	All other crops	Permanent grazing	Total crops and grass*
1939	805	33	53	173	33	181	1,214	2,492
1940	845	24	55	287	58	176	1,003	2,448
1941	896	23	47	316	75	219	892	2,468
1942	907	11	43	342	62	240	914	2,519
1943	924	13	39	331	78	321	708	2,414
1944	980	12	42	316	71	342	688	2,451
1945	985	21	38	326	78	274	695	2,417
1946	1,002	18	47	316	75	302	706	2,466
1947	1,013	16	45	387	74	257	679	2,471
1948	1,048	17	39	337	87	202	764	2,494
1949	961	17	38	362	92	400	592	2,462
1950	929	17	38	381	134	244	675	2,418

* Excluding rough grazings.

SOURCE: Ministry of Agriculture and Fisheries. Statistics Branch.

The first point of interest to be noted is the increase in the area under cultivation at the expense of the acreage of permanent grazing. This transfer was partly in response to the need for maximum production of food during the war and partly a reflection of the reduced demand for grazing as horses were replaced by tractors.

Secondly, the reduction in the acreage of small fruit and orchard fruit is significant. Although this reduction was largely a consequence of the wartime food production policy, the slow rate of post-war recovery can be explained only in relation to the labour supply situation and the general attitude of the growers.

The third trend to be observed in the table is the increase in acreage of potatoes, corn and vegetables. It is true that the vegetable acreage declined in 1949 and 1950 but the residue appears to have been taken up by corn and potatoes. This would seem to suggest that the parish of Melbourne is becoming less horticultural and more agricultural.

Diversified Cropping.

A feature of this market gardening area is the highly diversified system of cropping on most holdings. On an average each grower produced 20 crops out of approximately 38 crops grown in the area (counting spring and winter cabbage and savoys as separate crops). Only one holding had under 10, whilst one had as many as 30 crops. In addition there was little standardisation of crop varieties. The result is that the produce offered for sale consisted of small quantities of many different crops and varieties.

Livestock.

The total number of livestock on the 60 holdings in 1949-50 were as follows:-

Cattle	103 ⁽¹⁾
Sheep	-
Work horses	45
Pigs	147
Poultry	1,100

The only holdings keeping cattle were the larger type combining farming and market gardening. A few pigs and poultry were kept by the majority of growers for household use.

Work horses were still used on 38 holdings, but five of these growers disposed of their horses during the year of the survey. Livestock are, in fact, of little importance in the area.

Soil Fertility.

It is the opinion of many growers and of the advisory officers that soil fertility in the area is declining. This decline is said to be due to the reduction in the quantity of farm yard manure used in the area. When horses were in general use in neighbouring towns, stable manure was available in large quantities and some growers often applied as much as 40 tons per acre. Town manure is now practically non-existent and there is a keen demand for any farmyard manure that local farmers are willing to sell. But supplies from local farms are inadequate to meet the demand and many growers are using hop manure although the supply of this is not always plentiful. The black hop manure is obtainable free apart from carriage but the better quality type costs in the region of £1. per ton plus carriage. Farmyard manure is not cheap to buy and with haulage costs added, it can be expensive. There is reason to believe that the use of artificial manures has not been expanded as supplies of farmyard manure have fallen off. While it is true that artificials are not a complete substitute for farmyard manure there is almost certainly considerable opportunities for the use of heavier dressings of artificial manures in the Melbourne area.

(1)

On seven holdings only.

CHAPTER IV

SOURCES OF REVENUE

It has been shown in Chapter III that 65 per cent of the land on the holdings surveyed was under vegetables. It does not, however, follow that the same proportion of the revenue of the business was derived from vegetables. One of the objectives of the survey was to ascertain the quantities of the various crops sold and the prices received. Unfortunately, the replies to this part of the survey questionnaire were so incomplete as to defy analysis. This was due in part to some reluctance on the part of the growers to divulge this information and in part to the fact that the growers themselves had no reliable records of yields or of prices received. It will be clear from Chapter IX that the absence of records can be attributed, in part at least, to the prevailing system of marketing produce from the holding.

For the majority of growers, the main sources of revenue in order of importance were market garden crops, fruit, livestock and livestock products, and farm crops. No information is available to show the actual receipts of these different sources or to indicate the contribution of each crop to the total revenue from vegetables.

In the absence of data from the Melbourne area itself, it is worth while looking at some figures relating to other areas. These are set out in Tables 6 and 7. One of the main features of these tables is that they both show clearly the decline in the intensity of land use as size of holding increases.

RECEIPTS PER ACRE. 28 MARKET GARDENS SOUTHERN PROVINCE 1948-49

TABLE 6

	Group I Labour input £100 per acre and over	Group II Labour input between £50 and £99 per acre	Group III Labour input under £50 per acre
Number of holdings	9	7	12
Average size (acres)	6½	10¼	125¼
Receipts per acre (£)	318	120	58

SOURCE: University of Reading. Department of Agricultural Economics. Financial Results on 34 Fruit and Market Garden Holdings in the Southern Province 1948-49. Farmers' Financial Report No. 13. March, 1950.

For the Southern Province the production per acre from the small holdings with a labour input of over £100. per acre was five times that of the large holdings with under £50. per acre labour input. The same trend is shown by the Evesham results where the holdings under 10 acres had average receipts of £190. compared with £120. on the holdings over 100 acres in size.

AVERAGE PRODUCTION PER ACRE FOR 26 MAINLY VEGETABLE HOLDINGS IN THE VALE OF
EVEESHAM. 1949 CROP YEAR

TABLE 7

Item	Size Group			
	I 1 - 10 acres	II 10 - 50 acres	III 50 - 100 acres	IV 100 acres and over
No. of holdings	12	7	4	3
Average size (acres)	6	21	71	215
Production [†] per acre:	£	£	£	£
- Vegetables	169	131	118	96
Fruit	15	21	32	20
Other produce	1	13	3	5
Livestock	1	5	-	1
Sundries	6	2	1	2
Total	192	178	154	124

[†]Receipts adjusted for valuation changes.

SOURCE: E. B. FEKETE. Vale of Evesham. Financial Results of Market Garden Holdings for the Cropping Year 1949. University of Bristol. Department of Agricultural Economics, 1950.

Some figures⁽¹⁾ are available for recent years showing net incomes on horticultural holdings in other parts of the country. Unfortunately there have been so many changes from year to year in the sizes of the holdings supplying the necessary information that it is impossible to arrive at any valid conclusion regarding the trend of average incomes, although they appear to be falling steadily. No direct answer can therefore be given to the question how have horticultural incomes compared with farm incomes over the last 15 years or so? But some indication of the relative position can be obtained from a comparison of the indices of prices of agricultural and horticultural products as shown in Table 8.

(1) Ministry of Agriculture and Fisheries. Farm Incomes in England and Wales, H.M.S.O.

Farm Income Series No. 1 1944-45 to 1947-48
" " " No. 2 1948-49
" " " No. 3 1949-50

ANNUAL INDEX NUMBERS OF PRICES OF FRUIT, VEGETABLES, GLASSHOUSE PRODUCE AND ALL AGRICULTURAL PRODUCTS, ENGLAND AND WALES

(1927-28 to 1929-30 = 100)

TABLE 8

Year	Fruit	Vegetables	Glasshouse Produce	Fruit, vegetables and glasshouse produce	All agricultural products [†]
1936-37	95	83	98	89.5	90.0
1937-38	127	97	94	108.5	93.0
1938-39	103	90	98	96.0	89.5
1939-40	115	127	136	123.5	112.0
1940-41	217	159	275	197.5	144.5
1941-42	235	203	228	219.0	162.0
1942-43	212	219	186	211.0	165.5
1943-44	212	233	195	218.0	168.0
1944-45	212	221	185	212.5	171.0
1945-46	192	214	183	201.0	176.0
1946-47	237	310	212	269.5	199.5
1947-48	269	245	276	259.5	219.5
1948-49	236	201	291	229.0	222.5
1949-50	233	342	269	288.0	241.5
1950-51	241	201	238	223.5	244.5

[†]Excluding acreage payments.

SOURCE: Ministry of Agriculture and Fisheries. Statistics Branch.

These indices show that in 1936-37 agricultural and horticultural prices were roughly on a level. In 1940-41 horticultural prices shot upwards and, with some fairly wide fluctuations from year to year, remained substantially above agricultural prices until 1948-49. Since then agricultural prices have moved upwards with the steadiness that has been characteristic of the past 15 years but after showing a big rise in 1949-50 the index of horticultural prices fell well below that of farm prices in 1950-51 for the first time in 12 years. Agricultural incomes did not show the same steady upward trend of agricultural prices, but it seems likely that, until a year or so ago, net incomes were higher on horticultural holdings compared with pre-war, than on farms.

What about the position in the Melbourne area? The probability is that it differed from that in other areas only to the extent that the pattern of production was different. It has already been suggested that in the Melbourne area the emphasis appears to be more on the production of vegetables and less on production from glasshouse and fruit than in some other areas. The figures in Table 8 show that from 1942-43 to 1946-47 vegetable prices were higher, compared with prewar, than the prices of fruit and glasshouse produce. In the next four years, except for 1949-50, the opposite was true. The inference is perhaps that the Melbourne area was

well placed to take advantage of the price movements that occurred during the war years. After the war, the trend was unfavourable by comparison with the prices of fruit and glasshouse produce. It is possible, therefore, that the net incomes of growers in the Melbourne area were relatively high in the war years and that since 1947-48 net incomes in Melbourne have declined more than those in some other horticultural areas.

CHAPTER V

MAIN ITEMS OF EXPENDITURE

The information regarding expenditure derived from the survey was so scanty that it yields only a very rough impression of the magnitude of total expenditure or of the relative importance of the various items. It is desirable therefore to examine the data available from other sources. Table 9 shows the expenditure per acre on two groups of horticultural holdings in 1949-50. The Southern and South Western Group are in the Reading University province and have an average size of 40 acres which is one third larger than that of the holdings surveyed in the Melbourne area. The holdings in the Kent Group are much larger in size and specialised in the production of hops, fruit and vegetables. The information for these holdings was collected by the South Eastern Agricultural College at Wye.

DISTRIBUTION OF EXPENDITURE ON TWO MARKET GARDEN GROUPS 1949-50

TABLE 9

Item	Southern and South Western		Kent hops, fruit and vegetables	
No. of holdings	31		20	
Average size (acres)	40		160	
	£ per acre [†]	Per cent	£ per acre [†]	Per cent
Livestock purchased	2.4	2.9	1.7	3.0
Labour [‡]	33.8	41.9	24.0	44.0
Feeding stuffs	2.6	3.2	3.4	6.3
Fertilisers	7.3	9.1	4.1	7.5
Seeds	5.2	6.5	1.9	3.5
Rent	3.2	4.0	2.0	3.7
Rates	0.1	0.2	0.3	0.5
Machinery purchased	4.0	4.9	3.9	7.2
Miscellaneous	22.0	27.3	13.2	24.3
Total	80.6	100.0	54.5	100.0

[†]Adjusted to exclude rough grazings.

[‡]Excluding labour of the farmer and his wife. The additional cost of this was estimated at £6. per acre in the Southern Group and 10s. 0d. per acre in the Kent Group.

SOURCE: Ministry of Agriculture and Fisheries. Farm Incomes in England and Wales 1949-50. Farm Income Series No. 3. H.M.S.O. 1952.

