

FINANCIAL RESULTS ON TWENTY-FIVE FARMS IN
MID-ROSCOMMON IN 1948-1949.

By R. O'CONNOR, M.Agr.Sc.

(Read before the Society, February 10, 1950.)

PREFACE.

It should be explained at the outset that the main object of these inquiries is not so much to examine financial conditions in this district as to show ways and means of carrying out a more broadly based survey. In other words, these are pilot surveys conducted for the purpose of determining the type of question that should be asked to obtain reasonably accurate replies.

Consequently, readers are warned against drawing general inferences from results based on such small inquiries as these. The results presented in this paper are only from 25 farms; the area covered is very small and the farms are a selected rather than a random sample; therefore, it is not permissible to draw general conclusions from such results. Neither can it be validly concluded that these results are representative of farming in County Roscommon since, even within the county, conditions vary widely. Indeed, the only thing which can be said is that these results show the financial position for the year, 1948-49 on the farms which were included in the survey: beyond that, the writer is not prepared to go.

In this paper a Summary is given of the financial results obtained on 25 Mid-Roscommon farms in 1948-49. The period of the inquiry was from May 1st, 1948, to April 30th, 1949.

In collecting the information the "Survey" method was adopted. Books were designed as suggested in a previous paper.¹ These were prepared in the Vocational School, Elphin, by the senior pupils, and each farmer was given a copy in which to keep his accounts. A personal visit was paid to each farm at the beginning of the inquiry and most of the farmers were interviewed or the farms visited at various times throughout the year. In addition to this, a circular was sent out at the beginning of each month, asking the farmers to have their accounts entered up for the previous month.

On the whole, the account books are very well kept, particularly on the farms which had previously kept accounts. Eighteen of the 20 farmers who had been included in the 1945-46 Survey¹ co-operated in this Survey, the other two being unable to co-operate. In addition,

12 other farmers commenced keeping accounts on May 1st, 1948, but of these only seven books were found suitable for inclusion in this paper.

SIZE AND DISTRIBUTION OF THE FARMS.

The farms were situated in a district roughly 7 miles long by 3 miles wide, with the village of Elphin as centre. They varied in size between 20 and 110 acres. Four of the farmers had rented land, either as conacre or on the 11-months system, and this has been included as part of their holdings. The area of this rented land attached to the different holdings varied from 1 to 19 acres and will be referred to for the remainder of this paper as conacre. Strictly speaking, however, conacre in this district is land rented for tillage.

The distribution, according to size, of the farms, of which financial records are included in this paper, is given in Table I.

TABLE I.

Distribution of Farms according to Size, including Conacre.

Size Group	No. of Farms	Total Area	Average Area per Farm	Area of Conacre included in Col. 3
		Statute Acres		
20-40 acres	11	356	32	8
40-70 ,,	7	375	54	11
70-110 ,,	7	634	91	19
TOTAL	25	1,365	55	38

AREA UNDER THE VARIOUS CROPS DURING THE YEAR.

So as to give a picture of the type of farming carried on in the district, Table II has been compiled. For the purpose of this paper "unproductive area" represents land which was not agriculturally productive, i.e., land which was not capable of being grazed, meadowed or tilled. It includes turf bogs and unreclaimed outaway bogs.

One-sixth of the total productive area was tilled. The grain crops grown were wheat, oats and barley. The latter crop was only grown on five farms, the total area being 7 acres. The estimated yield per acre of barley on the farms where it was grown was 6 cwts. per acre. Wheat (49 acres) and oats (117 acres) accounted for 77 per cent. of the total tillage.

Approximately three-quarters of the area under roots and green crops was devoted to potatoes, the remainder being turnips, mangels, field cabbage and vegetables. On all except three farms potatoes were grown in ridges, a method of cultivation which is very time-absorbing. In conjunction with some farmers in the district, the number of man days required for the cultivation of potatoes in drills and in ridges

was estimated and the estimated figures per statute acre were as follows (these operations include digging, picking and clamping) :

Ridges	....	....	....	61 man days of 9 working hours.
Drills	....	....	....	39 man days of 9 working hours.

In other words, this means that on each of 23 of these farms over 21 extra working days had to be devoted to the potato crop than should normally have been required. This is a very considerable period of time in a fickle climate where the actual number of whole working days between March 1st and December 1st is less than 200.

TABLE II

Area under Crops and Pasture by Size of Farm.

Crop	All Farms	20-40 acres	40-70 acres	70-110 acres
Grain Crops	172	54	50	68
Root and Green Crops (including Vegetables)	42	19	11	12
Total Tillage	214	73	61	80
Meadow	258	75	78	105
Pasture	812	190	211	411
Meadow and Pasture	1,070	265	289	516
Productive Area	1,284	338	350	596
Unproductive Area	44	10	14	20
TOTAL AREA	1,328	348	364	616

Turf is another crop which, in this district, is very time-absorbing, and is often a very real hindrance to expansion of tillage and even to efficient cultivation of the present area tilled. Under the conditions which obtain in this district, however, the incentive to labour economy is not very obvious as the greater part of the labour is done by members of the family and entails no actual cash outlay, while its cost in terms of lost opportunity for other work, if real, is not always apparent.

Eighteen of the farms had apple trees but only on 7 of them was there any output of fruit. The total output of apples was given as £18 10s. 6d.

Hay and pasture accounted for 83 per cent. of the total productive area and in a few cases, hay had to be purchased to supplement the home-produced stocks.

All the crops, with the exception of wheat, were grown primarily for the maintenance of livestock and for consumption in the home. Only on two farms was there a disposable surplus of oats.

LIVESTOCK.

Table III has been compiled to give a picture of the disposal of livestock during the year.

TABLE III.

Disposal of Livestock during the Year.

