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## Farming Structure in Britain [and Discussion]

Lord Walston and F. Sturrock

*Phil. Trans. R. Soc. Lond. B* 1973 **267**, 23-36

doi: 10.1098/rstb.1973.0058

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## Farming structure in Britain

BY LORD WALSTON

*Thriplow, Cambridge*

The decisive factors determining farming structure are, in the long run, economic, but social factors are increasingly involved. In the medium term, political considerations are however of greater importance. The significance of these considerations for the 1980s will be discussed.

The typical holding in Britain is likely to grow in size, though no great growth of big farming business is anticipated. There will be a development in small-scale factory farming, possibly in association with large vertically integrated businesses. The continual demand for cheap food will operate against less intensive and less specialized production.

The post-war trend towards owner-occupancy will be reversed, and the new landlords will increasingly be institutions acquiring agricultural land as part of a large portfolio. New arrangements between private landlords and tenants will be instituted which will mean a move towards partnership, and tenant capital will be available from new sources such as institutional landlords, cooperative credit arrangements and the Agricultural Mortgage Corporation. There will be an expansion in agricultural cooperation both for buying and selling, and for the use of machinery, where private contractors will also play a larger part.

Finally, much greater contact between urban and rural workers must be envisaged, with villages no longer inhabited mainly by farmers and farm workers. Protection of the environment for the enjoyment of all and ready access to the countryside will become increasingly the duty of the farmer.

For the purpose of this paper the structure of farming will be looked at under three separate subheadings – physical, economic and social. But before turning to these, a few words of general introduction are needed.

Projections into the future are normally based on known or ascertainable facts compiled from the past and present, future trends being modified in the light of expected changes in the environment. In some spheres these expected changes can be assessed with a considerable degree of accuracy, especially if they are brought about by non-human causes. In agriculture, future changes are caused, in the main, by human actions: in a period as short as from 1973 to 1989 economic laws have relatively little influence. These human actions themselves operate within very wide parameters which have little to do with the technical aspects of farming. What is more, the actions of people who are not farmers are likely to be of greater significance than are those of the farmers themselves. The most important human actions which will affect the structure of British farming in the 1980s are those of politicians: and the politicians are not only those of the United Kingdom. The actions of politicians in the U.S.S.R. and China can have a marked effect on British agriculture, as we have seen recently in the remarkable rise of wheat and other cereal prices on the world market, due to heavy purchases by those countries. Even more important can be the pressures exerted by governments of countries of the Third World. To take but one example, if pressures from the cane-sugar-producing countries intensified, we might well grow less sugar beet at home: conversely, if we felt less inclined to listen to the needs of our former colonies, the area of sugar beet in this country could double. Closer to home, the decisions, of the politicians of the European Community will undoubtedly have a profound effect upon British agriculture: and their decisions, no less than the decisions of our own politicians, will reflect the pressures to which they are subjected from their own constituents.

Only a small, diminishing number of these are farmers. These pressures rarely coincide with those of economic forces.

The structure of agriculture in the 1980s will be determined by the reaction of farmers to a combination of all these pressures, as well as economic and technical factors: and it can by no means be taken for granted that farmers will inevitably react as 'rational', or 'economic' human beings. Inertia, laziness, prejudice, competitiveness, desire for security, fear, love of adventure, preference for non-material over material benefits, and a host of other motives play their part. Only when all these, and many other pressures and reactions have been taken into account, and each is given its due importance, can a forecast lay claim to any degree of accuracy. I must admit that such an exercise is beyond my powers. All I can do is put forward my own prognostications.

TABLE 1. SIZE OF AGRICULTURAL HOLDINGS IN THE U.K.

	2 to 6 ha (5 to 15 acres)	6 to 20 ha (15 to 50 acres)	20 to 40 ha (50 to 100 acres)	40 to 60 ha (100 to 150 acres)	60 to 120 ha (150 to 300 acres)	above 120 ha (300 acres)
1950	111 163	134 971	82 961	39 933	41 540	15 265
1960	97 608	117 725	73 205	35 773	39 797	16 621
1970†	34 355	44 083	45 212	24 810	29 498	10 526
1970†		200 to 399 ha (500 to 999 acres)		5222		
		400 ha (1000 acres) and over		1276		

† Figures refer to England and Wales. Source: Agricultural Census.

On the purely physical side, the typical holding will increase in size, though it does not follow from this that the average size of farms will increase also (table 1). This is to some extent a question of how statistics are collected, and also to some extent a social matter. Is, for instance, the 2 ha (5 acre) paddock of the stockbroker living in the home counties where he keeps a pony for his daughter, or a cow for the house, or even where his gardener grows some vegetables, an agricultural holding? Is the 0.4 ha (1 acre) of the lorry driver, keeping half a dozen sows in a highly professional manner, growing onions and strawberries for a comfortable profit, or having glass-houses from which he regularly sends cut-flowers to Covent Garden, to be considered a farm? Such holdings may well increase in numbers in the years ahead, and the effect of that would be to lower the average size of farms. But what may be called a typical farm, ranging from 30 ha (75 acres) to 160 ha (400 acres), depending on the region, will become larger because, unless specialized and intensive farming is practised (and more will be said of this later), the standard of living which the smaller farm will support will be inadequate for the farmer of the late eighties. Take, for instance, two examples; first the 20 ha (50-acre) grass farm of the Midlands. Still today are found farmers who, with the help of a son or an old man, are milking 15 to 20 cows, fattening a few bullocks which they buy in market in the spring, and keeping six or eight sows. Their hedges are untrimmed, the drainage is neglected, they make second quality hay, pay a low rent (or none at all, if they own their land), spend nothing on repairs to farmhouses or buildings, but live in a manner which is far better than when they started farming in the thirties. Secondly, the 60 ha (150-acre) arable farm in the Eastern Counties. Again the old farmer is helped by no one but his son. He grows mainly corn, with a small acreage of sugar beet or potatoes. He has given up all livestock, his land is losing fertility and wild oats are everywhere. But again, his standard of living is higher than it used to be, so he is content.