This table shows clearly the high level of expenditure on holdings of these types. An expenditure of £54.5 per acre in the Kent group where the average size of holding was 160 acres can be compared with an expenditure of £34 per acre on a group of 255 East Midlands' farms⁽¹⁾ (average size 166 acres) in the same year. In the Southern group where the average size was only 40 acres expenditure was very much higher at £81 per acre. The next point to notice is the predominance of labour as an item of cost. In fact, labour is the only single item of any real significance. It is possible that expenditure on fertilisers comes second in order of importance. On the other hand, relatively little was spent on the purchase of livestock and feeding stuffs.

Figures from the Vale of Evesham in Table 10 show that the level of expenditure there was very much higher than in either of the two groups mentioned in Table 9. The figures show clearly the effect of size of holding

DISTRIBUTION OF EXPENDITURE ON 26 MAINLY VEGETABLE HOLDINGS IN THE VALE OF EVESHAM 1949 CROP YEAR

TABLE 10

Item	Size group			
	1 - 10 acres	10 - 50 acres	50 - 100 acres	Over 100 acres
No. of holdings	12	7	4	3
Average size - acres	6	21	71	215
	----- £ per acre -----			
Feeding stuffs	1	1	-	3
Crop expenditure	23	19	25	17
Rent	6	3	4	4
Labour - Paid	50	45	62	53
" - Unpaid	68	28	7	1
Implements	18	17	14	16
Miscellaneous	17	23	28	16
Total	183	136	140	110

SOURCE: E. B. FEKETE. Vale of Evesham. Financial Results of Market Garden Holdings for the Cropping Year 1949. University of Bristol. Department of Agricultural Economics. 1950.

on expenditure per acre. Labour is the biggest item of expenditure in Evesham as in the other areas. The importance of the manual labour of the farmer and his wife on the smaller holdings is also evident. What of the Melbourne area? Figures for the very few holdings that provided information for this part of the survey suggest that the level of expenditure is lower in Melbourne than in the South and South West and far lower than Evesham. The range of expenditure recorded in Melbourne on a small sample of holdings in 1949-50 was from £20. to £70. per acre. For the main item, labour, the estimated expenditure on 20 holdings was £46. per acre. This was above that on the rather larger holdings

(1) University of Nottingham School of Agriculture. Department of Agricultural Economics. Farm Management Notes. No. 7. Spring, 1952.

in the Southern and South Western group but much lower than that on any of the Evesham size groups.

Thirty holdings provided some information about their expenditure on fertilisers, farmyard and hop manure. Nine of these growers spent less than £5. per acre, 12 between £5. and £10. and nine spent more than £10. per acre. There is, however, some reason to believe that the average for all growers would be less than the £7. per acre for these 30.

Miscellaneous expenses include such items as insurance, haulage, market expenses, purchase and hire of packing materials, and are of considerable importance on horticultural holdings.

In the following chapter labour is dealt with in more detail. As it is the main item of expenditure, the problem of labour use is one that deserves close study. In the chapter on land tenure some further consideration will be given to the levels of rent prevailing in the Melbourne area.

CHAPTER VI

LABOUR

This chapter will be devoted to a further examination of the expenditure on labour in the Melbourne area and of the available labour supply and its utilisation. The problems connected with the employment of labour are some of the most difficult facing the Melbourne grower. As indicated in the previous chapter expenditure on labour is low compared with more intensive market garden districts but the labour cost is still an important item in the determination of profits.

Between 1939 and 1950 minimum wage rates rose by about 170 per cent but in 1950 the average price level for horticultural produce was only 80 per cent above the 1939 level. The growers thus have considerable incentive to reduce the labour requirements of their holdings.

Another problem accentuating the tendency towards less intensive production is the shortage of both regular and casual workers which has arisen since 1939. The second half of this chapter will consist of an examination of the causes of this shortage in the Melbourne area.

Expenditure on Labour.

On each of the 60 holdings visited information was obtained on the number of regular workers employed and for 20 holdings further details were obtained of expenditure on labour. Data about casual workers were difficult to obtain, especially where the grower relied on his memory for details of employment and estimates of expenditure on this item are probably low because the grower has been unable to supply complete information.

ESTIMATED EXPENDITURE ON LABOUR BY SIZE OF HOLDING
MELBOURNE 1949-50

TABLE 11 20 Survey holdings

Size group	No. of holdings	Paid		Unpaid		Total labour	Paid labour as percentage of all labour
		Regular labour	Casual labour	Family labour	Farmer & wife		
		- £	per	acre	---		
Up to 10 acres	2	10	7	-	46	63	27
10 and up to 20 acres	8	27	-	7	26	60	46
20 " " " 30 "	4	19	4	7	17	47	49
30 " " " 50 "	4	20	2	15	7	44	50
50 acres and over	2	30	1	6	-	37	83
All holdings	20	23	2	9	12	46	55

Table 11 shows the expenditure on hired labour and an estimate of the cost of family labour on 20 market gardens grouped by size of holding. The total labour cost was £46. per acre on an average of all size groups but holdings under 10 acres had an expenditure nearly double those of over 50 acres. The large holdings placed great dependence on hired labour but 75 per cent of the labour of the lowest acreage group was that of the grower and his family.

Small holdings had proportionately more hired casual labour partly because they carried a higher percentage of intensive crops such as small fruit, beans, peas, etc.⁽¹⁾ requiring seasonal labour. There was a tendency among the smaller growers to keep the regular labour force as small as possible and to rely on casual labour often supplied by unpaid members of the family. Large growers who find it difficult to obtain sufficient casual workers attempt to build up a regular labour force and to plan the cropping of the holding so that labour requirements are fairly even throughout the year.

RELATION OF EXPENDITURE ON LABOUR PER ACRE AND LAND UTILISATION 1949-50

TABLE 12

20 Survey holdings

Expenditure* on labour (£ per acre)	No. of holdings	Average acreage	Percentage of acreage under:				
			Brassica crops	Root crops	Other vegetables, flowers, etc.	Small and top fruit	Farm crops, pasture and buildings
Up to £40.	3	47	35	6	13	2	44
£40 and up to £50	4	27	50	11	18	5	16
£50 " " " £60	8	23	49	5	24	6	16
£60 and over	5	11	55	7	20	3	15
All groups	20	24	47	7	19	4	23

* Including an estimate for unpaid family labour.

It is noticeable in Table 12 that labour costs per acre are lowest on the larger holdings. Those growers with a labour bill of under £40 per acre had 44 per cent of their land under farm crops or pasture, whilst those with an expenditure on labour of over £40. per acre had only about 15 or 16 per cent of their land under farm crops.

(1)

See Table 4.

A comparison of the labour expenditure of the holdings in the survey with that of some farming types and with another market garden area, illustrates the relatively low expenditure in Melbourne. Labour expenditure for 1949-50(1) varied between £7. and £14. per acre for dairy farms and between £6. and £19. per acre for arable farms of various types and sizes.

Although considerably higher than either of these farming types, the estimate of £46. per acre for Melbourne is far less than that for holdings in the Evesham market garden area.

An investigation carried out recently by Bristol University estimated average labour costs for 26 market garden holdings as given in Table 13. In all size groups labour expenditure was considerably higher than for the corresponding groups in the Melbourne area whilst the average of £90. per acre was nearly double the Melbourne figure.

AVERAGE EXPENDITURE ON LABOUR FOR 26 MAINLY VEGETABLE HOLDINGS IN
THE VALE OF EVESHAM. 1949 CROP YEAR.

TABLE 13

Size group	No. of holdings	Paid labour	Unpaid labour	Total	Paid labour as percentage of all labour
		- - £ p e r a c r e - -			%
Up to 10 acres	12	50	68	118	42
10 and up to 50 acres	7	45	28	73	62
50 " " " 100 "	4	62	7	69	90
100 acres and over	3	53	1	54	98

SOURCE: E.B. Fekete. Vale of Evesham. Financial Results of Market Garden Holdings for the Cropping Year 1949. Bristol University. Department of Agricultural Economics. 1950.

There are several reasons for the relatively low labour expenditure of the holdings in the survey:-

- (1) there is a high proportion of family labour and estimates of cost were based on the minimum agricultural wage probably without sufficient allowance being made for overtime. It can be seen from Tables 11 and 13 that the proportion of unpaid to total labour in all acreage groups was higher in Melbourne than in Evesham.

(1) SOURCE: Ministry of Agriculture and Fisheries. Farm Incomes in England and Wales 1949-50. Farm Income Series No.3. H.M.S.O. 1952.

- (2) the extensive type of vegetable production predominant in the area. Although the labour requirements are higher than those for farming they are low when compared with other more intensive types of horticulture. At present this may be partly due in turn to
- (3) the shortage of labour. Since the war the growers have been unable to obtain sufficient workers and have been obliged to keep labour expenditure low for this reason. A fall in the intensity of cultivation has resulted. The acreage of small fruit in 1950 was only half that in 1939 mainly because of a shortage of fruit pickers.

Numbers of workers employed.

As already mentioned data was obtained from the 60 holdings on the number of regular workers employed, and the results are shown in Table 14.

TYPES OF REGULAR WORKERS EMPLOYED* 1949-50

TABLE 14		Survey holdings	
Family labour		Hired labour	
Occupiers	51	Boys under 18 years	5
Other men and boys	50	" 18 to 21 "	25
Women	9	Men 21 to 65 "	77
		" 65 years and over	7
		Woman	27
	<u>110</u>		<u>141</u>
Total acreage		1,721	

*

The acreage for which this information is available is not the same as the total acreage of the survey as complete information was not obtained on one farm which had been split up during the year of the survey.

The majority of the growers did manual work on the holdings, and very few holdings were under the supervision of a manager. The area is essentially one of working growers partly due to the shortage of labour, but mainly to the fact that the incomes from these smallholdings with their relatively low intensity of cultivation are not high enough to make the employment of a manager an economic proposition.

Few of the women of the family work fulltime on the holdings. They act as a source of casual labour at times when labour requirements are particularly high (such as helping to pick crops for market especially strawberries, peas, etc). The total number of women, both family and hired,

working fulltime on the holdings is small, constituting only 14 per cent of the total labour force.

Family labour, including that of the growers themselves, accounted for nearly 44 per cent of the total number of regular workers employed on the holdings in the sample and the hired workers were often relatives of the growers.

The average number of acres per regular worker for the area was as follows:-

Men	1 per 9.4 acres
Boys (under 21)	1 per 55.5 acres
Women	1 per 47.8 acres
All workers	1 per 6.9 acres
Man-units(1)	1 per 7.2 acres

There is on an average one worker for nearly seven acres of crops and grass, or if an estimate is taken of the work capacity of boys and women in relation to that of men, there is one man-unit per 7.2 acres.

The Supply of Labour.

Many growers held the opinion that there was a shortage of labour in the area and several reasons are suggested:-

(a) The war completely disrupted the normal channels through which the growers had been obtaining workers. The Melbourne area has specialised in market gardening for over a hundred years during which time a labour force of skilled workers trained in the traditional methods of the district has been built up. There was little to tempt the men away from the land. Industry was of no importance in the town of Melbourne itself until the 1914-18 war, and during the period between the wars the factories offered little employment. The women worked as casuals for fruit picking, onion bunching and other seasonal tasks. When the war came in 1939 a number of the men went into the forces, and when they returned many went into industry where higher wages were being offered. Other workers, both men and women, went into industry during the war either in local towns or in the factories in the district itself. When the war ended these workers did not return to the land; industry was still offering higher wages, and the women could find easier and more profitable employment in the factories.

(1)

Boys calculated as having 75 per cent of work capacity of men for market gardening tasks.

Women calculated as having 90 per cent of work capacity of men for market gardening tasks.