				POULTRY					Total Fowl
	Cattle	Sheep	Pigs	Turkeys	Geese	Ducks	Ordinary Fowl		
All Farms									
On Hands 1/5/48	449	101	19	86	77	25	1,750	1,938	
Born	69	61	36	67	68	29	1,660	1,824	
Bought	299	48	40	—	—	—	540	540	
Sold	341	96	39	39	23	25	910	997	
Consumed in Ho.	—	—	19	10	22	3	490	525	
Died	14	6	3	43	19	2	560	624	
On Hands 30/4/49	462	108	25	61	81	24	1,990	2,156	
20-40 Acres									
On Hands 1/5/48	114	27	6	50	12	6	810	868	
Born	23	14	12	16	8	—	1,030	1,054	
Bought	59	17	20	—	—	—	110	110	
Sold	71	23	22	33	5	6	540	584	
Consumed in Ho.	—	—	6	3	7	—	260	270	
Died	7	2	1	19	2	—	280	301	
On Hands 30/4/49	118	33	9	11	6	—	870	877	
40-70 Acres									
On Hands 1/5/48	115	28	3	9	21	7	460	497	
Born	22	20	24	—	20	19	390	429	
Bought	93	24	12	—	—	—	160	160	
Sold	94	36	15	—	1	19	230	250	
Consumed in Ho.	—	—	7	1	8	3	120	132	
Died	3	4	2	4	5	—	110	119	
On Hands 30/4/49	133	32	15	4	27	4	550	585	
70-110 Acres									
On Hands 1/5/48	220	46	10	27	44	12	470	553	
Born	24	27	36	51	40	10	250	351	
Bought	147	7	38	—	—	—	270	270	
Sold	176	37	37	6	17	—	140	163	
Consumed in Ho.	—	—	19	6	7	—	120	133	
Died	4	—	3	20	12	2	170	204	
On Hands 30/4/49	211	43	25	46	48	20	560	674	

During the year 14 cattle died from various causes. Blackleg accounted for 3; red water for 2; two others (calves) were given as dying from scour or wasting; while accidents were responsible for the deaths of two others. Two were premature calves which died at birth, and the cause of death of the others was unknown.

Table IV summarises the changes that took place in dairy herds during the year.

TABLE IV

Disposal of Dairy Cows.

Size of Farm	Cows on Hands 1/5/'48	Heifers to Herd	Cows Bought	Cows Sold	Cows Died	Cows on Hands 30/4/'49	Cows not Fully Pro- ductive
20-40 acres ...	24	5	2	7	—	24	4
40-70 „ ...	20	5	3	5	1	22	2
70-110 „ ...	22	10	2	10	1	23	3
All Farms ...	66	20	7	22	2	69	9

There was less than an average of three cows per farm, the number of cows being designed to keep the family in milk and butter. Surplus milk was either sold as butter or fed to calves. Of the cows not fully productive three aborted during the year; the others failed to come in calf and were sold during the year or were being prepared for sale at the end of the accounting period.

SHEEP AND PIGS.

Sheep were kept on seven farms. On one of these there were no sheep at the beginning of the account period but some were subsequently purchased. Of the sheep which died, 4 were lambs which died at birth, one was a ewe which died at lambing. In the case of the other cause of death was unknown.

Pigs were kept on 19 farms during the year under review. A sow was kept on each of three farms and during the year 36 bonhams were born—34 of these were sold at the age of 8-10 weeks' old. Pigs were killed for home consumption on 15 farms.

POULTRY.

There was a slight increase in the total number of poultry on hands at the end of the accounting period as compared with the beginning but there was little change in the number of laying hens on the farms on these dates. The average number of laying hens per farm at the beginning and end of the period was approximately 45, and there was hardly any variation in this average as between the large and small farms.

Roughly one-third of the total number of chickens coming on to the farms during the period under review were bought as day olds. It is interesting to note that in the 1948 season almost 60 per cent. of the chickens produced for that year were either born or bought after 1st May.

Turkeys were kept on 12, geese on 8 and ducks on 5 of the farms. Guinea hens were kept on one farm.

Roughly 13 per cent. of the poultry on hands, born and bought during the year, died. No serious epidemic of poultry was reported, the birds dying being mainly young chickens. Actual figures are not available but inquiries at the end of the period revealed that the mortality rate of day-old chicks was very high.

HORSES AND DONKEYS.

The numbers of horses and donkeys on the farms at the beginning and end of the accounting period were 41 and 36 respectively. Of these, 4 were donkeys and 5 were classed as being other than draught animals, leaving 32 working horses at the beginning and 27 at the end of the period. Two horses died during the year.

TOTAL OUTPUT.

Table V shows (a) the value of the different items which made up the total output, and (b) the value of that portion of the total output which was consumed in the farmers' homes. Output in this paper refers only to that portion of the total farm production which was available for disposal either in the form of sales off the farm or for consumption in the farmers' homes. Products used on the farm for further production are not taken into account.

In the case of livestock, output refers to nett sales (i.e., after deduction of the cost of purchases and making the usual adjustments for the value of inventories at the beginning and end of the year).

TABLE V.

(a) *Value of Total Output.*(b) *Value of Produce Consumed in Homes.*

Commodity	(a) Value of Total Output		(b) Value of Produce Consumed in Homes (included in (a))		
	Value	As % of Total Output	Value	As % of Item in Column 2	As % of Total Output
Cattle	£ 6,783	53.4	—	—	—
Sheep and Wool	439	3.5	—	—	—
Pigs	638	5.0	267	41.7	2.1
Poultry	421	3.3	187	44.4	1.5
Eggs	1,621	12.8	361	22.3	2.9
Liquid Milk	263	2.1	263	100.0	2.1
Butter	563	4.4	460	81.7	3.7
Crops	1,000	7.9	373	37.3	2.9
Turf	611	4.8	608	100.0	4.8
Sundries	362	2.8	—	—	—
TOTAL	12,701	100.0	2,519	20.0	20.0

Compared with financial results from this district in 1945-46¹ there is practically no change in the relative importance of the items which constituted the total output.

The average output of cattle per farm was £271, but when the farms are grouped on a size basis, the output is as follows :

20-40 acre farms	....	....	£147, range £80-£215.
40-70 acre farms	....	....	£275, range £117-£477.
70-110 acre farms	....	....	£462, range £424-£593.

OUTPUT OF EGGS.

In view of the recent emphasis laid on poultry and eggs as a source of farm income a table showing the output of eggs each month on these farms is deemed of interest. Accordingly, Table VI has been prepared to show (a) the relative number of eggs produced each month, and (b) the relative value of eggs produced each month on 23 farms from 1/5/48 to 30/4/49. Monthly figures from two farms are not available.

TABLE VI.

Relative Output of Eggs per Month.