When these old farmers retire or die their sons will not be satisfied with the standard of living of their fathers. They may leave the farm and take a job, at a higher wage than the pocket money they have been receiving from their fathers, at a nearby factory or garage. In this case, the farm will probably be bought by a neighbouring farmer, to add to his existing area, the farmhouse being sold off to a town dweller or retired person. If they remain as farmers they will seek means of improving their standard of living. This they can most easily achieve by enlarging their holding. In the case of the grassland farm the aim will be to increase to 40 or even 60 ha (100 or 150 acres), to milk at least 50 cows, and to rear all the calves to slaughter weight, giving a total livestock number of 120. The arable farmer will hope to reach an area of at least 100 ha (250 acres), and preferably 120 ha (300 acres). Both farms will, in the first instance, be worked single-handed, with a relief milker from time to time for the former and contractors for the latter. But eventually one or more sons will come in to help their father. If more than one son, the area will have to be increased still further, or some specialist activity embarked upon to give profitable employment to the second son. If it is impossible to add to his existing holding the farmer will seek a farm of adequate size, preferably as tenant, in some other district. The original farm will then become available for amalgamation with that of a neighbour. In either case the holding will become larger.

At the opposite end of the scale there will be no great increase in size, nor in the number, of farms of more than 800 ha (2000 acres). Economy of scale is not significant beyond this limit, and problems both of management and of provision of capital become more difficult to resolve. There is a further factor which plays an inhibiting role in the size of farms, as opposed to businesses. Most businessmen are motivated largely by profit. If the acquisition of a further factory, or a chain of shops or restaurants, shows a satisfactory return on capital, he will borrow the money and enlarge his business. In this way he becomes both richer and more powerful. But, although farmers want to make a profit, that is not their over-riding motive. There are few farmers, large or small, who would not have a larger income if they were to give up farming. The capital they get from the sale of equipment – and of the land, if they are owner occupiers – would be invested and bring in a substantial income. They themselves would become salaried workers, at whatever level might be appropriate to their abilities, working 5 days a week with at least 3 weeks holiday a year. They do not do this, because they enjoy farming as an occupation; and because of the fringe benefits they get from farming – at the lowest levels a car and a house: shooting, horses, gardener at the higher levels. For these reasons they are prepared to work long hours, go without normal holidays, and receive a low rate of interest on their capital. Beyond 800 ha (2000 acres) or so these fringe benefits apply to a diminishing extent: and when one reaches the scale of big farming businesses with boards of directors, accountants, and managers, the deciding factor is the return on capital rather than well-mown lawns or a good pheasant shoot. In this realm farming cannot compete with most businesses.

When talking about the size of farms, turnover and capital invested are far more important than mere area. There are highly intensive livestock and horticultural enterprises employing hundreds of thousands of pounds of capital and scores of skilled men, but covering less than 40 ha (100 acres), while there are farms of ten times that size, operating with two men and a relatively modest capital. Having entered that caveat I would expect in the years ahead to see a decline in the number of farms employing two or three paid workers, an increase in those employing 10 to 20 men; and an increase also in the family farm, run by the farmer and his one or two sons, helped out increasingly by contractors. These family farms could well, in an arable



area, reach 400 ha (1000 acres), and in a livestock and grassland area consist of a dairy herd of 150 to 200 milking cows, or 500 beef cattle.

This leads us on to the question of factory farming and vertical integration. Both these are now becoming dirty expressions, and there is a growing feeling among urban intellectuals and would-be intellectuals that food is only healthy and tasty if it is produced in 'natural' conditions – whatever that may mean – by sturdy yeomen, entirely independent of big business in any form. It is, I suppose, possible, that an egg produced by a chicken that scratches for its food in the farmyard has a more attractive taste than that which is produced in a battery. But by the time it has eventually reached the consumer, been kept in the fridge for a week, and eaten fried with bacon, I doubt if many people can tell the difference. And I am quite certain that most people prefer their milk to be produced in a clean milking shed, to be properly cooled, pasteurized, bottled and delivered (through the good offices of big business) than to have it from a cow milked in a muddy field or dirty lean-to, put into an unsterilized can, and collected by the consumer. What is more, few of those who cry out so vehemently against factory farming are prepared to pay the higher prices that are inevitable under a less intensive system. Factory farming has come about because of the insistence by the consumer on cheap food. So long as that continues factory farming will, and should continue: for, after all, it is the job of the farmer, in so far as it is within his power, to give the consumer what he wants.

This does not mean that factory farming should be given free rein to inflict suffering upon the animals kept in this way. There must be some control. But it must be remembered that so long as we insist on eating animals and animal products we must be prepared to subject the animal to an unnatural way of life (it is natural for a cow to eat grass and produce enough milk to feed her calf; not to be fed concentrated feedingstuffs, have her calf removed at birth, and be milked twice or thrice daily to provide milk for human mouths): and eventually to kill animals, when they have reached the desired stage of succulence, for our own delectation.