As shown in Table 15 the total number of agricultural workers in the Melbourne parish rose during the war from 263 in 1939 to 346 in 1946. By 1950 it had fallen again to the 1939 level and was below that of 1935. In 1950 there were fewer regular male workers over 21 years, but more women and boys than prewar, and the number of casual workers was approximately the same. During the war the total number of workers was kept up by the Women's Land Army and by prisoners of war.

CHANGES IN NUMBERS OF AGRICULTURAL WORKERS AND ARABLE ACREAGE
IN MELBOURNE PARISH 1935 TO 1950

TABLE 15

Year	Regular workers			Prisoners of war	Casual workers	Total workers	Market garden crops and fruit acres	All arable crops acres
	Males		Women					
	21 years and over	Under 21 years						
1935	159	32	17	-	74	282	948	1,326
1939	156	23	20	-	64	263	891	1,278
1940	140	22	23	-	72	257	924	1,445
1941	146	23	19	-	75	263	966	1,576
1942	136	19	37	-	111	303	961	1,605
1943	134	24	49	-	102	309	976	1,706
1944	118	22	64	9	94	307	1,034	1,763
1945	113	23	75	29	87	327	1,044	1,722
1946	111	31	59	75	70	346	1,067	1,760
1947	112	41	48	49	57	307	1,074	1,792
1948	113	42	48	7	85	295	1,104	1,730
1949	119	47	32	-	64	262	1,016	1,870
1950	124	40	26	-	72	262	984	1,743

SOURCE: Ministry of Agriculture and Fisheries. Statistics Branch.

(b) From the data given in Table 15 it would appear that the number of workers available in Melbourne parish has fallen by only seven per cent since 1935. However, when examined against the acreage of tillage it will be seen that in 1950 these workers were doing the work on 25 per cent more arable land and whereas in 1935 there was one regular worker for every six acres of arable land, there is now only one for every nine acres.

(c) Another problem accentuating the labour shortage is the lack of skilled horticultural workers in the area. The growers have thus to employ unskilled workers and lose considerable labour time in training them.

C H A P T E R VII

TENANTS' CAPITAL

There are three partners in the agricultural industry, namely, the landlord, the tenant and the worker. Both the landlord and the tenant must contribute some capital for the running of the business and that provided by the landlord is usually in a more permanent and fixed form than that which is supplied by the tenant. The owner-occupier fills the role of both landlord and tenant and it is therefore often difficult to distinguish between the contribution to capital which he makes in his capacity as landlord and in his capacity as tenant. Of the growers in the survey 37 per cent were owner-occupiers, 43 per cent rented their holdings and the remainder partly owned and partly rented their land. Even when the distinction between landlord and tenant is clear, it is often found that the tenant is assuming some of the responsibilities of the landlord by erecting buildings and other fixed items of equipment on rented land. In this chapter attention will be focussed on the investment in tenants' capital by the growers in the survey. The following chapter on 'Land Tenure' will deal with the landlords' investment in the holdings surveyed.

It is a characteristic feature of production from the land that the operators' capital requirements are largely derived from current or recent earnings. The units of production are often so small that no form of loan capital is utilised. It follows therefore that the amount of money available for investment depends very largely on the level of net income. It is only in times of prosperity that any substantial surplus of income is available to put back into the holding and there is reason to believe that very little new investment occurred in the Melbourne area between the two world wars. During the last war a great deal of investment in new equipment accompanied the change over from horse to tractor power. During the survey the Melbourne growers were insistent that profits from horticulture had now fallen below the war-time level and, if this is so, then the amount of new capital invested will almost certainly decline.

The size of the surplus available for investment will depend not only upon the level of net income but upon the cost of living, the level of taxation and the alternative opportunities for spending. The amount actually invested may also be determined by the amount of credit available from various sources. It appears that these growers depend very little on credit of any form. Fertiliser and seedsman's bills are paid promptly if possible in order to take advantage of the discount and as two thirds of the growers market their own produce there is little opportunity to borrow from a wholesaler, although this is a recognised practice among many horticulturists. It was difficult to determine whether the landlords helped the growers by allowing rents to remain unpaid for any length of time but on the whole it seemed doubtful. The growers have obtained few loans of a long-term nature from banks or other sources of agricultural credit although in the last two or three years it seems that some have fallen back on bank overdrafts.

The amount of tenants' capital invested in the Melbourne holdings at their present level of cultivation is not large in comparison with that invested in more intensive types of horticultural production. Cultivation on these holdings consists mainly of a relatively extensive type of vegetable growing, whilst the types of horticultural production requiring a high capital investment, such as the production of crops under glass and of orchard fruit, are of relatively little importance. The main channels of investment in tenants' capital in Melbourne are:-

- (1) machinery and equipment
- (2) glasshouses, Dutch lights, etc.
- (3) orchard fruit
- (4) irrigation

(1) Machinery and Equipment.

The motive power of the 60 holdings at the time of the survey consisted in total of 72 medium and light tractors, 26 one and two-wheel market garden tractors, 60 lorries and 45 horses. In addition 30 of the growers had cars which in most cases were used partly for the market garden business. Table 16 shows the distribution of the various types of motive power both by number per holding and by number per 100 acres on the holdings by acreage size groups.

NUMBER OF TRACTORS, LORRIES AND HORSES BY SIZE OF HOLDING. 1949-50

TABLE 16

Survey holdings

Size group	No. of holdings	Medium and light tractors		One-wheel and two-wheel tractors		Lorries		Horses	
		Per holding	Per 100 acres	Per holding	Per 100 acres	Per holding	Per 100 acres	Per holding	Per 100 acres
Up to 10 acres	11	.7	11.0	.6	9.6	.8	12.4	.4	5.5
10 and up to 20 acres	17	.9	6.3	.5	3.8	.8	5.9	.9	6.7
20 " " " 30 "	12	1.1	4.5	.3	1.0	1.0	4.2	.8	3.1
30 " " " 50 "	9	1.7	4.7	.4	1.3	.8	2.2	1.0	2.8
50 " " " 100 "	8	1.8	2.6	.4	.6	1.5	2.2	.5	.7
100 acres and over	3	2.3	1.9	-	-	2.0	1.6	1.0	.8
All survey holdings	60	1.2	4.0	.4	1.4	1.0	3.3	.8	2.5

An examination of this table shows that, as would be expected, the number of medium and light tractors per holding increases in the higher acreage groups. However, the number of these tractors per 100 acres is considerably higher on the smaller holdings. Thus on the smallest holdings one tractor is used for every nine acres of land whereas on the holdings of over 100 acres one tractor does the work on 50 acres of land. Similarly, there are more one and two-wheeled tractors and horses per 100 acres in the smaller acreage groups and, unlike the heavier tractors, the actual number of these market garden tractors is higher on the smaller holdings. One lorry is kept for every eight acres of land in the under ten acre group, whereas in the holdings in the over 100 acre group one lorry is kept for every 60 acres of land.

Relatively, the motive power available is considerably more on the smaller holdings than on the larger ones, mainly due to the fact that the tractor or the lorry is an indivisible unit. On the smaller holdings there is less likelihood of them being used to their full capacity. The amount of land available for cultivation and the amount of produce available for cartage may only be sufficient to provide work for a fraction of the time that a tractor or a lorry is capable of working. But a grower has to get the work done, and so he maintains a tractor or a lorry even though he cannot use it to anything like its full capacity.

Seven of the 60 growers did not possess a tractor of any kind, and of these, six had holdings of under 15 acres. Of these seven growers, three had two horses, one had only one horse, and three depended entirely on hiring a tractor or a horse from a neighbour.

Although the average number of lorries in the survey is one per holding, this hides the fact that ten growers did not possess a lorry and eight growers had more than one. The present system of marketing by which the majority of the growers sell their own produce either retail or in the wholesale market makes it difficult for a grower to manage without a lorry. Of the ten growers not possessing lorries, five dealt completely with wholesalers and the other five had their produce taken to market by contractors. However, apart from the use of a lorry for marketing purposes, the scattered nature of many holdings made the provision of some form of farm transport essential.

The average number of the main type of implements per holding is shown in Table 17. The only serious shortage of implements is in spraying equipment. The small complement of fertiliser distributors, steerage hoes, planters and potato harvesting equipment suggests that many of these operations were in fact performed by manual labour.

There is a certain amount of co-operative use of machinery and implements. During the year of the survey seven growers hired tractors and equipment from their neighbours, and usually the owner of the outfit acted as the operator. On six holdings (all under 15 acres in size) the work consisted mainly of ploughing. These holdings had no tractor or only one of the small market

NUMBER OF IMPLEMENTS PER HOLDING 1949-50

TABLE 17

Type	Survey holdings	
	No. per holding	Acreage per implement
<u>Tractor implements:</u>		
Floughs	1.2	25
Harrows	1.7	18
Rolls	1.2	26
Cultivators	1.1	28
Fertiliser distributors	.2	166
Steerage hoes	.2	166
Cabbage planters	.2	130
Potato ridgers	.2	152
Potato spinners	.1	228
<u>Horse implements:</u>		
Ploughs	.7	44
Harrows	.4	83
Rolls	.2	130
Cultivators	1.0	120

garden type. Probably there are other examples of machinery borrowing which were not revealed by the survey. Payment for this contract work is sometimes by a reciprocal arrangement for the loan of a horse for some inter-row cultivation or other such task for which the grower may prefer a horse to a tractor.

Seven other growers had hired equipment from local farmers during the year, mostly for corn or hay harvesting. This system was a disadvantage in a bad season in that the farmer would, of course, harvest his own crops before attending to those of the grower.

The growers made very little use of agricultural machinery contractors but instances were found of steam sterilising or drainage done by County Agricultural Executive Committees.

From information provided by the growers on numbers, type and age of machinery and equipment it has been possible to make an estimation of the amount of capital invested in machinery at the time the survey was made. Table 18 shows the valuation of machinery and equipment by size groups of holdings, and also the total valuation which includes the value of the lorry.

The valuation of cars has been excluded as it was difficult to estimate the extent to which they were used for the business. On an average the valuation of the cars was £5.6. per acre or about £170 per holding. This was the value at the estimated selling price, not the written down valuation.

VALUATION OF MACHINERY AND EQUIPMENT BY SIZE OF HOLDING 1949-50

TABLE 18

Size group	No. of holdings	Survey holdings			
		Valuation of machinery and equipment			
		Excluding lorries		Including lorries	
		Per holding	Per acre	Per holding	Per acre
		£	£	£	£
Up to 10 acres	11	197	27	374	69
10 and up to 20 acres	17	266	19	426	30
20 " " " 30 "	12	333	14	669	23
30 " " " 50 "	9	498	14	648	19
50 " " " 100 "	8	615	9	931	14
100 acres and over	3	970	8	1,403	12
All survey holdings	60	383	13	615	20

The table again brings out clearly the fact that capital investment per acre in machinery on the small holdings was greater than on the larger holdings. Investment in tractors and implements was £27. per acre on the holdings under ten acres compared with £8. per acre on holdings of over 100 acres. When lorries were included in the valuation the tendency for higher investment in the smaller holdings was even more marked. The valuation on the holdings of under ten acres was raised from £27. to £69. per acre, that is, the lorry accounted for 60 per cent of the total valuation. On the holdings of over 100 acres the increase was smaller being from £8. to £12. per acre, the lorry accounting for only a third of the total valuation.

Table 19 shows the valuation of machinery and equipment for three groups of horticultural holdings and some farming types in 1949-50

As would be expected, due to the greater intensity of production, investment per acre in mechanisation by the Melbourne growers was higher than in any of the farming groups. Investment in the over 100 acre group of Melbourne holdings was slightly higher than for the large market garden type of holding in Kent. In comparison with a group of market gardens in the South and South-west, investment in similar sized Melbourne holdings was slightly lower - £19. per acre compared with £29. per acre.