Month	Value of Eggs Produced				Number of Eggs Produced			
	All Farms	20-40 Acres	40-70 Acres	70-110 Acres	All Farms	20-40 Acres	40-70 Acres	70-110 Acres
	Percentage							
May ...	12	12	13	10	12	12	13	10
June ...	10	11	10	10	10	10	10	10
July ...	9	9	11	9	9	9	10	8
August ...	8	8	7	9	8	7	7	8
September ...	6	6	6	7	6	6	6	6
October ...	6	6	5	6	5	6	4	5
November ...	6	5	6	6	5	5	5	5
December ...	6	7	4	5	5	6	4	5
January ...	8	8	8	8	8	8	8	8
February ...	8	8	9	7	8	9	9	8
March ...	11	11	10	11	12	11	12	13
April ...	10	9	11	12	12	11	12	14
	100	100	100	100	100	100	100	100

No record was kept of the number of laying birds on the farms each month, but if we are to take the average of the laying hens at the beginning and end of the period as the average number of laying hens during the year (a figure which according to Wyllie² must be taken with caution) the average number of eggs laid per hen is roughly 116 and the average output per hen roughly 26/-. Figures published for egg production on 16 commercial flocks in Northern Ireland in 1947-48³ give the average output per hen as 114 eggs per annum. In this case the numbers of laying birds on the farms were taken each month and from the total of these the average number for the year was calculated. Again, if we take the average at the beginning and end as the average number of laying hens, three farms gave an output of about 150 eggs per hen for the year, the monetary output per hen on these farms being about 38/- each. It is interesting to note that these three farms did not belong to any one particular size group, there being one of each in the three groups. The average number of hens kept on these three farms was 50.

Three farms gave an output of over £100 each from eggs, and if the output from poultry be included along with eggs the total output from poultry on these farms comes to £383, an average of over £127 per annum.

The average output of eggs and poultry together was about £82 per farm, but in order to show how this output was distributed over the farms, the following table has been constructed.

This table shows that on seven farms the income from poultry was on an average over £2 per week. This figure includes poultry and eggs consumed in homes. On the best farm the output was almost £140 for the year, which figure was about £2 14s. per week from poultry. The farm attaining to this output was in the 20-40 acres group.

TABLE VII.

Distribution of Output of Poultry and Eggs by Size of Farm.

Amount of Output	20-40 Acres	40-70 Acres	70-110 Acres	All Farms
	Number of Farms			
£				
120-140	2	2	—	4
100-120	2	1	—	3
80-100	3	—	3	6
60- 80	2	1	1	4
40- 60	2	2	3	7
20- 40	—	1	—	1
TOTAL ...	11	7	7	25

RELATIVE OUTPUT OF THE DIFFERENT PRODUCTS.

The general analysis of the total output given in Table V is carried further in Table VIII, which shows for the different size groups the value of the output of the different products as a percentage of the total output.

TABLE VIII.

Output of Different Products as a Percentage of Total Output by Size of Farm.

	All Farms	20-40 Acres	40-70 Acres	70-110 Acres
	Percentage			
Cattle	53.4	39.1	52.2	66.1
Sheep and Wool	3.5	3.3	3.2	3.9
Pigs	5.0	7.8	7.3	1.4
Poultry	3.3	5.1	3.2	1.9
Eggs	12.8	18.4	12.9	7.8
Liquid Milk	2.1	3.3	1.8	1.2
Butter	4.4	5.8	5.5	2.4
Crops	7.9	7.9	6.7	8.7
Turf	4.8	7.0	4.6	3.2
Sundries	2.8	2.3	2.6	3.4
	100.0	100.0	100.0	100.0
Consumption in Farmers' Homes as percentage of Total Output	20.0	29.5	18.2	13.0

This table shows that while cattle was the most important product on all the farms, the relative importance of cattle was greater on the larger farms. A much greater proportion of the total output was

consumed in the homes on the smaller farms than on the larger holdings, while the actual consumption of home-produced foods was greater on the smaller farms also. The actual average value of the produce consumed in each of the farmers' homes was:

All farms—£100; 20-40 acres—£111; 40-70 acres—£95; 70-110 acres—£90.

OPERATING COSTS.

A summary of the distribution of the various items of farm costs is given in the following table. In this paper rent refers to land annuity, since it has predominantly that character:

TABLE IX.

(a) *Actual Distribution of Items of Operating Costs on all Farms.*

(b) *Percentage Distribution of Items of Operating Costs by Size of Farm.*

Items of Expenditure	Actual Costs	Items of Expenditure as Percentage of Total Costs			
	All Farms	All Farms	20-40 Acres	40-70 Acres	70-110 Acres
		Percent			
	£				
Rent	286	6.4	6.6	8.9	4.8
Rates	448	10.6	9.2	9.9	11.7
Rent of Conacre	95	2.1	1.2	2.9	2.1
Crops and Concentrates	634	14.1	30.4	13.9	5.8
Repairs and Depreciation	630	14.1	10.5	11.8	17.1
Manures	281	6.3	8.2	7.5	4.6
Seeds	191	4.2	4.7	3.4	4.5
Ploughing, Mowing, Threshing, Crushing	191	4.2	6.6	4.7	2.8
Veterinary Fees, Service Fees, Sprays	142	3.1	4.6	3.7	2.0
Horse Shoeing	73	1.6	2.1	2.0	1.1
Miscellaneous	304	6.8	5.0	5.2	8.5
Total of above Items	3,275	73.5	89.1	73.9	65.0
Hired Labour	1,189	26.5	10.9	26.1	35.0
Total Costs	4,464	100.0	100.0	100.0	100.0

This table shows that hired labour on the large farms and crops and concentrates on the small farms were the most important items of expenditure. Of the crops and concentrates purchased practically all were concentrates, such as Indian meal and pollard. On the 20-40 acre farms the actual expenditure on meals was £336, an average of, roughly, £30 per farm. In the other size groups the expenditure on meals per farm was: £22 on the 40-70 acre farms, and £16 on the 70-110 acre farms.

The figure £448 as rates for roughly 1,300 acres of land, together with farm buildings, may seem small in these days of high rates. The P.L.V. of the land and farm buildings was £831 and the rate, therefore, worked out at 10/9 in the £. The actual rate levied by the County

Council for the year was 22/1 in the £, but the amount payable on land and farm buildings was reduced to this figure by the agricultural grant.