So there will be an increase in factory farming, though mainly on a relatively small scale, of the sort that is practised on the family farm by a specialist member of the family. In this way the young men coming into agriculture will be given the chance of exercising a special skill, of increasing the turnover on a restricted area, and of raising their own standard of living. This they will find hard to do unless they have a close tie-up with those who provide their needs, or who buy the finished product. Even a small intensive unit of pigs or poultry will consume several hundred tons of feedingstuffs a year. It is good business to contract ahead for most of these needs; and this in itself may lead to a form of integration between the supplier of food and the farm. Even more important is the marketing. If a thousand pounds worth or more of eggs or broilers or baconers are ready for sale every week the farmer is running a heavy risk if he has no contract with a buyer: and if that buyer be the eventual retailer or processor his chances of a good return are all the better. This too is a form of vertical integration. Provided the farmer is a reasonably good businessman, and provided that the other partners are reasonably honest, and interested in a continuing outlet for their feedingstuffs, or a continuing supply of the finished product, there are advantages for all three partners.

We now move from the physical aspects of structure to the economic. Traditionally British agriculture has been based on the landlord–tenant system. In the old days there were no advisory services, governmental and university research institutes, literate, and technically trained, farmers, and information spread by press, radio and television. The good landlord of those days (and by no means all were good) served a valuable purpose by experimenting on his

home farm with new methods, new buildings, and new breeds of livestock, and passing the knowledge thus gained on to his tenants. He also served the purpose of providing the main capital needs of farming – the land and the buildings. The tenant provided no more than horses, cattle and other livestock; a few simple implements; labour, which came largely from his family, and seed, which he usually retained from the previous harvest. In the mid-nineteenth century the landlord's capital might well amount to £50 or £60/ha (£20 or £25/acre), while the tenant's would be less than £12 (£5). By the second quarter of the twentieth century the value of land had scarcely risen, and in some cases had declined. On the other hand, the tenant now needed more than double his former capital to pay for increased mechanization, fertilizers and bought feedingstuffs. The landlord had therefore ceased to be the main provider of capital: his place had been taken by the banks and by credit from agricultural merchants. As the initiator of new methods, and as the centre of progress he had been superseded by governmental and commercial advisers, and by county farm institutions.

TABLE 2. NUMBER AND SIZE OF HOLDINGS RENTED OR OWNED, ENGLAND AND WALES

	area owner-occupied		area rented		area rented as percentage of total
	10 <sup>3</sup> ha	10 <sup>3</sup> acres	10 <sup>3</sup> ha	10 <sup>3</sup> acres	
1950 ( <i>a</i> )	4375	10810	7120	17604	62.0
1960 ( <i>b</i> )	5680	14032	5870	14500	50.9
1960 ( <i>c</i> )	5630	13929	5848	14443	50.9
1969 ( <i>d</i> )	5935	14686	5150	12716	46.4

(*a*) Area of crops and grass and rough-grazing.

(*b*) Total area of holdings, including crops, grass and rough grazing, and also woodlands, farm roads, land under buildings, waste ground, etc., forming part of agricultural holdings. This line includes 17751 statistically insignificant holdings.

(*c*) Some 34000 holdings with under 4 ha (10 acres) of crops and grass and a negligible agricultural output were included in the 1960 returns but not in the 1969 figures. This line estimates the position in 1960 had these holdings been excluded in that year.

(*d*) Crops, grass and rough grazing, woodlands and other land on agricultural holdings, excluding commercial and amenity woodland, private gardens and waste land.

Source: Agricultural Census.

After 1918, and to a greater extent after 1945, the landlord's position had deteriorated, while that of the farmer had improved. The landlord faced higher costs for repairs, and greater demands for new buildings. But his rents were controlled, and his tenant was given increasing security of tenure, leading eventually to what is virtually a tenancy for life. The tenant, on the other hand, had more money at his disposal than ever before. As a result a growing number of farmers bought the land and became owner occupiers. This trend continued until the present time, so that by 1969 only 46 % of the agricultural land in England and Wales was rented, compared with 62 % in 1950 (table 2). In the years ahead this trend will be reversed. Several factors will bring this about. In the first place, as farms get larger the amount of money the owner-occupier has to find gets larger too, even at constant prices. In the second place, prices are far from constant. In the past 12 months the price of land has risen by 200 to 300 % and although it is unlikely that this rate of increase will continue, it is certain that prices will go on rising. The farmer, therefore, who wishes to buy an extra 40 ha (100 acres) may today have to find £100000 in place of the £30000 of a year ago. While the Agricultural Mortgage Corporation is there to help him their rates of interest are now about 10 %: even if the farmer need borrow only half of the capital needed for buying his 40 ha he will still have to pay interest

at the rate of about £120/ha (£50/acre), which he will find impossible. I know that the roll-over concession for capital gain tax on agricultural land gives some incentive to a limited number of farmers to buy more land. But I do not expect this to continue for long in its present form, so the encouragement from this source for owner occupancy will be strictly limited. In the third place, the farmer's resources are already strained by the great increase in the amount needed for tenant capital. I must not trespass on the scope of a later paper, so all I shall do here is to point out that whereas in the 1950s tenant capital requirements were of the order of £75 to £100/ha (£30 to £40/acre), they are now between £175 and £250 (£70 and £100) on farms of average intensity.