VALUATION OF MACHINERY FOR CERTAIN FARMING TYPE GROUPS 1949-50

TABLE 19

Type	£ per adjusted acre†	
	Average acreage	Equipment valuation*
Specialist Types:		
Market gardens - Southern and South Western	40	29
" " - Wales	82	19
Kent hops, fruit and vegetables	160	11
Farming Types:		
Grass	148	6
Intermediate	216	7
Arable	182	7
All Type Groups ^x	171	6

† Adjusted to exclude rough grazings.

* Including an allowance for cars used on farm business.

x Including some types not previously mentioned in table.

SOURCE: Ministry of Agriculture and Fisheries. Farm Incomes in England and Wales 1949-50. Farm Income Series No. 3. H.M.S.O. 1952.

The bulk of the investment in machinery and equipment by the Melbourne growers has been made since 1939. Before the war a number of the growers had lorries and there were a few tractors, but the majority of the work on the holdings was done by horses. Suggested reasons for this rapid mechanisation are given below.

- (1) Prior to 1939 growers had probably realised the saving in time and labour that would accrue from a certain amount of investment in machinery and equipment, but the necessary capital was not available and labour was relatively cheap. As profits rose during the war labour was becoming scarce and wages were rising. Consequently, there was more incentive for the grower to invest in motive power and equipment.
- (2) Specially designed equipment for horticultural use was beginning to appear on the market.

- (3) Not many other channels were open for investment except in land and improvements to land, such as drainage. During the war when land was needed for the immediate provision of food, rather than the provision of food in future years, the erection of glasshouses and buildings and the establishment of orchards was forbidden. Tractors and equipment were fairly easy to obtain during this period and so investment was made in this channel.
- (4) The Income Tax Act of 1945 provided for an initial allowance of 20 per cent on all capital expenditure on machinery or plant (this excludes buildings) and by the Finance Act of 1949 the allowance was raised to 40 per cent.⁽¹⁾ Although permits for market garden buildings have since become easier to obtain and glass is freely available, the allowance on purchases of machinery and equipment did much to persuade Melbourne growers to invest a large proportion of their available capital in mechanisation. Although Dutch light structures were also included in this tax allowance very few were installed in the area.
- (5) Farm workers are becoming more and more unwilling to work with horses. This applies especially to the younger men. Therefore some growers may have found it necessary to mechanise in order to attract labour on to their holding.
- (6) During the war a considerable amount of grassland in the area was ploughed up and put under vegetable cultivation. This was made possible partly by the fact that some growers disposed of their horses so that more land was available for cultivation and replaced the horse by machinery. Table 20 shows the decline in horse numbers and in the acreage of permanent grazing in the parish of Melbourne. Between 1930 and 1950 horse numbers declined from 167 to 39, or by about 77 per cent and the acreage of grazing land decreased by 53 per cent in the same period.

(2) Glasshouses, Dutch Lights, etc.

A feature of the Melbourne market gardening area is the lack of production under glass. About 45 per cent of the growers have a glasshouse of some kind, but the total area is very small, and many of the houses are not used to their full capacity. Dutch lights and cloches are also of little importance in the area.

The total area of glasshouses covered by the survey was about 35,000 sq.ft. or just under one acre and out of the 60 growers, 27 had a glasshouse. The condition of many of the houses was poor and although the majority were equipped with heating apparatus it was often not used. The present utilisation of these

(1)

Withdrawn with effect from April, 1952.

NUMBERS OF HORSES AND ACREAGE OF PERMANENT GRASS FOR GRAZING
IN THE PARISH OF MELBOURNE

TABLE 20

Year	Horses (used for agricultural purposes)	Permanent grass (excluding rough grazings) acres
1930	167	1,450
1935	143	1,332
1939	111	1,214
1940	119	1,003
1941	103	892
1942	83	914
1943	98	708
1944	71	688
1945	79	695
1946	70	706
1947	60	679
1948	68	764
1949	54	592
1950	39	675

SOURCE: Ministry of Agriculture and Fisheries. Statistics Branch.

houses is mainly in raising young plants so that when planted out the crop may be brought on a week or two earlier than normal outside crops. A few special crops are grown in the houses; mainly tomatoes, but also cucumbers in summer and chrysanthemums in winter. The growers' main consideration seems to be that the glasshouse work should not interfere with the outside work of the holding. About seven of the growers darkened houses for rhubarb forcing in winter, and others just used them for storing packing boxes.

Dutch lights were used by 83 per cent of the growers, but the total area only amounted to just over 21,000 sq.ft. or an average of 350 sq.ft. for each of the 60 holdings. These lights were mostly mounted on single frames, and were not all in a good state of repair. All were used for raising seedlings for planting out and only a very few for raising crops.

Only ten per cent of the growers had cloches, totalling about 2,000 ft. in length. Cloches were unpopular among the growers partly because of the high cost of breakages, and partly because of the increased labour requirements resulting from their use on a crop.

Several reasons may be suggested to explain the small amount of glass in Melbourne.

- (1) There has been little outside influence in the area. Of the 60 holders in the sample only five had not been born or brought up in Melbourne and only one of these had any experience of horticultural production outside the area. None of the other growers appeared to have had experience of horticulture in another district and consequently there has been little influence to move them away from the system of cultivation traditional in Melbourne.
- (2) The lack of knowledge of glasshouse production on the part of the Melbourne growers is another reason for their lack of interest in the possibilities of using more glass on their holdings or in a better utilisation of the existing glass.
- (3) The difficulty of fitting production under glass in with the outside work of the holding. Additional labour is not easy to obtain, and the existing labour is not skilled in glasshouse work.
- (4) Before the war little capital was available for glasshouse erection on any scale, and when returns increased the glass was difficult to obtain. Later when glass became more plentiful the wood or the metal necessary for the glasshouse structures was still in short supply, so that apart from a lack of interest by the growers in glass there may have been a certain difficulty in obtaining supplies although there have been periods recently when both the glass and the structures have been readily available.
- (5) Although the growers' returns increased tremendously during the war, the price of glass has increased by at least 300 per cent. In a recent article Mr. F.A. Secrett⁽¹⁾ estimated that whereas it cost about £4,000. to erect an acre of glasshouse pre-war, the present cost would be at least £12,000. and other estimates have put this figure still higher. It has been suggested⁽²⁾ that the amount of capital involved in an acre of glasshouse is comparable to that needed for 20 to 25 acres of market garden land or 100 to 150 acres of general farm land. Mr. Secrett calculated that an acre of Dutch lights with watering equipment would cost over £2,000. to erect, and another writer has put the figure at £5,600.⁽³⁾ Certainly the cost is considerably less than that necessary for glasshouse construction.

(1)

F.A. SECRETT. Present-day Problems of the Horticultural Industry. Journal of the Royal Horticultural Society, May, 1950.

(2) W.A. WARD. The Commercial Glasshouse Industry of the Lea Valley. Journal of the Institute of Bankers. December, 1950.

(3) F. SEEBOHM. The Commercial Glasshouse Industry. Journal of the Institute of Bankers. February, 1951.

(3) Orchard Fruit

The acreage of orchard fruit in the Melbourne area has declined considerably in recent years as already shown in Table 5. In 1925 there were nearly 80 acres of orchards in the parish of Melbourne; in 1939 this had declined to 53 acres and by 1950 to 38 acres. It would appear from the data available that a considerable amount of orchard establishment was carried on between about 1880 and 1890, so that the recent decline in the acreage was probably due to grubbing up as the trees passed their maximum bearing age. The growers presumably destroyed them when they considered that the land would earn more under arable cultivation. As these orchards were grubbed up there was little new investment in top fruit plantations, and only one grower had planted any considerable acreage of new fruit.

The orchards that were still in existence were mostly in rather poor condition. The trees were planted very closely together and received little attention in the way of pruning or spraying. The crops were of a poor quality compared with those of the specialist grower, but found a market locally.

One reason why the growers were not interested in orchard production was that they found difficulty in obtaining a supply of casual workers for fruit picking which, unlike the harvesting of brassica crops, cannot be dealt with by the regular workers.

An estimate was made⁽¹⁾ that whereas in 1930 to 1935 it cost about £125. to bring an acre of apples into bearing, it now costs about £400. an acre (not taking account of any income from undercropping). This does not allow for the cost of packing facilities, etc. Mr. W.P. Seabrook⁽²⁾ estimated that in 1950 the cost of establishment of five acres of dwarf pyramids (apples or pears) was about £2,000. or £400. per acre.

(4) Irrigation

The amount of irrigation in the area at the time of the survey was practically negligible, although several growers had plans for installing a system. There are several reasons for the small progress made in this direction up to the present in Melbourne.

(1) Agricultural Economics Research Institute, Oxford. Achievements and Prospects in Apple Growing. Westminster Bank Review. February, 1950.

(2) W.P. SEABROOK. Estimated Cost of Establishment of Five Acres of Dwarf Pyramids. Fruit Grower. 22nd March, 1951.

- (1) The lack of a water supply, 25 out of 60 growers in the survey had no water available to their fields, and five had a supply from a stream in one field only. Of the other growers the majority had water available in streams, mostly with a continuous supply throughout the year, and the others had a piped supply. Therefore in addition to the outlay on the plant many of the growers would have to allow for the cost of obtaining a piped supply of water. One grower estimated the cost of laying pipes for this purpose at 3s. Od. per ft. and in addition to this he dug the trench himself. However, if the water supply scheme is approved the Government will make a grant to cover half the cost.
- (2) The large capital outlay required for installing a system, although the resulting increase in returns should rapidly compensate for this.
- (3) The growers would have to change their system of cropping. Many would not wish to do this and under the present system irrigation would not be of much value.

C H A P T E R VIII

LAND TENURE

This chapter touches briefly upon a number of aspects of land tenure. The proportion of tenants and owner-occupiers, the ownership of the rented land, the conditions of the buildings, drains and fences and the rents paid are all matters that exert an important influence on the character of a rural community. The conditions of land tenure may do much to determine the scope of production and the ease with which it is possible for producers to modify the organisation of their business in the face of prevailing economic conditions.

Table 21 compares the position in Melbourne with that in England and Wales as a whole. It shows that a higher than average proportion of both the holdings and the land in the Melbourne area was owned by the occupiers. The fact that many holdings in Melbourne have been in the same family for generations may partly account for the large proportion of owner occupiers.

SYSTEM OF TENURE IN MELBOURNE AND IN ENGLAND AND WALES

TABLE 21

	Percentage of holdings			Percentage of acreage	
	Wholly or mainly tenanted	Wholly or mainly owned	Partly owned and partly tenanted	Tenanted	Owned
Melbourne	43	37	20	56	44
England [‡] and Wales	62	31	7	67	33

[‡] SOURCE: Ministry of Agriculture and Fisheries. National Farm Survey of England and Wales 1941-1943. H.M.S.O. 1946.

Investment in Land

The trend towards the position of a high proportion of owner-occupied land has been a gradual one. During both world wars when the prosperity of the Melbourne area has been highest, considerable purchases of land have been made by the growers. If for any reason the landlord has presented them with the opportunity some growers have bought the holdings they already tenanted, and others have taken up any land that has been offered for sale. A small amount of land changes hands every year for various reasons. In 1949-50 34 acres were bought by the growers in the survey. The competition for land is causing high prices and at the time of the survey the price of land in the area was in the region of £150. per acre.