An average of £11 per farm was spent on artificial manures, this item being purchased on all except two farms. These two farms were in the 20-40 acre group. The average expenditure on artificial manures per 100 acres was about £22, which is a little over 4/- per acre.

Soil tests carried out by the writer in this district in 1945 revealed that most of the land was deficient in phosphates, some of it being extremely so.

Practically nothing in the way of overcoming this deficiency has yet been attempted and there can be no doubt that much heavier rates of application of manures are necessary if these farms are to attain to reasonable production.

The manurial question is closely related to the question of purchased crops and concentrates. Liberal manuring by increasing yields should help to reduce the expenditure on crops and concentrates, and thus tend to make these farms much more self-sufficient than they are.

PROPORTION OF OUTPUT AVAILABLE FOR LABOUR.

Table X shows (a) the proportion of the total output which went towards defraying ordinary operating costs, and (b) the proportion which was available for remunerating the workers, both hired and family. For the remainder of this paper, the latter item will be referred to as "Total Labour Income" and that proportion of the "Total Labour Income" which remained after hired workers had been paid will be referred to as "Total Family Labour Income". This is the same procedure as that adopted by Murphy in his survey of Cork Farms,^{4,5} and by the writer in his previous survey of Rosecommon Farms.¹

TABLE X.

Proportion of the Total Output available as Total Labour Income.

Size of Farm	Total Output			Expenses Excluding Cost of all Labour	Total Labour Income	Total Labour Income as % of Total Output
	Sales	Consumed in Homes	Total			
	£					%
20-40 acre Farm	2,915	1,221	4,136	998	3,138	75.9
40-70 acres ...	3,006	667	3,673	892	2,781	75.7
70-110 ,, ...	4,260	632	4,892	1,389	3,503	71.6
All Farms ...	10,181	2,520	12,701	3,279	9,422	74.2

Roughly threequarters of the total output was available for the remuneration of labour, both hired and family, and this proportion was fairly constant within the three size groups.

A further analysis of the total output is given in Table XI, which shows the value of the total output, the expenses excluding costs of labour and the total labour income per acre of crops and pasture. As might be expected, this table shows that the total labour income per acre was greater on the smaller than on the larger farms.

TABLE XI.

Output, Operating Costs, and Total Labour Income per Acre of Crops and Pasture.

Size of Farm	Total Output per Acre	Expenses, excluding Costs of Labour	Total Labour Income per Acre
	£		
20-40 acres	12.2	3.0	9.2
40-70 "	10.5	2.5	8.0
70-110 "	8.2	2.4	5.8
All Farms	9.9	2.6	7.3

SIZE AND COMPOSITION OF LABOUR FORCE.

There was a total of 78 people over the age of 14 years on all the farms. Of these six were too old to make any effective contribution to the farm work and there remained, therefore, 72 persons—41 males and 31 females who actually contributed to the farm work during the year. The extent to which these workers contributed to the various farm operations was as follows:

- (1) The male family members from whom work could be expected, devoted 80 per cent. of their time to farm work.
- (2) The female workers of the family devoted 27 per cent. of their time to farm work.
- (3) The ratio of male to female labour was approximately 5 : 1 on all the farms.
- (4) There was an average of 2 units of labour employed on each farm during the year, whereas the employment per 100 acres of crops and pasture was roughly 4 units.

The total output per unit of labour (hired and family) was as follows:

All farms—£254;

20.40 acres—£225; 40-70 acres—£253; 70-110 acres—£290.

REMUNERATION OF LABOUR.

1. The amount available per farm as wages for all workers, both hired and family, ranged from approximately £5 10s. per week on the small farms to £9 12s. per week on the larger farms, assuming the produce consumed in the homes to have been sold at farm prices. The average for all the farms was roughly £7 5s. per week.

2. The average weekly remuneration per unit of labour (hired and family) varied from about £3 6s. to £4 depending on the size of the farm. The overall average was £3 12s. per week.

3. After the costs of hired labour had been met, there remained as remuneration for all the family workers about £6 5s. per farm per week (range £5 6s. on the 20-40 acre farms to £7 11s. on the 70-110 acre farms).

4. The weekly remuneration of family labour per unit, after hired labour had been paid, varied from about 66/- to 90/- according to the size group. The overall average was 78/- per week for each unit of family labour employed. It is of interest to note that the minimum statutory wage for agricultural workers for the year was about 56/6 per week.

PROFIT AND LOSS PER FARM.

In the following tables the financial results on these farms are given in terms of profit and loss. The figures for profit and loss have been arrived at by deducting from the total output all expenses, including the cost of hired and family labour. It is difficult to arrive at a suitable figure for the remuneration of family labour, but for want of a better one, the appropriate rate for hired labour has been allowed to family workers.

In Table XII, therefore, the financial results are given assuming family male workers to have been paid the statutory agricultural wage, and family female workers the same rates as those ruling in the district for hired female workers.

TABLE XII.

Financial Results, assuming Family Labour to have been Paid at the Same Rate as Hired Labour.

Size of Farm	Total Labour Income	Cost of Hired Labour	Cost of Family Labour at Hired Rates	Total Surplus	Surplus per Farm
	£				
20-40 acres	3,138	121	2,353	664	60
40-70 ,,	2,781	315	1,525	941	134
70-110 ,,	3,503	752	1,654	1,097	157
All Farms	9,422	1,188	5,532	2,702	108

The average figures from the above table do not, however, tell the whole story. They tend to conceal the fact that on some farms there would be a deficit if family labour were paid at the same rate as hired labour. Accordingly, Table XII has been constructed to show in a general way the number of farms in each size group which had a surplus and the amount of the surplus.

As in the case of the previous survey in this district in 1945-46¹ this table shows that there was a wide variation in the surplus earned. This state of affairs, however, is a common feature of farming everywhere and is not typical of this district, as may be gleaned from the following quotation from a Cambridge University Report: "The most

TABLE XIII.

Distribution of Surplus by Size of Farm.