Farmers will therefore become more reluctant buyers of land in the years ahead, and, because of death duties or the fear of death duties, more eager sellers. Here it should be pointed out that the recent rise in land prices is of great disservice to the owner-occupier. Take, for example, the 200 ha (500 acre) owner-occupier. A year ago his land was worth say £500/ha (£200/acre), or £100 000. With the 45% estate duty remission allowed on agricultural land the duty payable at his death, assuming no other assets besides his tenant capital of, say £35 000 would be about £37 000. Today his land is worth at least £1500/ha (£600/acre), or £300 000. Death duties would amount to £120 000: yet the land is no more productive than it was a year ago.

Complementary to this incentive to sell is the eagerness of the big investor to buy. The private owners of great wealth have always wanted to have a proportion of their money in land. It provides amenities, it brings with it social standing, and, above all, it has tax advantages. Now, in addition to such investors, the big City institutions, insurance companies, investment funds and the like, are anxious to have a proportion of their portfolio in land. Given the size of these funds, running into thousands of millions, only a modest 5% in land means that many hundreds of millions are available. These investors are not primarily interested in income. They are concerned with the retention of the real value of their investment in the face of inflation. A return of 1% or even less does not deter them. As a result, even if they pay £2500/ha (£1000/acre), they are still prepared to let at £30 or £37/ha (£12 or £15/acre). What is more, they have ample capital available for any worthwhile improvements; and they are in a sufficiently big way of business to enable them to have the services of first-class estate agents.

All these factors will work together to bring about a significant change in the pattern of land ownership during the rest of this decade and the eighties. It may well be that by then two-thirds of the land will be farmed by tenants, and only one-third by owner-occupiers.

Not only the pattern will change. There will also be changes in the financial relationship between landlord and tenant. It will become less of a rigid relationship between one side who owns the land, who is responsible for the proper maintenance of buildings and the provision of new ones, and who collects a fixed rent: and, on the other, a man who, provided he pays his rent punctually and does not grossly neglect the land, is left free to farm as he likes, making what profit he can, and retaining it all for himself. Instead, it will become more of a partnership, the tenant sharing to a small extent in the security of the relatively fixed income of the landlord: the landlord sharing to a small extent in the risks of the higher average return on capital of the tenant: and both of them sharing in the problem of raising fresh capital. This last factor is of especial importance because of the greatly increased need for tenant capital which has already been mentioned, and also because of the need for more specialized and modern buildings on the farms of the future. Tables 3 and 4 show that in the short space of three years, between 1969 and 1971 total assets, excluding land and buildings (in other words tenant

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capital) on over 200 farms of an average size of 80 ha (200 acres), rose by over £1600, or £20/ha (£8/acre); and nearly half of this was met by increased borrowings.

The situation is similar in many respects to that of industry in the middle of the nineteenth century. Most businesses were then privately owned. As they grew in size, and as the need for expensive machinery increased, so fresh capital, in addition to that saved out of profits (something which today's taxation makes very difficult on the normal farm), was needed. This need

TABLE 3. ASSETS OF 210 TENANT FARMERS 1970/71

	Average size of farm 80 ha (198 acres) (£ per farm)				
	change				
	1970	1971	1970/71	1969/70	1969/71
fixed assets					
machinery and equipment	3168	3263	95	19	114
breeding and livestock	3204	3426	222	190	412
total fixed assets	6372	6689	317	209	526
current assets					
trading livestock	1772	1945	173	172	345
crops	1525	1630	105	145	250
consumable stores	514	596	82	110	192
debtors	840	913	73	142	215
cash at bank and in hand	633	761	128	-47	81
total current assets	5284	5845	561	522	1083
total assets	11656	12534	878	731	1609

TABLE 4. LOANS OF 210 TENANT FARMERS 1970/71

	Average size of farm 80 ha (198 acres) (£ per farm)				
	change				
	1970	1971	1970/71	1969/70	1969/71
long/medium-term loans					
insurance cos.	3	3	—	—	—
bank loans	299	311	12	42	54
loans from relatives	509	543	34	25	59
other loans	179	193	14	84	98
total long/medium term loans	990	1050	60	151	211
short-term loans					
hire purchase	62	62	—	-31	-31
creditors	1311	1543	232	177	409
bank overdraft	1023	1042	19	122	141
other	49	51	2	8	10
total short-term loans	2445	2698	253	276	529
total loans	3435	3748	313	427	740

Source: Farm Management Survey, Farm Liabilities and Assets, England and Wales 1970/71, MAFF.

was met by the formation of the public company, the fresh capital being subscribed in large and small amounts by outside investors. Partly because of the relatively low returns on farming capital, and partly because of the fringe benefits already mentioned, which cannot be passed on to shareholders; and largely because of the temperament of the farmer, this solution is of limited value to farming. But much thought is now being given to this problem, and by the end of the eighties others besides the farmer will have a significant share in the equity of the farm. There will be many more partnerships between landlord and tenant on the basis already described: where the landlord is a rich individual, or where he is an institution, this will



immediately make available more capital for the complete enterprise, including tenant needs. Even where the landlord is a man of modest means the fact that there is the security of the land in addition to that of the stock and machinery, will facilitate the acquisition of capital from outside sources. Already the A.M.C. has brought out proposals to help in this problem: and others are at work on schemes to enable the outside investor to put relatively small amounts of money into mixed ventures of land ownership and farming.

