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WITHDRAWN

AGRICULTURAL ADJUSTMENT UNIT · UNIVERSITY OF NEWCASTLE UPON TYNE

A Discussion of Current Policies and the Future Structure of Agriculture

An Agricultural Adjustment Unit Symposium

8

THE AGRICULTURAL ADJUSTMENT UNIT

THE UNIVERSITY OF NEWCASTLE UPON TYNE

In recent years the forces of change have been reshaping the whole economy and, in the process, the economic framework of our society has been subject to pressures from which the agricultural sector of the economy is not insulated. The rate of technical advance and innovation in agriculture has increased, generating inescapable economic forces. The organisation of production and marketing, as well as the social structure, come inevitably under stress.

In February 1966 the Agricultural Adjustment Unit was established within the Department of Agricultural Economics at the University of Newcastle upon Tyne. This was facilitated by a grant from the W. K. Kellogg Foundation at Battle Creek, Michigan, U.S.A. The purpose of the Unit is to collect and disseminate information concerning the changing role of agriculture in the British and Irish economies, in the belief that a better understanding of the problems and processes of change can lead to a smoother, less painful and more efficient adaptation to new conditions.

Publications

To achieve its major aim of disseminating information the Unit will be publishing a series of pamphlets, bulletins and books covering various aspects of agricultural adjustment. These publications will arise in a number of ways. They may report on special studies carried out by individuals; they may be the result of joint studies; they may be the reproduction of papers prepared in a particular context, but thought to be of more general interest.

The Unit would welcome comments on its publications and suggestions for future work. The Unit would also welcome approaches from other organisations and groups interested in the subject of agricultural adjustment. All such enquiries should be addressed to the Director of the Unit.

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A DISCUSSION OF CURRENT POLICIES AND THE FUTURE STRUCTURE OF AGRICULTURE

A SYMPOSIUM

Bulletin No. 8

AGRICULTURAL ADJUSTMENT UNIT
UNIVERSITY OF NEWCASTLE UPON TYNE

1969

PREFACE

In July 1969 the Agricultural Adjustment Unit invited one hundred and twenty young people, mostly between the ages of eighteen and twenty-five, to spend three days at the University of Newcastle to speculate about what agriculture might look like in the 1980's. The participants were drawn from a cross-section of interests, farmers, farm-workers, those in the ancillary industries, advisory officers, teachers and students; the geographical coverage included the whole of the United Kingdom and the Republic of Ireland.

From the Unit's point of view the Conference proved a most worthwhile endeavour. It proved impossible to accept all those who would have liked to attend. Those who attended generated a lively series of discussions lasting the whole period of the Conference. Also encouraging was the amount of support afforded to this Conference by a number of organisations and the Unit acknowledges with gratitude contributions from the following:

Agricultural Development Association.
Agricultural, Horticultural and Forestry Training Board.
Imperial Chemical Industries Ltd.
Massey-Ferguson Manufacturing Company.
Milk Marketing Board.
National Farmers Union.
National Union of Agricultural and Allied Workers.
Newcastle Chronicle & Journal Ltd.
RHM Agricultural Industries Ltd.
Shellstar Ltd.
T. Wall & Sons (Meat and Handy Foods) Ltd.
Tyne Tees Television Ltd.

To give structure to the discussion a series of formal papers were delivered by authoritative specialists. A selection of six of these comprise this symposium. No attempt was made to reach any conclusions at the Conference itself and the papers are presented here without further comment in the hope that they may stimulate thinking and debate generally on the topic of agricultural policies and trends.

A DISCUSSION OF CURRENT POLICIES AND THE FUTURE STRUCTURE OF AGRICULTURE

CONTENTS

I. THE PLACE OF AGRICULTURE IN THE NATIONAL ECONOMY

by H. T. Williams

Professor of Agricultural Economics, Aberystwyth

Terms such as agriculture and 'national economy' are very freely used but quite often in a vague and ill-defined way. Since, however, it is the purpose of this chapter specifically to discuss the relationship of one to the other, it is necessary to accord to each term some degree of precision. A concept of agriculture and of the national economy which is capable of measurement and analysis in quantitative terms must be adopted.

Let us deal first with the larger entity—the national economy. This consists of a complex of activities engaged in by individuals, and commercial and public organisations to produce the vast array of goods and services required by the community. In the course of its activities the complex makes use of raw materials and other resources which it imports from other countries. If a value is placed on the goods and services which are produced and the cost of the imports is deducted, a measure is obtained of the wealth generated within the country. This measure is described as the Gross Domestic Product. It provides a measure of the size of the national economy and since most people prefer more rather than less of most things, the larger the Gross Domestic Product for any given population the richer and higher is the standard of living assumed to be. It is for this reason that economic growth, meaning an increase in Gross Domestic Product is always a prime objective of the economic policies of most governments.

Within the national economy the complex of activities can be classified, either according to the product or the kind of activity, into separate industries and sectors —manufacturing, distribution, agriculture, service industries and so on. By applying the same procedure to each individual sector as that applied in calculating the total Gross Domestic Product, the wealth generated in each sector and the contribution made to the total can be measured. Thus agriculture's contribution to the national economy would consist of the value of its output less the value of those goods and services used up in the course of production, which are obtained from outside the agricultural industry whether from domestic industries or abroad. Items to be deducted would include imported feed and store livestock, fertilizers, fuel oil and so on.

Figures of the industry by industry contribution to the Gross Domestic Product provide a picture of the structure of the economy. They enable comparisons to be made of the economies of different countries, and within countries, of the relative economic efficiency of separate industries.