Amount of Surplus £	All Farms	20-40 Acre	40-70 Acre	70-110 Acre
-100 to 0	4	2	1	1
0 to 100	8	5	3	—
100 to 200	8	4	1	3
200 to 400	4	—	1	3
Over 400	1	—	1	—
No. Farms earning Surplus ...	21	9	6	6
No. Farms with Deficit ...	4	2	1	1

outstanding characteristic of the farming industry is the immense range which exists not only in the size of business units and in systems of organisation, but also in productivity and profits; in almost any farming function a normal variation either of import or output is from 50 per cent. below to 100 per cent. above the average.”⁶

Table XIII shows that four farms out of 25 were unable to pay to the family workers the standard agricultural wage. This, however, is an improvement on the position in 1945-46, when nine farms out of 20 failed to reach this standard. It is interesting to note that, of the nine farms which showed a deficit in 1945-46, five earned a surplus in 1948-49; two showed a deficit and the other two were not included in the 1948-49 survey.

It is usual for British and Northern Irish investigators when presenting the results of financial surveys, to allow remuneration at appropriate rates for all family labour other than that of the farmer and his wife. What remains after deducting this allowance from the family labour income is classed as the farmer's share and is deemed his salary as farm manager, farm worker and landowner. In the following table, this procedure has been adopted and the financial results are given after allowing to family workers other than the farmer and his wife the wages ruling for hired workers.

TABLE XIV.

Farmer's Share by Size of Farm.

	Total Family Labour Income	Cost of Family Labour other than Farmer and Wife	Farmer's Share		
			Total	Per Farm	Per 100 Acres
			£		
20-40 acres	3,017	865	2,152	196	637
40-70 „	2,466	617	1,849	264	528
70-110 „	2,750	640	2,110	301	354
All Farms	8,233	2,122	6,111	244	476

The above table shows that the amount available for the farmer and his wife, after paying the other family workers the standard agricultural wage, varied from £3 15s. per week on the smaller farms to £5 14s. on the larger farms, the average for all the farms being £4 14s. per week. If, however, the produce consumed in the homes be excluded, the farmer's share in cash per farm for the year was :

£85 on the 20-40 acre farms; £140 on the 40-70 acre farms;

£208 on the 70-110 acre farms and £143 on all the farms.

Calculated on a weekly basis, these figures show that on the 20-40 acre farms, the farmer's share was 33/-; on the 40-70 acre farms 54/- and on the 70-110 acre farms 80/- per week. The average for all the farms was 55/- per week.

OPENING VALUATIONS.

In the following table are given the farmer's investments on 1st May, 1948, in :

- (a) Livestock.
- (b) Machinery and implements.
- (c) Farm buildings, excluding dwelling house.
- (d) Land.

The basis on which the different items were valued are given in Appendix II.

TABLE XV.

Value of Live Stock, Dead Stock and Draught Animals on 1[5]48

Live and Dead Stock	Size of Farm			All Farms	
	20-40 acres	40-70 acres	70-110 acres	Total	Percentage
	£				
Cows	690	585	660	1,935	4.3
Other Cattle	1,758	2,095	5,780	9,633	21.6
Sheep	130	150	209	489	1.1
Pigs	92	50	12	154	.3
Poultry	202	120	136	458	1.0
Horses other than Draught animals ..	5	15	61	81	.2
Total Livestock ..	2,877	3,015	6,858	12,750	28.5
DEAD STOCK AND DRAUGHT ANIMALS					
Machinery	713	690	1,745	3,148	7.0
Land and Farm Buildings	7,308	7,644	12,915	27,867	62.4
Draught Animals	330	317	280	927	2.1
Total	8,351	8,651	14,940	31,942	71.5
TOTAL LIVE AND DEAD STOCK AND DRAUGHT ANIMALS	11,228	11,666	21,798	44,692	100.0

Land, buildings and machinery accounted for almost three-quarters of the total assets, land being over twice the combined value of the other two. The average value of machinery per 100 acres on all the farms was about £245, the range being from £211 on the 20-40 acre farms to £298 on the 70-110 acre farms.

The value of the total livestock per acre was, roughly, £11 on all the farms—a figure which was fairly constant in the different size groups. A reference to Table V shows that for every one pound invested in poultry, the average value of the output obtained was £4 9s.

INTEREST ON CAPITAL.

As a measure of the capital requirements on these farms, the inventories in Table XV are somewhat defective. The basis of the valuations is not always "market value" and it does not follow that valuations made for the purpose of arriving at a figure for profit and loss, also represent the market value of these items of stock if they were bought or sold at a farm sale. It may also be argued that farms may not be fully stocked at the time the valuations were made, and such assets as working cash balances to meet this and other expenses have not been included. Other methods of arriving at capital have been adopted by other workers⁶ but, since in this case, the valuations were made on the 1st of May, at a time when the farms were practically all fully stocked for summer feeding, and since expenditure on these family farms is to a great extent met by egg sales until such time as cash from cattle sales comes in, the valuations in Table XV are probably the nearest practical approach to the capital investments of these farms.

In the following table, therefore, the valuations in Table XV are treated as total capital and the total output, total labour income, family labour income and the surplus after paying family labour at hired rates are given as a percentage of this capital:

TABLE XVI.

Interest on Capital by Size of Farm.

Size of Farm	Capital	As Percentage of Capital			Surplus
		Total Output	Total Labour Income	Family Labour Income	
		Percent			
	£				
20-40 acres	11,228	36.9	28.0	26.9	5.9
40-70 "	11,666	31.5	23.9	21.2	8.1
70-110 "	21,798	22.5	16.0	12.6	5.1
All Farms	44,692	28.4	21.0	18.4	6.1

EMPLOYMENT CAPACITY BY SIZE OF FARM.

In his Financial Survey of Cork Farms, 1940-41,⁵ Murphy maintained that as a theoretical minimum standard of performance, a farm should be able to provide economic employment for at least two units of labour, i.e., for the farm owner and for the son who is to succeed to the farm. He also says that this figure might be reasonably increased to two and a half units so as to include the work that must invariably be done by the farm owner's wife, or to allow for the part-time employment of the daughter destined to marry into another farm. In order to demonstrate how these Roscommon farms measured up to this standard of efficiency Table XVII has been prepared.

This table shows, for each size group, the number of units of labour to whom these farms were able to give economic employment at the statutory wage payable to hired workers. The rate of wages, including national health insurance contribution, for a full year, has been taken at £148 and the employment capacity has been calculated by dividing the total labour income by the rate of wages payable.

TABLE XVII.

Employment Capacity by Size of Farms.