Land is eagerly bought by growers anxious to increase the size of their holdings. With the extensive type of vegetable growing prevalent in the area it is not easy at the present level of costs and returns to obtain a reasonable income from a small acreage. As conditions become less satisfactory some growers are putting all their efforts into increasing the physical size of their holdings, and as there is keen competition for rented land the only way to do this is by purchase.

Another factor encouraging the grower to buy land is a desire for security. In times of prosperity many growers consider that one way of guarding against poorer times is to obtain ownership of the land by direct payment so that in a depression there will be no rent or interest to pay. Also the grower looks on land as a safe investment.

Although under the Agriculture Act of 1947 a grower is entitled to compensation when he leaves the holding for buildings erected with the permission of the landlord or the Agricultural Executive Committee, many feel more inclined to build only on their own land.

In addition to the investment in land considerable landlords' capital is invested in improvements to land, particularly:-

- (1) buildings
- (2) drainage
- (3) roads and fences

(1) Buildings.

Under the present system of cultivation carried on in Melbourne the majority of growers have sufficient buildings to meet their requirements. Although many of the buildings are old and are often converted farm buildings they serve their purpose. But special buildings may be needed for a more intensive type of cultivation. For example a better type of packing shed will be necessary if increased quantities of fruit or other perishable products are to be handled. This does not apply to all growers as some already have very good buildings.

Few buildings have been erected since 1939. During the war permits for building were practically unobtainable. There has been far greater investment in mechanisation than in buildings in this area since the war, probably because many of the growers considered that mechanisation was of more benefit to their holdings. As far as could be ascertained during the survey only two of the growers had any plans for erecting new buildings in the immediate future. The majority of the up-to-date buildings in the area have been erected on owner-occupied land rather than on tenanted land. At the present level of rents and the present cost of erecting permanent buildings, it is probably not an economic proposition for the landlord to build.

The average holding has a few brick buildings, usually adjacent to the house and a selection of sheds, or "hovels" as they are known locally, on the various fields. The more the holding is divided up into different parcels the more buildings it has, as each field, or group of fields, normally has at least one shed attached. The brick buildings were often originally stables with large lofts for storing boxes, fruit, etc., and now that there are fewer horses these buildings have been converted into garages or storage sheds. The field buildings, constructed of wood or corrugated iron, are used as packing sheds or for the storage of tractors and implements.

One reason for the lack of livestock in the area is the shortage of suitable buildings. Several growers were unable to increase their pig enterprise without considerable capital outlay on housing. Similarly there are few buildings where cattle could be kept in any numbers.

There are a considerable number of rhubarb forcing sheds of varying types. Occasionally collars are used, but more often brick or wooden sheds near to the rhubarb fields. Rarely were any of these sheds heated. Of the growers in the survey 36 had at least one rhubarb shed and seven used darkened glasshouses, two in addition to an ordinary rhubarb shed. Approximately 31,000 sq. ft. of shed were available for forcing rhubarb with an additional 4,000 sq. ft. in darkened glasshouses. On an average it appeared that something like 80,000 roots of rhubarb were forced each year, but this figure is only an approximation taken from each grower's estimate of his own production.

There is very little mushroom cultivation in the district and mushroom sheds are practically non-existent.

(2) Drainage.

Nearly all the market garden land in the area is well-drained either naturally or by drainage schemes carried out by the growers themselves, who consider that investment in drainage has profitable results. Enquiries showed that a considerable amount of drainage was done during and after the war, although the land was fairly well drained before. In the year the survey was made five of the growers had tile-drained a part of their land.

(3) Roads and Fences.

Little has been done to make really good farm roads, but most of the roads are satisfactory in that they serve their purpose and further expenditure on roads would contribute little to the efficiency of the holdings.

As there are few livestock on the holdings, fences, hedges, etc. are important only as windbreaks or boundaries. Often the boundary between holdings is hardly distinguishable although sometimes it consists of a hedge or ditch, or a single line of fruit trees.

Lay-out of Holdings .

One of the main disadvantages with which the growers have to contend is the scattered nature of the holdings. This has probably arisen from the splitting up of land between sons on the father's death or retirement, or the piecing together of holdings through marriage, and also because of the eagerness to take up any fields that fall vacant whether or not they are situated conveniently near the rest of the holding. In many cases the gardener has land in several different fields scattered throughout the district at distances of several miles and in addition his residence may be in the town, well away from any of his land. Only 17 of the 60 growers in the sample had their land, buildings and residences situated conveniently close together. The survey area stretches for only a radius of about two miles round Melbourne, but even so the distance between two fields can cause the grower considerable inconvenience and loss of labour time in moving men and equipment from one field to another. Often cultivations are not done at the right time because the equipment is not in the right field.

Land-ownership.

An analysis of the rented land in the sample by type of landlord is given in Table 22. Nearly 50 per cent of the total area of rented land is owned by the two large estates of Melbourne and Calke. As mentioned in Chapter II some of the first commercial market gardening was in the gardens of the tenants of the local estates; and the breaking up of the estate led to the formation of the small holdings. The majority of the land under the Calke estate seems to have come into market garden cultivation much later, probably during the two world wars.

PERCENTAGE OF RENTED LAND UNDER DIFFERENT LANDLORDS 1949-50

Landlord	Survey holdings
	Percentage of total rented land in survey
Calke Estate	35
Melbourne Estate	11
Glebe Land	13
Derbyshire C.C. and Shardlow R.D.C.	12
Family	10
Other	19
Total	100

Another 13 per cent of the land is rented Church land. Nearly 12 per cent is county council land, mostly divided up into county council smallholdings. These were set up after the 1914-18 war for ex-servicemen, but few of the original tenants are in possession of these holdings now. The remainder of the land is accounted for by private landowners, 10 per cent being members of the occupier's family.

Rent.

Although the total area of land covered by the survey was only 1,800 acres, rents per acre varied considerably between holdings and also between different parcels of land belonging to the same holding. Table 23 shows the percentage of land in the different rental groups for the 42 growers who supplied information on rents. From this it may be seen that over 50 per cent of the land had a rent of between £3. and £5 per acre. However, the rents ranged from £2. to over £7.

PERCENTAGE OF LAND BY RENTAL GROUPS 1949-50

42 Survey holdings	
Rent. or rental value per acre	Percentage of total land
	%
£2. to £3.	13
£3. to £4.	28
£4. to £5.	28
£5. to £6.	17
£6. to £7.	10
£7. to £8.	4
Total	100

There are several factors accounting for these large variations.

- (1) The rent of some holdings includes the rent of the house and buildings, whilst for others it does not.
- (2) The difference in the length of time that the tenancies of holdings have been held by the same gardener. It is far easier for a landlord to increase the rent to a new tenant than to raise the rent of the holding of an established tenant.
- (3) Differences in rent charged by different landlords.
- (4) There is a definite tendency for the land in the centre of the area to have a higher rent, probably due to the fact that the land nearest to the town has been in horticultural production longer than that at the edge of the area. Also there will be a certain amount of competition for this land for building purposes. Rents decrease at the edge of the area as land becomes used for both mixed farming and market gardening.
- (5) The variation in soil fertility and texture. There is both light sandy soil and heavier clay soil within the area; the most favoured and the highest rented land tending to be the lighter soil.

The figures in Table 24 show little variation in rent according to size of holding, although there is a marked drop in the 30-50 acreage group.

RENT BY SIZE OF HOLDING 1949-50

TABLE 24	42 Survey holdings
Size group	Rent
Up to 10 acres	£ per acre 4.7
10 and up to 20 acres	4.4
20 " " " 30 "	4.4
30 " " " 50 "	2.9
50 acres and over	4.3
All survey holdings	4.2

The rent per acre of the land in the Melbourne market gardening district is considerably higher than that of the surrounding farming land, as a result of the more intensive type of cultivation. On ten farms of the mixed dairy and arable type within a radius of ten miles from Melbourne, the average rent or rental value was £1.17s. 0d. per acre compared with £4. 4s. 6d. per acre in Melbourne.

In comparison it can be seen in Tables 9 and 10 that a group of market gardens in the South and South-West had an average rent of just over £3. per acre⁽¹⁾ and the rent of a group of vegetable holdings in Evesham was £5. per acre.⁽²⁾

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- (1) Ministry of Agriculture and Fisheries, Farm Incomes in England and Wales 1949-50. Farm Income Series No. 3. H.M.S.O. 1952
 - (2) E. B. FEKETE. Vale of Evesham. Financial Results of Market Garden Holdings for the Cropping Year 1949. University of Bristol. Department of Agricultural Economics. 1950.

C H A P T E R IX

MARKETING

In previous chapters this report has been concerned mainly with the production side of horticulture in the Melbourne area. But in horticulture, perhaps more than in any other branch of agricultural production, efficient marketing plays a vital part in determining the financial success of a holding. The grower must be able not only to produce crops of the type and quality desired but he must also find a channel through which he can dispose of them at a reasonable price.

There are a number of factors which make the marketing of horticultural produce more difficult than the marketing of farm products.

- (1) Horticultural crops do not benefit by the system of guaranteed prices and assured markets provided by Part I of the Agriculture Act 1947, and are subject to unpredictable fluctuations in price between seasons and also to short-term changes within a season.
- (2) Variations in yield are probably greater than for agricultural crops and there are often wide fluctuations in the amount of produce coming on to the market in any year. Short-term fluctuations are also likely to occur with changes in the weather.
- (3) The highly perishable nature of the produce to be sold makes storage difficult, and distribution from the grower to the consumer must be rapid.
- (4) The produce of most horticultural holdings consists of many different crops and varieties of crops, so that standardisation is difficult.
- (5) The small size of many horticultural businesses often makes it difficult to find a suitable channel for the disposal of produce. Wholesalers prefer to deal with a large business from which a substantial supply of produce is assured. Consequently the marketing of horticultural produce is an enterprise involving considerable risk and uncertainty. In Melbourne marketing is completely incoordinated, each grower having his own channel for the disposal of produce. Therefore the success of a horticultural business in the area probably depends to an exceptional extent on the individual marketing ability of the growers.

The three major factors which emerge from a general survey of marketing in the Melbourne area and which warrant examination are:-

- (1) The channels of distribution through which produce from the area is sold.
- (2) The area of marketing.
- (3) The packing and grading of produce.

(1) Channels of distribution.

The main channels for the disposal of produce from the Melbourne area are listed below in Table 25, together with the number of growers in the survey distributing their produce through each channel. Some growers sell through more than one channel so that the total comes to more than the 60 growers in the survey.

As information on the physical output or value of the produce from the holdings during the year of the survey was not forthcoming from many of the growers it has not been possible to estimate the volume of produce passing through each channel. But an estimate has been made of the acreage of market garden crops and fruit from which the produce passes through each channel of distribution. This estimates shows that the produce from over 63 per cent of the total area of market garden crops in the survey was sold by grower-wholesalers, 31 per cent by wholesalers and only six per cent by growers retailing their own produce.

CHANNELS OF DISTRIBUTION OF MELBOURNE PRODUCERS 1949-50

TABLE 25

Survey holdings

Channels	No. of growers	Estimated acreage of market garden crops and fruit	Percentage of total market garden crops.
A. Grower-retailer	11	79	6
B. Grower acting as own wholesaler	45	802	63
C. Wholesaler or commission agent	20	404	31
Total	-	1,285	100

Table 26 shows the number of growers selling through each system, the average acreage of market garden crops and fruit grown and the average number of crops grown per holding.