To sum up, during the next 17 years we shall see a reversal of the present trend towards owner-occupancy. But there will not be a reversion to the old form of landlord-tenant relationship. Instead there will be increasing partnership between farmers and landowners: landowners will be increasingly big city institutions, and investment trusts with many small investors. The rigid distinction between landlord and tenant capital will become blurred.

While this is going on there will be growth in agricultural cooperation. Many efforts have been made in the past to foster cooperation among farmers, but it has never met with the success its supporters have hoped for. This has been due in the main to two factors. In the first place the farmer is pre-eminently an individualist. If he were not, the chances are that he would never be a farmer. He demands more than the freedom to grow what he wants when he wants, where he wants and how he wants. He demands the freedom to shop round for his requirements from a number of would-be suppliers, or from his favourite merchant with whom he has dealt for years: and to sell in a similar fashion. The excitement of the market gives savour to his life. In the second place, the typical farming community in Britain, and especially in England, consists of people with a wide range of social and educational backgrounds. At one end of the scale is the man who went to the village school, was brought up among farm workers, cultivates a few rented hectares, and milks a few cows: at the other is the large landowner, farming his own land, college educated, imbued with the most up-to-date business techniques. It is hard for these two extremes to cooperate on a basis of mutual trust. Furthermore, whether large or small, shrewd or simple, in most areas they have a choice of merchants with whom to deal, and a choice of banks from whom to borrow.

All this is in marked contrast to most countries of continental Europe, where the cooperative movement has gained a strong foothold. The continental farmer is just as much of an individualist, and even today spends more of his time at the local market than does his British counterpart. But his is a more homogeneous group: some are larger than others, but the extremes of wealth and background are far less than in Britain, and although there are mutual antipathies and mistrusts, they are the antipathies and mistrusts of individuals and not of social groups. Yet more important, the rural banking system and agricultural merchants developed far later in continental Europe than in Britain and even today lag behind our own. This has given the cooperative banks, cooperative grain stores, cooperative feedingstuff and fertilizer suppliers, cooperative creameries and the rest, a chance to develop without having to face the competition of well-established rivals.

Today the scene in Britain is changing. Cooperation has now for many years proved itself in the shape of the Milk Marketing Board: farmers recognize the advantages of not having to make individual bargains with creameries and milk distributors. At the same time the small local merchant is being steadily absorbed into the big national companies: there is not the same freedom to strike a bargain, nor the same personal relationship. Only fifteen years ago the corn exchanges of East Anglia were the gathering place of merchants and farmers, the latter bringing their bags of samples of wheat and barley and going from one merchant to another to get the

best price. Today corn exchanges are deserted, and an increasing number of farmers are forming cooperative groups to sell their corn in big lots, with an expert to follow the trends of the market on their behalf: these same groups can buy fertilizers, feedingstuffs and even machinery at lower prices than can the individual farmer. Besides this, social differences are fading. An increasing number of farmers have had some technical training, all of them read the same journals, watch the same t.v. programmes, and are visited by the same experts. Increasingly their children go to the same schools and have the same opportunity of higher education. All these factors are working together to encourage more cooperation: and they are further helped by our entry into the European Economic Community, which is making British farmers more aware of what happens across the Channel, and more open to the ideas that come from there.

Side by side with the growth of cooperatives there will be a growth of agricultural contractors. This will be brought about by the development of big specialist machines which can do a given job better and cheaper than can a smaller machine, but which are uneconomical on all but the largest farms. There are some machines, of course, which the farmer will always wish to own, so that he can do the job at what he considers the perfect time, rather than having to wait for the contractor, or the cooperative-owned machine, to arrive. But there are many jobs, even today, where contractors are being increasingly used. By the end of the eighties, few farms with less than 40 ha (100 acres) of arable land will own their own plough, almost all dung-spreading will be performed under contract, only farmers growing 200 ha (500 acres) or more of sugar beet, or 40 ha (100 acres) or more of potatoes will have their own harvesting equipment; and the greater part of straw baling and carting will be done cooperatively or by contract, as will spraying and fertilizer spreading. This will bring with it three main advantages. In the first place it will cut down on the capital requirements of the farmer: instead of spending £1000 or more on a machine that he uses for only a week in the year, he will be able to hire for a hundred pounds a machine that does the same work quicker and more effectively. He will spend no time or money on maintenance. He will be able to run his farm with less labour or, if his is a small family farm with only father and son, there will be more time to spare for looking after livestock, for visiting demonstrations and good farms in the neighbourhood – or even for taking a holiday. Finally, the contracting services will give opportunities for farmers' sons and others who wish to live and work in the country to find a job with more interest, better pay, and better prospects of promotion than would be open to them if they became farm workers, or remained at home to help on their father's farm.

Possibly associated with these contracting services, possibly run quite independently, there will be a substantial increase in relief labour. Few farmers in the future will be content to work 10 h a day, 7 days a week, 52 weeks a year. They – and their wives – will demand holidays. But the typical family farm, especially if it is based on stock, as most of them are and will be, cannot operate if one of its two, or even three, men is away for any length of time. Even larger farms are finding it increasingly expensive to keep a labour force sufficiently large to allow the present statutory holidays to be taken: and by the end of the eighties these holidays will be of at least four weeks a year. A pool of skilled workers, herdsmen, pigmen, tractor drivers, would meet these needs of the farmer, and would once again give good opportunities to those who do not want to spend all their lives on one farm.