Units of Labour	All Farms	20-40 Acres	40-70 Acres	70-110 Acres
1.0 to 2.0 Units	6	4	1	1
2.0 to 2.5 „	7	5	2	—
2.5 to 3.0 Units	4	2	2	—
3.0 to 4.0 „	5	—	1	4
4.0 to 5.0 „	3	—	1	2

If we are to take an employment capacity of 2.5 units of labour per farm as the minimum standard of efficiency, Table XVII shows that 13 of the 25 farms failed to reach this standard. It is noteworthy that nine of the eleven farms between 20 and 40 acres were not able to give employment to 2.5 units of labour.

By way of conclusion, thanks are expressed to the farmers who so generously and patiently provided the data summarised in this paper, and to the various other people, too numerous to mention, who gave advice and assistance at all stages of the survey.

APPENDIX I.

TABLE XVIII.

Financial Results on Sixteen Farms in 1948/49, compared with the same Farms in 1945/46.

	1945-'46	1948-'49	Increase +; or Decrease -
Number of Farms	16	16	—
Total Productive area, including conacre—St. acres	895	833	—62
Total Area of Conacre—acres	73	11	—62
Size range—acres	25-110	25-110	—
	£		
<i>Total Output :</i>			
Horses	60	—	—60
Cattle	3,991	4,736	+745
Sheep and Wool	233	350	+117
Pigs	229	450	+221
Poultry and Eggs	1,021	1,441	+420
Dairy Produce	558	518	—40
Crops	766	670	—96
Others	370	521	+151
TOTAL	7,228	8,686	+1,458
<i>Operating Costs :</i>			
Rent, including that of Conacre ...	348	278	—70
Rates... ..	290	304	+14
Crops and Concentrates	183	393	+210
Manures	53	193	+140
Seeds	242	155	—87
Repairs and Depreciation*	190	486	+296
Others	335	504	+169
Hired Labour	921	864	—57
TOTAL	2,562	3,177	+615
Total Labour Income (Total) ...	5,587	6,373	+786
“ “ “ (Per Farm) ...	349	398	+49
“ “ “ (Per Unit) ...	153	189	+36
Total Family Labour Income (Total)	4,666	5,509	+843
Total Family Labour Income (Per Farm)	292	344	+52
Total Family Labour Income (Per Unit)	166	202	+36
Cost of Family Labour at Hired Rates	2,428	3,734	+1,306
Surplus per farm after paying Family Labour at Hired Rates	140	111	—29
Range of Surplus	—117 to 816	—90 to 415	
Number of farms earning surplus ...	10	14	4
Total Output per acre£	8.1	10.4	2.3
Total Output per Unit Labour ...£	200	258	+58

*Fixed Rates of Depreciation were allowed in 1945-46 whereas the “Diminishing value system” was adopted in 1948-49. (See Appendix II). In 1948-49, minor replacements are included in Repairs and Depreciations, whereas in 1945-46, such replacements were included in Miscellaneous Expenses.

APPENDIX II.

1. *Valuation of Products used in Farmers' Houses :*

New Milk	... ..	1/5 per gallon.
Buttermilk	... ..	1½ per gallon.
Potatoes	... ..	8/- per cwt. for quantities actually boiled. These quantities were normally in excess of household requirements.
Cabbage	... ..	2d. per head.
Carrots and Parsnips	... ..	2/6 per stone.
Turnips	... ..	½d. each.
Onions	}	At their sale value.
Pigs		
Eggs		
Poultry		
Apples	... ..	2/- per stone.
Gooseberries	... ..	7/- per stone.
Rhubarb	... ..	2/- per stone.

2. *Turf*:—Two-thirds of the estimated value of Turf in the farmyard has been included in the Tables as Turf Output. It was assumed that the other one-third was used for further production, i.e., for the cooking of farm foods.

3. *Female Hired Labour*:—This item was so small as to be almost negligible, but the cost was calculated as follows:—It was estimated that Female Hired workers devoted about one-third of their time to farm work and, therefore, one-third of their total wages was charged against the farm.

4. *Female Family Labour*:—This has been calculated on the same basis as that of the Female Hired Labour, and its value based on that of equivalent Hired Labour ruling in the district.

5. *Male Family Labour*:—This has been calculated on the same basis, and in accordance with the "Agricultural Wages Act," and has been equated to units. One unit equals one male worker employed wholetime for 52 weeks. Where necessary, adjustments for Male Family Labour under 20 years of age have been made according to the scale implicit in "The Agricultural Wages Board Order."

6. *Insurance*:—The proportion of National Health Insurance Contribution payable by the farmer has been included as part of the Cost of Labour. Workman's Compensation Act and other Insurance have been included in the costs as "Miscellaneous."

7. *Non-Agricultural Earnings*:—In the case of a few of the holdings, the ordinary Farm Income was supplemented by earnings from the Co. Council and E.S.B. The actual cash received has been included in the Total Output under the heading "Sundries."

8. *Livestock Inventories*:—Cows on hands at the opening and closing Inventories have been valued at a standard rate of £30 per head. Cows bought during the year and heifers transferred to the herd have been included in the closing Inventories at their actual value. Stock bulls have been depreciated at appropriate rates, depending on the animal. Other cattle and calves have been taken at the farmer's valuations on 1/5/48 and 30/4/49.

Sows, pigs, sheep and lambs were taken at the farmer's valuations.

Poultry.—Stock birds were valued as follows: Hens, 6/-; Ducks, 6/-; Geese, 14/-; Turkeys, £1. Others at farmer's valuations. Poultry in the homes were accounted for at their estimated sale value.

9. *Depreciation :*

Horses	... ..	£2.
Donkeys	... ..	10/-.

Implements.—The depreciation of implements has been calculated at rates varying from 5 per cent. per annum to 22½ per cent. on the initial valuations. These

are the rates used by most British and Northern Irish investigators, and are the same as those agreed by the British N.F.U., and the Inland Revenue Commissioners for Income Tax.⁷ The rates are as follows :—

Threshing Machines, Boilers and Fixed Plant	... ..	8%
Electric Installations	... ..	7½%
Petrol or Oil driven Tractors	... ..	22½%
Binders, Reapers and Combined Harvesters	... ..	15%
Sprayers	... ..	25%
All other types of Farm Machinery and Implements, including portable Poultry Sheds and Incubators	... ..	10%

In addition to the above, the Revenue Commissioners allow a further one-fifth of this allowance by way of relief from tax. In these accounts, this extra one-fifth has not been allowed since it is more an incentive to purchase mechanical aids to better farming than a true depreciation of the implements. This is in accordance with British procedure.⁸

Small items of equipment like spades, forks, buckets, etc., were taken at their replacement value and were not included in the Inventories.