AVERAGE ACREAGE OF MARKET GARDEN CROPS AND FRUIT AND
AVERAGE NUMBER OF CROPS GROWN BY EACH GROWER 1949-50

TABLE 26

Survey holdings

Channel of distribution	No. of growers	Average acreage of market garden crops and fruit per holding	Average number of crops grown per holding
A. Grower - retailer	2	3.5	—*
B. Grower - wholesaler	33	20.0	19
C. Wholesaler	9	31.3	21
Combination of A and B	5	17.7	21
" " A " C	4	13.0	22
" " B " C	7	28.0	21
Total	60	—	—

* One holding was a nursery.

The table shows that there is little difference in the number of crops grown by producers in the different marketing type groups although the reasons given by the growers for having a diversified cropping system varied. Grower-retailers and grower-wholesalers emphasised the importance of having some produce to sell each week in order to maintain their market connections, whereas the growers selling through a wholesaler placed more emphasis on the desirability of spreading risks over a large number of crops. One advantage of selling to a wholesaler should be that the grower can specialise in the production of a few crops, but this has not happened in Melbourne. Even those growers who have turned to marketing through a wholesaler have not changed their diversified cropping plan.

Table 26 also brings out the fact that growers selling through a wholesaler had, on the average, larger holdings than those selling through one of the other systems. Those selling all their produce wholesale had holdings of an average size of just over 31 acres, whilst those growers selling all produce through their own wholesale system had holdings of only 20 acres average size. This points to the fact that with a relatively extensive type of horticulture such as that found in Melbourne it is usually the large growers who are best able to establish good connections with a wholesaler because only they have any considerable quantity of produce to sell.

(A) Grower-retailer. As shown above 11 of the 60 growers in the survey had a retail system of their own. Of these, two disposed of all their produce by retail, but the other nine sold only a proportion of their crops retail and disposed of the rest through another channel; five by selling direct to retailers and four through a wholesaler.

Among the grower-retailers there were several different systems. Two had shops in neighbouring towns, four had market stalls for one and sometimes two days a week and five had delivery rounds, one in addition to a shop. Another grower dealing mainly with nursery stock sold 75 per cent of his produce direct to customers by post or rail and the rest to customers who came to the holding.

The delivery rounds consisted of carrying produce by lorry from door to door on one day a week. Some of these rounds were started many years ago with a horse and cart and gradually developed into bigger rounds with a lorry. The majority of them were in the mining regions of Swadlincote, Woodville, etc. All but one of these rounds were made on Friday and Saturday presumably because the miners' demand for fruit and vegetables was greatest after pay day. There is in fact some evidence(1) of an increased demand for horticultural produce at weekends. It has been estimated that about 55 per cent of all retail sales of fruit and vegetables occur on Fridays and Saturdays.

Sale through this marketing channel ensures that produce reaches the consumer quickly and in a fresh condition. Furthermore the price the grower receives will be far higher than if he sells wholesale. Table 27 illustrates this with average figures of wholesale and retail prices for various crops for seven weeks in 1947 and 1949.

It is reasonable to assume that the wholesale price is approximately that which Melbourne growers would receive by selling their own produce wholesale. and the table shows that the retail price was considerably above this.

On the other hand the increased costs of marketing must be reckoned against the possibility of higher returns from the crops by direct retailing. The main items of expense likely to be encountered are:-

- (1) A large capital outlay may be involved in the establishment or purchase of a shop. If a lorry is required for a delivery round it may be a heavy item of expense unless it is also required for the work on the holding.

(1)

Hansard 177. 5th February, 1951 Column 1500. Fruit and Vegetable Prices. Motion of the Adjournment of the House.

COMPARISON OF WHOLESALE AND RETAIL PRICES FOR SEVEN
HORTICULTURAL CROPS 1947 AND 1949

TABLE 27

Item	Unit	Seven week period to end of March			
		1947		1949	
		Approximate average retail price	Average whole-sale price	Approximate average retail price	Average whole-sale price
Rhubarb	lb.	s. d. 1. 9 $\frac{1}{4}$	s. d. 1. 5 $\frac{3}{4}$	s. d. 1. 4 $\frac{3}{4}$	s. d. 1. 2.
Swedes	"	2 $\frac{3}{4}$	1 $\frac{1}{2}$	2.	1.
Savoy cabbage	"	7 $\frac{1}{2}$	4 $\frac{3}{4}$	3.	1 $\frac{1}{4}$
Brussels sprouts	"	1. 1.	10.	6 $\frac{3}{4}$	5 $\frac{1}{4}$
Leeks	"	7 $\frac{1}{2}$	5 $\frac{1}{2}$	4 $\frac{1}{4}$	1 $\frac{1}{2}$
Lettuce	head	1. 0.	9 $\frac{3}{4}$	10	8
Celery	"	7 $\frac{1}{2}$	no report	6	4 $\frac{1}{2}$

SOURCE: Retail prices: Hansard 125. 2nd May, 1949.
Column 635. Oral Answers.

Wholesale prices: Ministry of Agriculture and Fisheries. Prices of Agricultural Produce in England and Wales. (Weekly report). The averages of the prices realised for first quality home grown produce at certain representative wholesale urban markets (by primary and secondary wholesalers).

- (2) Alternatively there may be the rent of a shop or stall in the market. The rent of a stall in Derby retail market which is open Fridays and Saturdays varies between 7s. Od. and 10s. Od. per day according to the situation of the stall and the day. Friday being the official market day of the town rents are higher on Friday than on Saturday.
- (3) Considerable labour costs will be incurred, including that of the growers' time. If the grower is a working-grower (as the majority are in Melbourne) he may have to install a manager in the shop unless a member of the family can manage the retail part of the business.
- (4) The cost of transporting produce from the holding to the place of sale. This may be heavy if a retail round is large or scattered.
- (5) The cost of wrapping materials for the presentation of the produce to the consumer, although the cost of packing materials for transporting produce from the holding may be low.

- (6) The purchase of additional produce for sale with crops from the holding, including vegetables and fruit not grown in sufficient quantity on the holding, out of season produce, citrus fruit, tinned goods, etc. For shops there may also be grocery and other goods.
- (7) The highly perishable nature of many types of horticultural produce means that a certain amount of the retailers' stock will deteriorate below salable quality and the loss may be greater than when produce is sold in bulk.
- (8) The risk of customers' bad debts has to be borne by the retailer.

(B) Grower acting as own wholesaler. This method of the sale of produce is by far the commonest in the Melbourne area. Of the 60 growers in the sample 33 sold all their produce and another 12 sold part of their produce in this way. Of the 12 growers who sold only a part of their produce direct to retailers, five disposed of the remainder by retail and seven through wholesalers. These 45 growers distributed produce from over 800 acres in this manner or from 63 per cent of the total acreage of market garden crops and fruit covered by the survey.

Sales to retailers take place either in the wholesale market or by direct delivery to the retailer. The grower has a certain area allotted to him in the wholesale market on to which he unloads his produce. The grower stands here and sells his produce to the retailers, sometimes delivering to the shop afterwards, depending on the arrangement with the retailer. Payment for these sales is usually by cash.

Other growers have a standing order with certain retailers and deliver directly to them whenever produce is required. This largely depends on building up good connections with retailers, and on establishing a reputation for selling reliable produce. A few of the growers deal directly with catering establishments in the district. Works canteens supplying meals at minimum cost provide a good outlet for the poorer quality produce. The growers who had regular orders from retailers or catering establishments were the ones who protested least about current prices and poor marketing. Those growers selling directly to retailers in the wholesale market usually visit the market twice a week and in both Nottingham and Derby wholesale markets the busiest days are Friday and Tuesday, but Tuesday is not as busy as Friday.

The grower-wholesaler hopes to receive a somewhat better price than he would receive by selling his produce to a wholesaler. Table 28 gives a comparison between an estimation of prices paid to Melbourne growers by wholesalers and average wholesale prices for four crops during certain weeks of 1949 and 1950. The average wholesale price is that received by primary and secondary wholesalers, and so approximates to the average price received by the grower selling their own produce wholesale. In over half the examples given

COMPARISON OF PRICES PAID TO MELBOURNE GROWERS BY WHOLESALERS
AND AVERAGE WHOLESALE PRICES

TABLE 28

Price per cwt.

Crop	Date	Approximate	Average	Wholesale	Percentage in-
		growers' price	wholesale price*	margin	crease of whole-sale price on growers' price
		s. d.	s. d.	s. d.	%
Peas	July 20th 1949	42. 0.	62. 2.	20. 0.	48
	July 27th "	56. 0.	74.11.	18.11.	34
	Aug. 3rd "	56. 0.	77.10.	21.10.	39
	Aug. 10th "	56. 0.	79. 6.	23. 6.	42
	Aug. 17th "	56. 0.	71. 8.	15. 8.	28
	Aug. 24th "	56. 0.	75. 0.	19. 0.	34
Brussels sprouts	Nov. 2nd 1949	46. 8.	75. 8.	29. 0.	62
	Nov. 9th "	56. 0.	82. 7.	26. 7.	48
	Nov. 16th "	51. 4.	80. 6.	29. 2.	57
	Nov. 23rd "	51. 4.	81. 3.	29.11.	58
	Nov. 30th "	46. 8.	79. 1.	32. 5.	70
	Dec. 7th "	56. 0.	75.11.	19.11.	36
	Dec. 14th "	56. 0.	75. 5.	19. 5.	35
	Dec. 21st "	56. 0.	82. 5.	26. 5.	47
	Dec. 28th "	65. 4.	(no report)	-	-
	Jan. 4th 1950	65. 4.	103. 7.	38. 3.	59
	Jan. 11th "	70. 0.	90. 5.	20. 5.	29
Jan. 18th "	46. 8.	83. 4.	36. 8.	79	
Jan. 25th "	51. 4.	82. 7.	31. 3.	61	
Parsnips	Nov. 2nd 1949	14. 0.	26. 8.	12. 8.	91
	Nov. 9th "	14. 0.	26. 3.	12. 3.	88
	Nov. 16th "	16. 0.	25. 9.	9. 9.	61
	Nov. 23rd "	16. 0.	25. 4.	9. 4.	58
	Nov. 30th "	16. 0.	25. 6.	9. 6.	59
	Dec. 7th "	16. 0.	24. 9.	8. 9.	55
	Dec. 14th "	16. 0.	24. 4.	8. 4.	52
	Dec. 21st "	16. 0.	25. 3.	9. 3.	58
	Dec. 28th "	16. 0.	(no report)	-	-
	Jan. 4th 1950	16. 0.	24. 7.	8. 7.	54
	Jan. 11th "	16. 0.	22. 1.	6. 1.	38
Rhubarb (outdoor)	Apr. 5th 1950	23. 4.	35. 5.	12. 1.	52
	Apr. 12th "	23. 4.	31.11.	8. 7.	37
	Apr. 19th "	23. 4.	30.11.	7. 7.	33
	Apr. 26th "	23. 4.	29. 3.	5.11.	25
	May 3rd "	23. 4.	28. 7.	5. 3.	23
	May 10th "	23. 4.	26.10.	3. 6.	15

SOURCE: * Ministry of Agriculture and Fisheries. Prices of Agricultural Produce in England and Wales. (Weekly report). The averages of the prices realised for first quality home grown produce at certain representative wholesale urban markets (by primary and secondary wholesalers.)

the increase from the Melbourne growers' price to the average wholesale price was over 40 per cent. This large increase may be due to two factors. One is that the wholesaler expects an increase in the price which may be termed the wholesale margin as a reward for the function of distributing the produce and bearing the risks involved. The other factor partly accounting for the large difference in price is that the national average wholesale prices were based on those for first quality produce, whereas the standard for Melbourne produce may have been below this.