Now we turn to the social structure of farming, which is inextricably bound up with the social structure of the rural areas. Already the days are past when most of those who lived in a village either worked on the land, or were closely associated with it. By the end of the eighties many

of our villages will be almost entirely divorced from farming. Earlier retirement and more leisure will mean that more townspeople will have houses in the country. Better communications with the big cities, coupled with the growing unattractiveness of town life, will make it possible for factory and office workers from the towns to live many kilometres from their place of work and travel there daily. The problems of congestion and the time wasted getting in and out of the large centres will encourage offices and factories to move to smaller market towns or even large villages. It may well be that people living in even remote rural areas will, by 1980, have to spend no more than 30 min. travelling to find a wide range of work in offices and factories. This will mean that the school-leavers who today are tempted, or even forced, to leave their villages to find a job will have a variety of jobs within reasonable distance of their homes from which to choose. It will also mean that a large number of people who would like to have their homes in the country, and especially to bring up their children in the country, will be able to do so. So most villages will grow in size.

Meanwhile the number of people engaged directly in agriculture will diminish. The loss of people from the land will be far slower than it has been in the past, and by 1990 there will probably still be nearly 3% of the working population engaged in agriculture. But the village which in 1950 had 300 inhabitants, with 25% of those of working age on the farms of the parish, and in 1970 had 500 inhabitants, with 10% of the workers on the land, will, by 1990, have 750 or even 1000 inhabitants, with farming accounting for less than 5% of employment. Some of these newcomers will live in old farm workers' cottages, expensively modernized: others on housing estates in, or on the outskirts, of the village; and still others in houses built on the site of former farm buildings. With the changing pattern of farming these will become derelict and the new buildings put up to take their place will be sited in positions which are both more suitable from the farmer's point of view and less disturbing to the people living in the village, who will not be prepared, as their predecessors were, to put up with smells of dung or silage, or the sound of tractors starting up early in the morning.

Social life in the village will not be centred on the pub, since many of its patrons will come by car from far afield, and most of the people of the village will similarly go in their own cars to other places for their relaxation. The landowner, the large farmer, the doctor, the parson, and the retired major will not be the leaders of the community. Some of them will still play a part but there will be many others to share this work with them – managers of factories and banks, technical college or university teachers, stockbrokers, lawyers, supervisors, shop stewards, and a whole range of retired people. Few of the farm workers will live in tied cottages. Some will own their own houses, and others will live in council houses, alongside factory workers. Taking into consideration the financial advantage they have in not having to make expensive journeys to work, their pay and their hours will be similar to those of other workers – otherwise, with alternative jobs readily available, and without the restraint of a tied cottage, few would stay on the land. Table 5 shows the decline that has already taken place in the agricultural labour force: and figure 1 the less appreciated but more serious growth in the number of farm workers past middle age. Most of them will still be drawn from families that have worked on the land for generations, but some will be newcomers from the towns. They will mix freely and on an equal footing with the town-worker, with no feeling of inferiority.

Conservation and preservation of the environment will have more attention paid to it, and more money spent on it, than is the case today. They will no longer be the concern primarily of a few comfortably placed people who, although perhaps now living in the country have spent

TABLE 5. MALES EMPLOYED IN AGRICULTURE IN GREAT BRITAIN (WHOLE OR PART-TIME)

occupation	year	total aged 15 and over
farmers, farm managers and market gardeners	1951	353 300
	1966	257 830
agricultural workers and agricultural machinery drivers	1951	541 000
	1966	291 170
totals	1951	894 300
	1966	549 000

*Definitions 1951.* Farmers, farm managers and market-gardeners includes nurserymen, seedsmen, flower-growers and their foremen. Agricultural workers and agricultural machinery drivers includes shepherds and other agricultural workers, agricultural machine tractor-proprietors, foremen, drivers, attendants. Source: Ag. Sample Census 1951.

*Definitions 1966.* Farmers, farm managers and market gardeners includes persons managing (either on their own behalf or for an employer) farmers or market gardens, including fruit farms, livery and riding stables; growing flowers; keeping bees and poultry; breeding animals etc. Agricultural workers and agricultural machinery drivers includes persons tending crops or animals (including zoos, circuses etc.) persons owning, driving or operating specifically agricultural machinery including agricultural tractors, Agricultural Contractors' Managers excluded. Source: Ag. Sample Census 1966.