Owing to the impossibility of arriving at a reliable estimate, no depreciation has been charged on buildings.

10. *Valuation of Land and Farm Buildings* :—Owing to the difficulty of getting separate estimates for Land and Buildings, these two items have been grouped together. The farm houses have been included along with buildings since it was impossible to get reliable estimates of the value of the farmhouses alone and since in most cases the farmhouse is as much a part of the farm as any of the out offices. During the year 1948, the value of land sold in County Roscommon was £21 15s. per acre, which figure includes Farm Buildings and Farm houses. In this paper, land, including buildings and farmhouses, has been valued at £21 per acre. The figure for value of land sold in County Roscommon in 1948 was kindly given by Dr. Geary, Director of the Central Statistics Office.

References.

¹ O'Connor, R. *Financial Results on Twenty Farms in Mid-Roscommon in 1945-46*. J. Stat. & Social Inquiry Soc. of Ireland, 1948-49, Vol. XVIII.

² Wyllie, James. *Report No. XVI*. Wye College, Kent, p. 204, July, 1935.

³ *Financial Results of Egg Production in Northern Ireland*. Monthly Report, Ministry of Agriculture, N.I., Vol. XXIV, August, 1949.

⁴ Murphy, M. *Financial Results on Mixed Dairy Farms, 1937-38*. J. Stat. & Soc. Inquiry Soc. of Ireland, 1938-39.

⁵ Murphy, M. *Financial Results on Sixty One West Cork Farms in 1940-41*. J. Stat. & Soc. Inquiry Soc. of Ireland, 1942.

⁶ *Report No. 31*. Farm Economics Branch, University of Cambridge, July, 1948.

⁷ *Farmers' Income Tax*. Government of Northern Ireland, Ministry of Agriculture.

⁸ *A Yorkshire Farm Accountancy Study, 1946-47*. Farmer's Report No. 77. Economic Section, Dept. of Agriculture, University of Leeds, August, 1948.

DISCUSSION.

Professor J. Johnston pointed out in moving the vote of thanks that there appears to be a slight decrease in the number of agricultural horses, and pointed out that this is part of a general trend in the statistics of the country as a whole. Agricultural horses in Northern Ireland diminished from 76,000 in 1939 to 54,000 in 1949, as a result of mechanisation. In our case it is too soon to say whether increasing mechanisation or diminishing tillage is the principal cause of the present incipient decline.

The expenditure of 4/- an acre on manures in the Roscommon farms

is very low. On 296 Northern Ireland farms which kept officially supervised accounts in 1947-48 this item averaged £1 2s. 11d. per acre.

A gross output of £9.9 and a consequent labour income of £7.8 per acre are also low. Labour income in the 296 farms referred to above averaged £12 13s. 11d. per acre.

The paper would have been improved if a table showing value of instrumental capital per labour unit on the different farm sizes had been included. This might then have been compared with a similar table showing labour income per unit in different farm sizes. Mr. Murphy's tables of this kind certainly suggested that there is a relation between labour income and the amount of instrumental capital available per labour unit. Such a relation is probable in any case on general grounds.

Mr. E. J. Sheehy said Mr. O'Connor has provided us with an illuminating document in that in this set of costings figures he gives a clear picture of the financial and economic conditions on the farms surveyed. The author does not make any inferences or state his personal conclusions, but his figures reveal an alarming state of affairs. It is a picture which, however, coincides with the impression of farming, already held by many of us in relation to that and many other similar areas of the country.

The crop and animal production is deplorably bad, efficiency is appallingly low, and, accordingly, profits in many cases are nil or a minus quantity. On the average, according to Table XIV, the farm owner and his wife have available per week the sum of £4 14s. 0d. as total remuneration for the two of them, in respect of labour and managerial salary.

One asks for an explanation of this very disturbing state of affairs on the farms in the district surveyed. That the efficiency and economic conditions of these landowners is a matter of choice no one will claim. No doubt they wish to be better off, but it may be that the majority of them are not aware of the possibility of being better off on the holdings they possess. Education and demonstration of more profitable methods of farming are needed. In the absence of capital, however, the superior knowledge cannot be applied, nor can the opportunity to make more money on better seeds, extra manurial dressing, improved methods of stock feeding, and more mechanised farming be availed of.

As matters stand these people are incapable of helping themselves. Their capability to employ labour, even the members of their own families, is very low and hence the migration of the young people from that and so many other districts to the cities. Similarly, the purchasing power of those engaged in farming in the district is at a very low level, so that they are incapable of absorbing even a small fraction of the industrial products of the country. A comprehensive programme of agricultural development is the remedy for the appalling state of affairs spot-lighted by Mr. O'Connor's excellent paper.

Dr. Kennedy referred to the increase in cattle prices in the accounting period. That increase, amounting to about 20 per cent., introduced a fictitious element amounting to probably £15,000 into the output. At a uniform price level it would mean a diminution of the reward of family labour units averaging about 13/6 per week. If 4 per cent. were allowed on capital it would mean that the remuneration of family labour would be well below the statutory wage of an

agricultural worker. The output per acre and per man was very low, a state of affairs which could be remedied only by more knowledge and more capital. In addition, the system of farming is not such as to ensure a good living on small farms at any price level which the future is likely to bring.

The President (Dr. R. C. Geary) congratulated Mr. O'Connor on his excellent paper, the second of his series of inquiries. It is particularly useful to have these inquiries in series, since a first inquiry is necessarily experimental and it is necessary to have a second inquiry to establish confidence in the results. In this connection, Mr. O'Connor's Table XVIII is specially valuable since far more accurate inferences may be drawn from comparisons in time than comparisons in space, so to speak, from small-scale inquiries when these inquiries extend to same farms. Mr. O'Connor, in his opening paragraphs, is very guarded, and properly so, as to the danger of drawing general inferences from his results. As applying to a particular kind of agriculture in a particular part of the country, his results can be accepted as reliable. In this connection, it is of interest to compare statistics derivable from Mr. O'Connor's paper with those for the whole country.