The grower-wholesaler system is an attempt to cut out the middleman's profits and transfer them to the market garden industry. However, out of these additional returns the grower has to account for the expenses of marketing by this system:

- (1) Labour costs which consist mainly of the grower's time. The loss to the business by the grower's absence from the holding is unmeasurable but the fact that for one or two days per week the holding will be left unsupervised and the grower's own manual labour will be lost, suggests that it will be high.
- (2) Rent of stand in wholesale market. In Derby an area of 10 ft. square can be reserved for a rent of about 8s. 0d. per week.
- (3) Transport costs. The majority of growers take produce to market on their own lorry and as the lorries often do not carry a full load the produce may have to bear a high cost per unit. No instance was found in the survey where two growers carried their produce on one lorry to reduce the cost. Only five of the 45 growers using this marketing channel did not possess a lorry. At the time of the survey the normal contractor's charge for transport to Derby was in the region of 10s. 0d. to 20s. 0d. per journey depending on the amount of produce.
- (4) The cost of packing materials as the grower has to provide his own under this system. Losses are fairly high as it is not easy for the grower to insist that retailers send back returnable crates. To make a charge it would be necessary to employ someone to check the crates as they were returned, as they are stacked outside the wholesale market whilst the grower is selling inside.

(C) Wholesaler or Commission Agent. A third of the growers in the survey sold produce through a wholesaler or commission agent. Of those, nine disposed of all their crops through this channel whilst the other 11 sold only a proportion of their produce in this manner. An estimation is that produce from just over 400 acres of market garden crops and fruit is distributed through this channel.

The grower dealing entirely with a wholesaler is free to concentrate all his energies on the production of crops from the holding, but as already illustrated in Table 28 he will receive a lower price than by marketing through either of the channels already described.

In addition to the 20 growers making regular sales through wholesalers or commission agents, others who normally sold all their produce through one of the other channels, made spasmodic sales to wholesalers in times when they were unable to dispose of all their crops elsewhere. At least 10 of the other growers were following this practice, and they were the most critical of wholesale prices and practices. If a wholesaler can depend on a grower for a regular supply of a reliable quality, he is more likely to take all the grower can supply during a glut than to take part of this supply and the rest from a grower who normally wholesales his own produce.

The charge made by commission agents for selling produce was somewhere in the region of 2s. 0d. in the £, that is 10 per cent on all sales made. There appeared to be a variation of between $7\frac{1}{2}$ and 10 per cent commission on various crops in Birmingham, Leicester and Sheffield markets.⁽¹⁾ Where only $7\frac{1}{2}$ per cent was charged additional items were usually added for market expenses and portorage.

In five cases where all produce was sold through this channel the wholesaler collected the crops by lorry from the holding and made a deduction for his services from the prices realised. Packing materials could be hired from the wholesaler at a charge and thus the outlay of capital on boxes avoided.

(D) Sales within the area. A few growers sold their surplus produce to others with a retail round or to help another grower fulfil an order to a retailer. There was little consistency about the amount of produce sold through this channel; sales were spasmodic and related to the supply of produce the buyer and seller had available.

(2) Area of marketing.

The majority of produce from Melbourne is distributed to 14 main marketing centres within a radius of just over 40 miles from the area. Figure 2 shows the location of these markets and their distances from Melbourne. Sheffield is the furthest market at a distance of about 43 miles and Chesterfield, Stoke-on-Trent and Birmingham are all at distances of over 30 miles.

Figure 3 illustrates the relative importance of these 14 markets and of the three main types of distribution channels in each market. Derby stands out as the market through which over half the growers in the survey distributed their produce. Nottingham was second in importance followed by the group of towns in the proximity of Ashby and Swadlincote.

(1) Ministry of Agriculture and Fisheries. Vegetable Marketing in England and Wales. Economic Series No. 25. H.M.S.O. 1935.

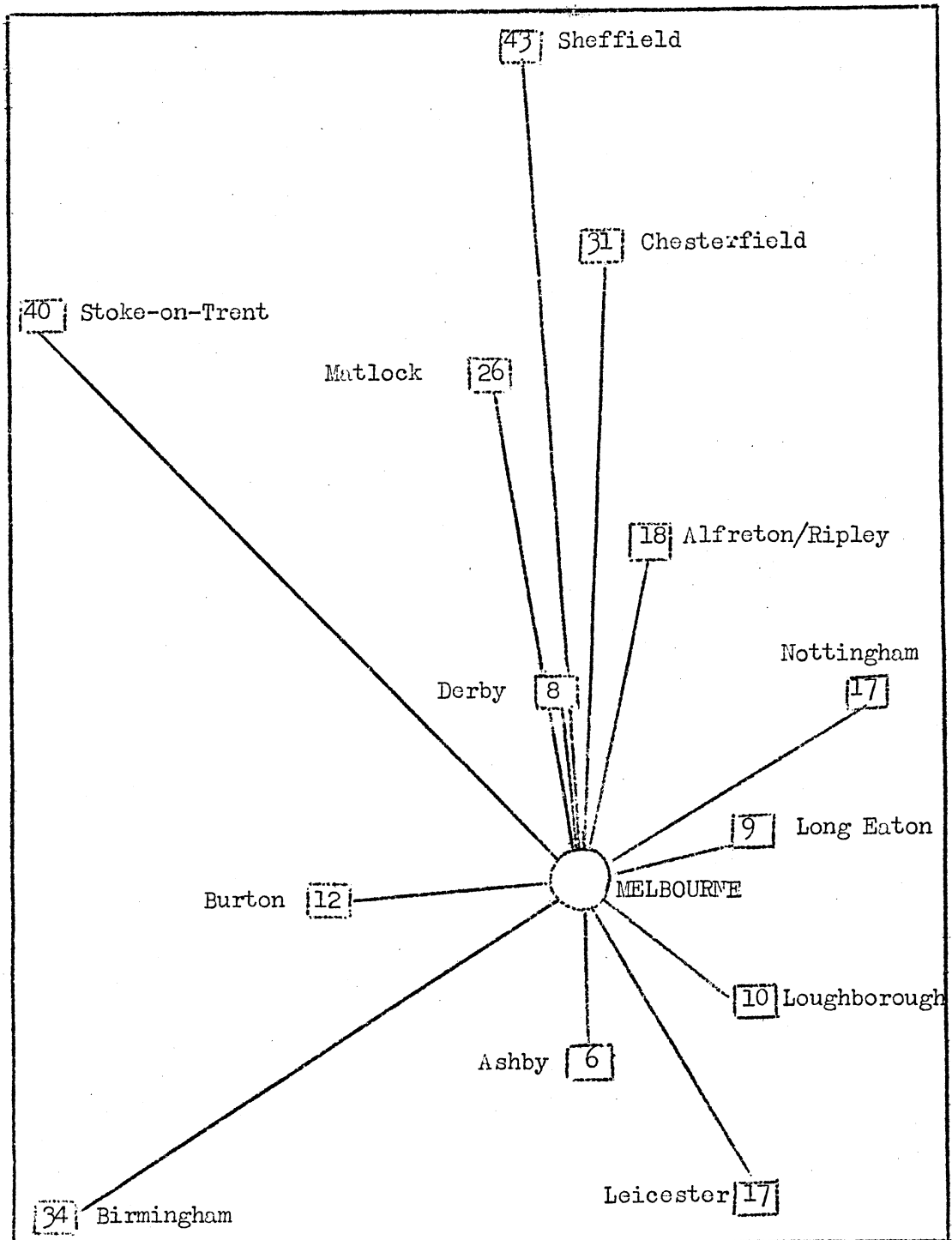


FIGURE 2. Diagram showing Markets for Melbourn Produce.
(Figures indicate distance from Melbourn).

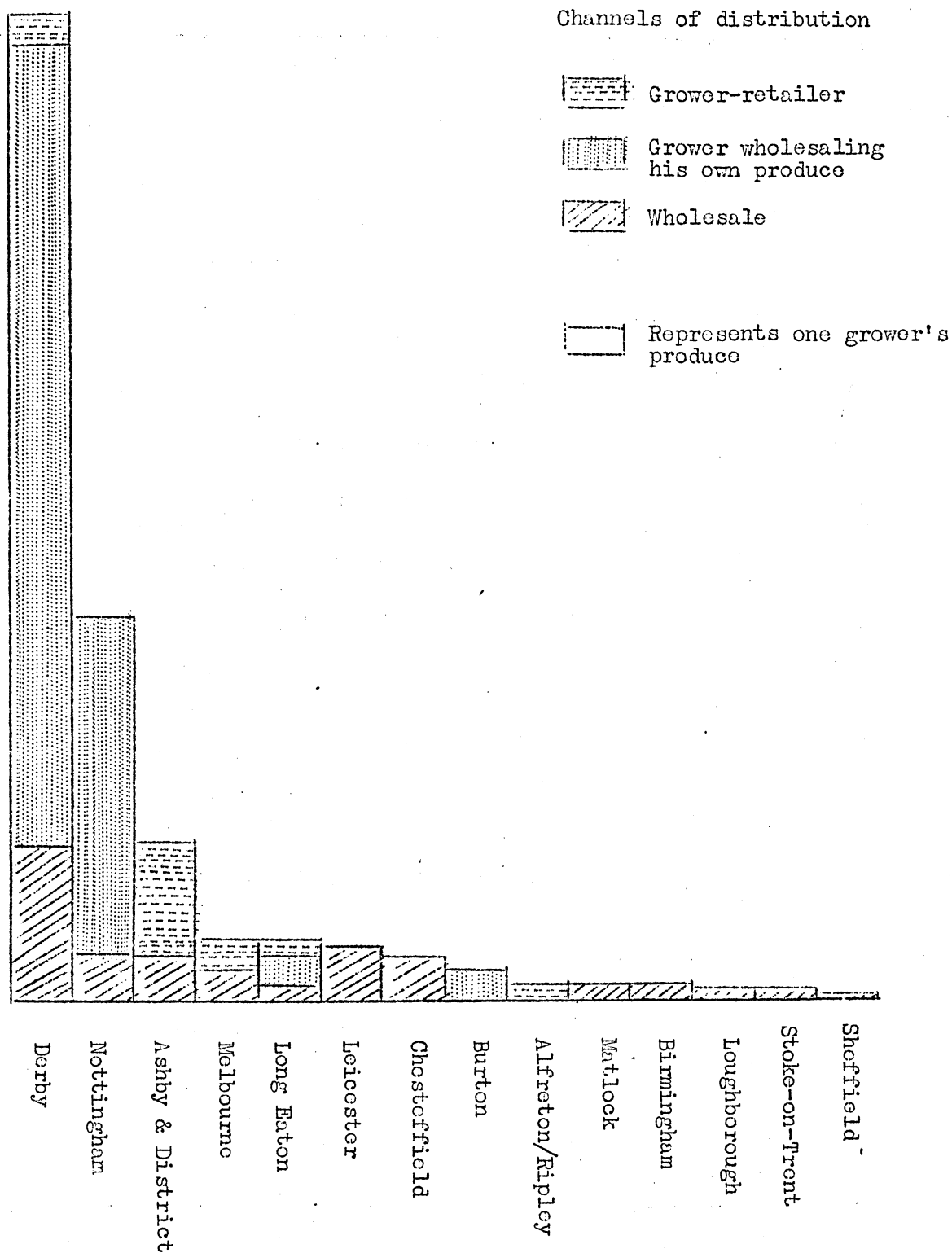


FIGURE 3. Diagram showing Distribution Channels and Markets for Melbourne Produce 1949-50. (Survey Growers).