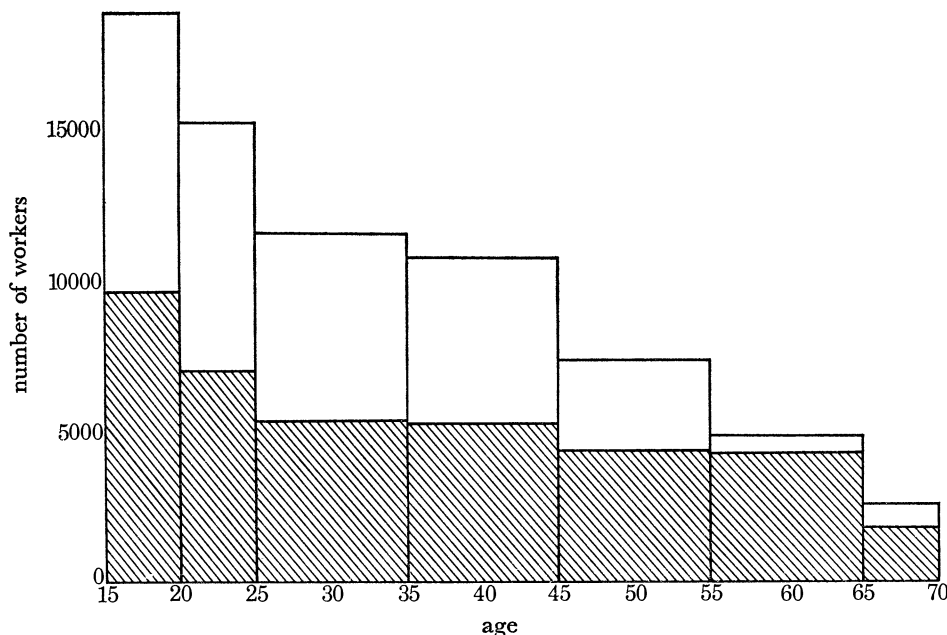


FIGURE 1. Number of agricultural workers and agricultural machinery drivers in Great Britain (whole and part time) □, 1951; ▨, 1966. Source: Registrar-General's sample census 1951 and 1966.

most of their lives in towns, and do not understand the problems of the countryside. People will realize that the retention of hedges round 2 ha (5-acre) fields adds enormously to the costs of production, and that a countryside with few hedges, such as the Downs of Sussex or of Wiltshire, can be just as beautiful as are the small fields of Devon and Somerset. They will realize that well-planted trees can do more than anything else to enrich the countryside, and that such trees can, with a small amount of thought, be of help to modern farming by removing from cultivation awkward angles and thin strips of fields which cost much to plough and sow and harvest. But they will also realize that to trim a hedge and plant a tree costs money, and



that the removal of dead trees is a burden that the farmer, with scarce labour and wages on a par with factory workers, cannot undertake on his own. They will come to accept that a part at least of the cost of this sort of work must be borne by the public. For his part the farmer will accept that the mere fact that he is entitled to cultivate an area of land does not give him the absolute right to enjoy the amenities of that land on his own, and to forbid others to do so. Access to land will be freer, and farmers will be encouraged to set aside picnic spots and camping sites for those who wish to find quietness on their afternoon or weekend off. The townsman will cease to be regarded as a nuisance, someone who damages crops, leaves gates open, spreads litter around, with his cigarette ends sets fire to hay stacks, and with his dog chases ewes and cows. By 1990 education, coupled with the greater intermingling in everyday life of those who work on the land and those who work elsewhere, and above all because most of the inhabitants of a village will not be engaged in farming, will have led to mutual understanding and respect.

This may be too idyllic a picture, coloured by too much wishful thinking. But even if it is, rural life by the end of the eighties will not be comprised solely or mainly of farmers, farm-workers, and those whose businesses are connected with farming. It will be shared by many, and the influence that both groups will have on each other will have a profound and beneficial effect on the structure of the village, and hence on farming.

Finally, let me make a forecast of what my own farm will look like at the end of the eighties, even though it is today far from typical, and will not be typical at that date either. Today it extends to about 1000 ha (2500 acres), all of which are ploughable. Its main crops are wheat and barley for seed, sugar beet, and lucerne, originally grown for drying, but now used mainly for feeding the farm's livestock in summer and winter, with the surplus being sold as hay. There is a milking herd of 175 cows, with their followers, totalling about 300 head: and a beef herd of about 70 animals. The total labour force, excluding management, is 17, of whom 9 live in estate houses; and the average age is 48. By 1990 I expect the size of the farm to have increased by about 80 ha (200 acres), from the death or retirement of the remaining tenants on the estate. Seed wheat and barley will still be the principal crops, but the lucerne area will have been reduced, and much of it may be dehydrated by a mobile drier operated by a single man. There may be a relatively small area of herbage seed, and a sizeable area of grain maize. Once the seed breeders have produced a variety that will ripen by the end of October in five seasons out of six, this will be a very valuable crop. It is sown when all other spring crops are in the ground, it needs no subsequent cultivations, and it is harvested when all the corn harvest is out of the way. It is completely mechanized, and with it can be used herbicides which destroy the weeds that are not affected by the herbicides which can be used with cereals. It is an admirable animal feed, and the rising standard of living throughout the world means that the demand for meat, and hence for animal feed, will continue to rise. Apart from this innovation the cropping will not change greatly. The dairy herd will remain approximately the same size, only enough pure bred Jersey heifers being born each year to provide replacements. The rest of the cows will be served, as at present, but in larger numbers, by Charolais bulls, reinforced by Charolais semen, and the calves retained until they are ready for slaughter. The cross-bred beef breeding herd will be enlarged, so that in all there will be 400 to 500 head of beef cattle of all ages on the farm. These will not be kept all together in one large beef lot, even though this would be the most economical from the point of view of labour. They will be kept in three centres on the farm, to minimize the labour of disposal of dung and slurry, and also to facilitate the carting of hay, straw and silage. Perhaps the farm will be considered old-

fashioned by some at that time (as it is by a few today), but straw will still be conserved and dung still spread.