		Ireland	Mr. O'Connor
Average area per farm of crops and pasture	Acres	47*	55‡
Percentage tilled	%	19.7†	16.7*
Gross Output :			
Per 100 acres of crops and pasture ..	£	1,034	989
Per farm	£	315	508
Own produce without process of sale consumed in farm households as % of gross output	%	26.9	19.8
Do, excluding turf	%	23.4	15.8
Purchased feeding stuffs, fertilisers and seeds :			
As % of gross output	%	12.1	8.7
Per 100 acres of crops and pasture ..	£	126	86
Eggs laid per hen	No.	105	116

* Farms 15 acres and over, 1931. ‡ Farms 20 acres and over, 1948-49.
† Area tilled (all farms) as % of crops and pasture, 1948.

The official statistics, however, relate only to the country as a whole. The great advantage of surveys like Mr. O'Connor's is that from them data can be obtained for different areas, different types of husbandry, different sizes of farms, etc., and far greater detail is obtainable in regard to costs of production, changes in stock (other than live stock), etc. The table shows in particular that the gross output per 100 acres of crops and pastures is, at about £1,000, practically identical on Mr. O'Connor's farms with a national average. That the produce consumed in farm household as a percentage of gross output is larger for the whole country than on Mr. O'Connor's farms (27 per cent. as compared with 20 per cent.) is mainly attributable to the fact that Mr. O'Connor's farms are in the medium-size category, whereas the national statistics cover small farms, in particular those of the west and north-west of the country, where subsistence farming is the rule. It will be noted that purchased feeding stuffs, fertilisers and food constitute a smaller proportion on

Mr. O'Connor's farms than the general average. Eggs laid per hen are about the same from the two inquiries.

The percentages shown in the third column of Table V compared with the corresponding percentages for the whole country indicate clearly the type of husbandry practised on Mr. O'Connor's farms. In fact, the percentage borne by cattle on his farms is 53 per cent. as compared with 20 per cent. for the national average. Eggs and poultry are about the same at 16 per cent. The percentage for crops is very low—8 per cent. as compared with 22 per cent. for the national average. Milk and butter account for $6\frac{1}{2}$ per cent. of gross output on Mr. O'Connor's farms as compared with no less than 2 per cent. on all farms. All of Mr. O'Connor's results seem consistent with those for the country as a whole when allowance is made for differences in type of agriculture.

It is interesting to note Mr. O'Connor's emphasis, once more, from his Table XIII, on the great variability, even on farms of much the same size, of the surplus, even in a year when live stock losses, which so often represent the difference between profit and loss, were not specially significant. Could Mr. O'Connor state if the losses on the 4 farms in Table XIII were due to cattle mortality? It is noted that the yield of barley is very low, though the acreage on these farms is small. It would be interesting to know the yields of other crops for comparison with the official figures. It would be also interesting to know from Mr. O'Connor's records the average yield of milch cows.

Dr. Geary stated that he was happy on this occasion to announce that the trail blazed so ably by Professor Murphy and Mr. O'Connor would be followed during the coming 12 months by official statisticians. The Government had, in fact, approved the institution of a series of farm surveys for an experimental period of 12 months extending to the whole Twenty-Six Counties, and plans were well advanced for the inauguration of the inquiry. It is hoped on the first occasion to cover several hundred farms selected with as much regard to the ideal of random sampling as was practicable. Professor Murphy's and Mr. O'Connor's papers had shown the practicability of those surveys and in large measure how they should be conducted.

Mr. O'Connor said that there are two factors responsible for the low application of manures. One is that the farmers are not always fully alive to the advantages of manuring and the second reason is that many who would wish to apply manures have not the capital to buy these.

The need for laying down land to grass with a good grass seed mixture is not yet fully realised by the great majority of the farmers in this district. Many lay down their land even yet without any seeds. In my own experience a few have put in good seeds mixture which failed. This is not a good advertisement. The reasons for failure were (I) bad seed bed; (II) corn lodging on the grass; (III) infertility.

In actual fact the land in the district is potentially very good and will give good crops if properly cultivated and manured. The soil is very heavy, however, rainfall is about 45" per annum and tillage will never be popular in the district. I think the small farm can never be an economic unit under such conditions.

I agree with Dr. Kennedy that a proportion of the cattle output may never be realised, but there is no way of getting over this

difficulty. A simple deduction from the value of the stock on hand by the amount they have appreciated will not give correct results either, but if we disregard opening and closing inventories the actual cash output of cattle was £4,679 as compared with £6,783 by the orthodox calculation.

I agree with Professor Sheehy that the flight from the land is an economic urge, but I do not think that conditions on these farms are altogether as bad as many speakers to-night seem to think. Actually, some of these farmers are doing quite well and I think Mr. Hussey's is a good point that what the best can do is possible of attainment by all, and that if he could bring the worst up to the average conditions would be quite good on these farms.

Regarding yields of crops, they are variable, but good crops of oats are the rule rather than the exception. I would say the average yield of oats would be in the region of 18 cwts. per acre; potatoes about 10 tons per acre and the average yield of milk per cow about 350 gallons.

I cannot say what is the possibility of starting a creamery in the district, but I know that such an enterprise is badly needed. The disposal of surplus milk in summer is a problem, and since it takes about $2\frac{1}{2}$ gallons of milk to make 1 lb. of butter, it is obvious that the sale of farmers' butter at 2/- per lb. is not an economic proposition when creameries are giving $\frac{1}{3}$ per gallon for milk. The feeding of cream to commercial calves is, in my opinion, an uneconomic process also.

NOTE.

On March 3rd, 1950, a paper on "Recent Developments in National Income Research throughout the World" was delivered by Mr. J. R. N. Stone, C.B.E., Director, National Accounts Research Unit of the Organisation for European Economic Co-operation. The vote of thanks was proposed by Professor Duncan, seconded by Mr. Whitaker. Other speakers were Mr. Thornton, the President (Dr. Geary), Mr. Eason, Mr. Clarke, Mr. Marsh and Mr. Meenan.

It is hoped to publish the text of the paper, which is not yet available, and a summary of the discussion in the next volume of the Proceedings of the Society.