The retail channel of distribution was confined to the towns of Melbourne, Derby, Long Eaton, Ashby and district, and Alfreton and Ripley; the greatest distance from Melbourne being about 18 miles. The majority of the grower-retailers were concentrated in Ashby and district.

It appears that growers selling their own produce wholesale to retailers visit only Derby, Nottingham, Long Eaton and Burton. Of the growers selling produce in Derby about 80 per cent sold all or part of their produce through this channel.

The towns at a greater distance from Melbourne serve mainly as wholesale outlets for produce from the area; Leicester and Chesterfield are the most important. Sheffield appears to be a market for spasmodic sales only and no grower in the survey sent produce there regularly.

The majority of the produce is, in fact, disposed of in the neighbouring industrial towns. Horticultural production in the area grew as the population of these towns increased and the demand for vegetables became greater. This dependence on local markets can be a disadvantage at times especially when there is a local glut. Those growers dealing through wholesalers can probably reach markets further afield but those selling their own produce are compelled to accept conditions in the local markets, although as already mentioned some do make spasmodic sales to wholesalers in other towns.

An interesting fact regarding the markets to which Melbourne growers distribute their produce, is that there are considerable differences in consumer demand and in conditions of supply from one market to another despite their proximity. Broccoli and cauliflower sell very well in Nottingham but sales are inclined to be poor in Derby. There is little demand for spring cabbage in Nottingham, but according to one grower it sells well in Chesterfield. Birmingham appears to be an excellent market for rhubarb, and wholesalers there will take lorryloads of rhubarb from Melbourne growers who normally have no contact with them during the rest of the year. Another grower said that he could sell locks far easier in Nottingham than in Derby.

It would appear that Leicester is a poor market for many crops being further south and nearer to the main producing areas. Strawberries and peas in particular do not sell well, and in fact the Melbourne growers do not place much importance on Leicester as a market for their produce. These differences in consumer demand and in supply conditions between markets necessitate careful consideration by the grower when planning his cropping programme.

(3) Packing and grading

The standard of packing and grading of produce from the Melbourne area is not high, but the majority of the produce reaches the market quickly with the minimum of handling and in a fresh condition. It is generally picked the previous afternoon and packed on lorries which are left standing in the garage

over-night ready for transport to market early next morning. The produce would be even fresher if it could be picked early the same morning as it often was before the war. Now, this would necessitate the grower paying the workers considerable overtime and the idea is no longer favoured.

Whenever possible even the poorest quality produce is sold. Methods of grading vary with the quality of the crop and the prevailing conditions in the market. If the quality of a crop is good it will receive little grading but the better produce will be sorted out of a poor crop. When the market for a crop is good the grower will probably not trouble to grade, but when the market is poor he will attempt to sell the better quality produce first.

Cauliflower and broccoli is normally put into two grades but other crops appear to receive very little grading. Cabbage, broccoli and cauliflower in some instances are packed in bushel boxes, but often they are put loose on the lorry, without any form of tarpaulin cover.

The usual method of packing brussels sprouts is in bushel boxes although nets are also used. Normally the sprouts are trimmed as they are picked and then packed straight into boxes, but in bad weather or when the quality is poor they are sorted over and trimmed in the house or in the packing shed.

Beans and peas are put in nets or in bushel boxes and the only sorting they receive is care in picking. As there is little picking done at piece-work rates the standard is fairly high. Lettuce are not usually graded, but the crop is picked over for heads of a fairly uniform quality. Packing is in second-hand lettuce crates or in the bushel boxes which will hold three layers of lettuce. Paper is never used for lining the boxes. A little lettuce is washed especially if for sale in Nottingham.

Several of the producers boil beetroot before presenting it to the market, finding a more ready sale for it in this form. Strawberries are picked straight into one or two lb. chips and sold in this way. The one lb. weight is the more popular and usually sells more easily than the two lb.

Since the end of the war there has been a gradual return to washing salad onions and tying them into small bunches for sale. This was general in Melbourne before 1939 but during the war it became usual to sell them by weight and unwashed, a custom which does not appeal to either the retailer or the housewife. The growers are reluctant to return to the pre-war standard especially as it necessitates the employment of considerable casual labour; which is no longer easy to obtain. Celery is another crop which the housewife prefers to buy washed and again a number of growers are returning to the pre-war standard of presenting this to the market, for washed celery commands a considerably higher price than unwashed.

A comparison of average wholesale prices for washed and unwashed celery for the first eight weeks of 1950 and 1951 is shown in Table 29. Increases in the price paid for washed celery varied from about 1s. 0d. to 2s. 0d. per 12 heads - sufficient to cover the cost of washing.

PRICES OF WASHED AND UNWASHED CELERY.

TABLE 29

1950			1951		
Date	Price per 12 heads		Date	Price per 12 heads	
	Washed	Unwashed		Washed	Unwashed
	s. d.	s. d.		s. d.	s. d.
January 4th	5. 5.	4. 1.	January 3rd	6. 0.	4.10.
January 11th	5. 7.	4. 8.	January 10th	5.10.	4. 7.
January 18th	5. 5.	3. 6.	January 17th	5. 6.	4. 1.
January 25th	5. 3.	3. 1.	January 24th	5. 7.	4. 0.
February 1st	5. 3.	3. 8.	January 31st	5. 4.	4. 0.
February 8th	5. 8.	3.10.	February 7th	5. 2.	4. 4.
February 15th	4. 6.	3. 8.	February 14th	5. 2.	4. 2.
February 22nd	6. 0.	3. 8.	February 21st	5. 4.	4. 0.

SOURCE: Ministry of Agriculture and Fisheries. Prices of Agricultural Produce in England and Wales. (Weekly report). The averages of the prices realised for first quality home grown produce at certain representative wholesale urban markets.

There are several reasons why the standard of packing and grading of Melbourne produce is not high:-

- (1) The produce has only a short distance to travel to market so that careful packing is not essential. It may thus be in an unfavourable position when shown alongside carefully packed foreign produce.
- (2) During the war the Melbourne growers were able to sell all their produce easily, and this fact combined with a shortage of labour has resulted in a considerable fall in the standard of packing or grading attained before the war.
- (3) The cost and storage of suitable packing materials. In this country the right type of wood is not available in any quantity for making non-returnable packing boxes, the only ones available being second-hand boxes in which foreign produce has come to this country. Returnable crates are expensive, the bushel boxes costing over

5s. 0d. each. Paper for lining boxes and for covering strawberry chips etc., is also expensive. However, if extra expenditure on packing materials can bring about an increase in the price received by growers for their crops and can help to maintain markets against competition, then it may very well be worthwhile.

- (4) High quality produce is not always necessary as there is a variation in the quality of produce acceptable among different towns or between different districts of a town. Shops in a poor area do not demand high quality produce.

CHAPTER X

SUMMARY

- (1) Market gardening has been in existence in the Melbourne area for over 100 years and there is some evidence of it as early as 1800. Vegetable cultivation probably started first on the allotments or gardens of the workers on the estates in the neighbourhood and developed into a commercial industry as the population of the neighbouring towns increased.
- (2) Sixty growers co-operated in the survey and it is estimated that this represented about three quarters of the growers in the district. The total area covered by the survey was 1,800 acres or an average of 30 acres per holding, although the holdings ranged in size from under five to over 100 acres.
- (3) Of the total area of land 65 per cent was under vegetable cultivation, six per cent under fruit and the remainder under farm crops and pasture. Brassica crops accounted for 60 per cent of the vegetable acreage, brussels sprouts alone accounting for 20 per cent. Other crops of importance by area were potatoes, peas and rhubarb.
- (4) The intensity of cultivation tended to be lower on the large holdings due to a higher proportion of farm crops.
- (5) From the parish statistics it was discovered that there has been a general trend in the last few years towards less intensive cultivation. The vegetable acreage is falling and giving place to farm crops.
- (6) The system of cropping is very diversified, each grower producing an average of 20 crops.
- (7) Very few livestock are kept on the holdings apart from a few pigs and poultry for household use.
- (8) In the opinion of both the growers and the advisory officers the level of soil fertility is low. Supplies of muck have decreased in recent years. Hop manures are widely used to supply humus, but many growers have failed to use enough artificial manures.
- (9) The main sources of revenue are, in order of importance, market garden crops, fruit, livestock and livestock products, and farm crops. From the evidence available it appears that profits in the industry have fallen considerably since the end of the war. Vegetable prices have fallen more proportionately than those of fruit and glasshouse produce, so that the incomes of the Melbourne growers may have fallen more than those of more intensive producers.

(10) For 20 holdings the average expenditure on labour was £46. per acre. Of this 45 per cent was the estimated cost of the labour of the grower and his family. This was lower than labour costs on a group of Evesham holdings, but considerably higher than the average for dairy and arable farms. Expenditure per acre on labour was higher on the smaller, more intensive holdings.

(11) An average of one worker was employed for every seven acres of crops and grass.

(12) There is a shortage of labour in the area mainly due to the movement of workers into factories during the war. There has also been an increase in the arable acreage of the area without a corresponding increase in the supply of labour. The shortage of skilled workers is serious.

(13) Capital for investment has come chiefly from savings out of current income and was considerably increased during the war when incomes were high. Capital has been invested mainly in machinery and in the purchase of land. There is a high level of mechanisation, particularly on the small holdings and the only serious shortage is in spraying equipment. The average investment in machinery and equipment is £20. per acre. A noticeable feature of the area is the lack of glasshouses or Dutch lights. This is due not only to a lack of capital for investment, but to the lack of knowledge of production under glass and to the shortage of labour. Similarly there is little investment in irrigation probably for the same reasons.

(14) At the time of the survey 44 per cent of the land was owner-occupied. Much of this was bought during the two world wars, partly from a desire for security and partly to increase the size of the holding and of the business.

(15) Most buildings are adequate for present needs but would have to be improved if a more intensive type of production is undertaken.

(16) The lay-out of the holdings is in many cases, poor. Only 17 out of the 60 growers had their residence, buildings and land within a single ring fence.

(17) The two estates of Melbourne and Calke own nearly 50 per cent of the tenanted land. The majority of land is rented between £3. and £5. per acre.

(18) Two growers sold all their produce retail, 33 acted as their own wholesalers and nine sold only through a wholesaler. The remainder sold through more than one of these channels. It was estimated that produce from six per cent of the land was sold retail, from 63 per cent direct to the retailer and from 31 per cent through a wholesaler or commission agent.

(19) Retail sale or sale direct to retailers ensures that the produce reaches the consumer quickly. The main disadvantage of these systems is the grower's absence from the holding with a consequent loss in efficiency. Another disadvantage is the diversified cropping system which results when the grower has to supply a complete range of produce to his customer. Despite these disadvantages it is doubtful whether the average Melbourne grower would benefit by dealing through a wholesaler as he has only a small volume of produce to sell.

(20) The majority of growers selling through a wholesaler still retain the traditional system of cropping although they have the opportunity to take advantage of specialisation.

(21) The produce of the growers in the survey was despatched to 14 marketing centres, all within a radius of 40 miles. Derby is the most important market followed by Nottingham and Ashby and district. The majority of the growers acting as their own wholesalers sell their produce in Derby and Nottingham, and the majority of the grower-retailers in Ashby.

(22) The standard of packing and grading of Melbourne produce is low. The packing is probably poor because the produce does not have to travel far, but it appears at a disadvantage when shown alongside well-packed foreign produce. Sufficient attention is not given to grading, and the standard has not returned to that of pre-war. Before the war produce was picked the morning of sale; it is now picked the previous afternoon.

P.P.R.