The labour force will be smaller. Four people will look after all the livestock, with help at holiday time or sickness, from the arable side. There will be six arable workers, all qualified machinery drivers, capable of doing running repairs to their machines. The foreman will also have mechanical training and be able to take over any machine if necessary. There will be no farm mechanic. Any repairs that cannot be done by the operator or the foreman will need specialist tools and spare parts, and can better be carried out by someone who is continually on that sort of job. Nor will there be a farm lorry. The lorries of that date will be 20 tonners or more, specially designed for the particular load they carry and a vehicle of that sort would not have sufficient work on the farm to warrant its cost. All haulage will be done by contractors. Fertilizer will be spread by contract, much of it being in liquid form: and spraying will also be carried out by contract, some from the air, some by tractor, and some by hovercraft. Apart from the cereals for seed, which will be grown on contract, most sales will be carried out through a cooperative group, and the existing grain store will be enlarged to provide storage for grain grown on a further 1200/1600 ha (3000/4000 acres) farmed by others. The sugar beet will be harvested, loaded, and transported in a similar cooperative manner, dung will be spread by the same means, and hay and straw will be similarly carted, by expensive specialist machinery, though the baling will be done by the farm's own baler. There will be a shorthand typist in the office, who will also deal with the telephone, and keep simple books, as well as dealing with wages, which will be paid monthly by cheque. The accountant of the cooperative group will prepare more detailed accounts and costings whenever they are needed. The management of the enterprise will be in the hands of one man (I hope my son), who will have sufficient time to spare to be active in the cooperative group, and also to travel, at home and overseas, to look at new methods and get new ideas. He will be helped by the arable foreman and by the head herdsman, who between them will be able to take charge when he is away. These two men will live in houses belonging to the farm, and of the remaining eight men no more than four will have farm cottages. The rest of them will be lived in by pensioners, or will have been sold to newcomers to the village. The rent will only have risen by 10 to 15 % at constant prices, while wages will have risen by 40 %, this increase being roughly equivalent to the decrease in the number of workers. Prices for all products other than meat will show a decline, at constant prices, but technical improvements, especially by plant and animal breeders, and by the manufacturers of herbicides, as well as the use through the cooperative of bigger machines, will enable profits to be maintained at approximately present levels.

This, as I see it, is what the structure of farming in general, and of my farm in particular, will be like at the end of the 1980s.

#### *Discussion*

F. STURROCK (*Department of Land Economy, 16a Silver Street, Cambridge*). May I congratulate Lord Walston on his excellent paper with most of which I agree.

I am glad that he still finds a place for family farms in the 1980s. They will be larger than in the past and also fewer. They seem to be losing some of their traditional standbys such as pigs and poultry to the big boys. In the past 5 years alone, poultry flocks of less than 5000 have gone down from 60 to 32 % of the national total. Sows in herds of less than 50 have gone down from 70 to 50 %. Some sophisticated family farmers could carry large flocks and herds but most of them lack the capital and know-how. What is now left to the family farmer?

Fruit and vegetables? Yes if he has the right soil and markets. Dairy cows? Yes, but with herds of over 60 cows. A family that does not mind long hours has an advantage over paid labour. Arable farms? Yes, but with 80 ha (200 acres) or more.

Lord Walston doubts whether farms of over 800 ha (2000 acres) have any special economic advantage. I agree. Indeed, we have found very little evidence of economies of scale even between 200 and 800 ha (500 and 2000 acres), and above that level, overheads for supervision tend to increase.

The motives of the planners in Russia who have created monster farms of 8000 ha (20000 acres) or more are undoubtedly political, rather than economic. It is far easier to police and ensure deliveries of feed from 10000 giant state farms than from 10 million peasants. After the 1917 revolution, a class of prosperous farmers – the Kulaks – was beginning to emerge and they had to be liquidated to prevent them showing up the weaknesses of the collective farms. We do have some very large farms in this country but this is less due to technical economies of scale than to the personality of the farmer in charge – it is his managerial ability that is spread over more area.

Lord Walston refers to the huge increase in land values. One cause he did not mention was the flow of money from the purchase of agricultural land for building and development. If the owner selling land wishes to avoid Capital Gains Tax, he must ‘roll over’ and reinvest the proceeds in land elsewhere. According to Ian Reid, £1000M a year is looking for reinvestment in land and this is driving prices up. This sum is nearly twice as much as the insurance companies and other institutions are investing in land.

This increase in land values is thus a quirk of taxation and is having harmful effects. As Lord Walston says, higher land values mean higher death duties and (unless the farmer gives his land to his son in time) could lead to the break up of large farms. Another effect is that the capital required to buy and stock a farm is so large that it is very difficult to enable an outsider to get into farming – unless he is lucky enough to inherit land. This means inbreeding and a lack of fresh blood which is not good for an industry.

Lord Walston’s suggestion of closer business relations between landlord and tenant is interesting. In the United States the landlord usually supplies not only land but parts of the working capital. This allows men without much capital to become tenant farmers. On the other hand, if insurance companies and institutions become the principal landlords in this country, will they want to take any share in farm management? Probably not, but they may be quite willing to spend money on modernizing farms if this enhanced the capital value.

There can be little doubt that substantial changes will be necessary to adapt farms to the conditions of the 1980s and to entry into the E.E.C. Reorganizing a farm is a complex operation involving both technical and economic considerations. Indeed the farmer must be sure that his share is feasible because with limited capital he may not get a second chance. It seems unfortunate that the former Minister of Agriculture chose in 1970 to discourage the advisory services from giving help to farmers on management problems. The National Agricultural Advisory Service (as it was) had built up expertise in this field and was well ahead of its rivals in Europe. To stop this development was a retrograde step and has certainly lowered the morale of the more enterprising young men in the service. If the intention was to leave the field clear for private consultants, they have not filled the gap. Indeed, they often depended on the N.A.A.S. for their economic criteria. With a new minister and director, the time has come to reverse this ruling.