So much for the national economy and the means whereby it can be described and quantified. The other term which requires some definition is agriculture. Initially, at least, we can accept the official concept of the agricultural industry which includes the activities engaged in by farm and estate workers, farmers and landowners. Workers, farmers and landowners are often described as the three partners in the industry, and in discussing agriculture's place in the economy it is with their joint efforts in contributing to the national welfare that we shall be largely concerned.

The relative importance of agriculture in a national economy depends to a high degree on the state of economic development of a country. As a general rule the more highly developed a country, the smaller the proportion of its total wealth which is generated in agriculture and the greater the wealth generated by its manufacturing and service industries—especially the latter, which includes distribution, education and public services. The table below shows the situation in 1966 in a selection of countries representing different stages of national development.

TABLE 1

INDUSTRIAL ORIGINS OF GROSS DOMESTIC PRODUCT
AT CURRENT FACTOR COST—1966

	Agri-culture	Total Industrial Activity	Construc-tion	Trans-port	Retail & Wholesale Trade	Other	Total
Canada	7	33	6	9	13	32	100
U.S.	3	33	5	6	16	37	100
India	49	16	4	4	11	16	100
France	7	38	9	5	14	27	100
W. Germany	4	44	8	6	13	25	100
Ireland	20	33	—	18		29	100
U.K.	3	40	7	9	11	30	100
Pakistan	49	11	4	6	12	18	100

Source: Yearbook of National Accounts Statistics, U.N., 1967.

In the United Kingdom the agricultural industry contributed 3 per cent of the Gross Domestic Product as against 40 per cent from manufacturing and 57 per cent from all other industries. In this respect the situation of agriculture in the United Kingdom compares with that of the U.S.A., but contrasts sharply with that of Ireland where agriculture contributed 20 per cent of the Gross Domestic Product, and even more sharply with such truly less developed countries as India and Pakistan where it contributed 49 per cent.

The structure of an economy, except in the most backward and primitive of countries, is never static. The differences observed between countries in different stages of development at the present time are indicative of the changes which have occurred in the economies of most countries over a period of time. Agriculture is not necessarily a smaller component of the economy of a highly developed country than it is of a less developed country in absolute terms, but as each national economy grows, agriculture's relative importance tends to decline. In the United Kingdom, for example, agriculture accounted for 4·9 per cent of the Gross Domestic Product in 1947, 3·9 per cent in 1957 and 2·9 per cent in 1967, and assuming that we continue to achieve some degree of economic growth this trend will continue.

To say that the proportion of the Gross Domestic Product contributed by agriculture is declining is not to say that its physical contribution to the well-being of the community is diminishing, nor even that it is static. Gross Domestic Product is a monetary measure and it reflects changes in the money value we accord to the products of different industries at different times, as well as changes in the physical volume of output. What has happened, in fact, in the United Kingdom during the last two decades is that the value placed on agricultural output has declined relative to the value placed on goods and services produced by the remainder of the economy. The physical output of agriculture is estimated to have increased by 66 per cent between 1948 and 1967, an increase which is almost identical with the increase in the physical volume of output of the economy in general. Whereas, however, the value placed on agriculture's contribution has increased by only 75 per cent, the value placed on the output of the economy in general has increased by 240 per cent. In so far, therefore, as agriculture's contribution to the national economy has declined relative to other industries it is accounted for in the United Kingdom by changes in relative prices rather than changes in the relative volume of material goods.

TABLE 2

A COMPARISON BETWEEN CHANGES IN THE GROSS DOMESTIC PRODUCT OF AGRICULTURE AND THE NATIONAL ECONOMY

Index of Gross Domestic Product at	*1948*	*1958*	*1967*
(*a*) *Constant Prices*			
Agriculture	100	125	166
Total U.K.	100	125	166
(*b*) *Current Prices*			
Agriculture	100	138	175
Total U.K.	100	200	340

Source: Derived from Annual Abstracts of Statistics.

At this point, it should be pointed out that, although obviously there is a relationship between changes in the value placed upon the output of an industry and the earnings of the individuals engaged in it, the relationship is not a direct one since the numbers of persons concerned will vary. Thus, whereas the volume of employment in agriculture has decreased over the last two decades by roughly one-third, in the economy in general it has increased by nearly one-eighth. If we translate Gross Domestic Product into money incomes per head in agriculture they have increased by about 150 to 160 per cent and in the economy in general by about 205 per cent.* Although the drift from the land has been substantial, it has not in the face of the lower relative value placed on the output of agriculture been sufficient to maintain the 1948 parity of incomes within the community in general.

The relative decline in the monetary value of agriculture's contribution to the Gross Domestic Product—which is in effect a failure of the aggregate income of the industry to keep pace with the aggregate income of the community at large—is not unexpected. Setting aside for the moment intervention by the Government, the size of an individual industry and its contribution to the economy would be determined by growth and intensity of demand for its products. The product of agriculture in the United Kingdom consists almost exclusively of food and the growth of demand for food is influenced by two things: first, the nature of the demand for food and secondly, the rate of population growth.

The nature of the demand for food is influenced by the fact that the capacity of people to consume is limited and, except at very low levels of income, expenditure on food does not increase proportionately with increases in incomes. After satisfying basic food needs the tendency is to spend the larger part of any increases in income on perhaps higher quality food, or more highly processed foods, but

* In arriving at these estimates, G.N.P. and the gross product of agriculture have been taken to represent the total sums available for distribution among the total working population and the agricultural working population respectively. Gross National Product and the working population have been expressed as indices with 1948=100 and from these the index of Gross Domestic Product or total money incomes per head have been calculated. Since accurate statistics of the agricultural working population are not available, the index has been based on an assumed reduction of 2 per cent per annum throughout the period. The basis of this assumption is a statement by Dr. K. Dexter in a paper on Productivity in Agriculture contained in the volume: *Economic Change and Agriculture* edited by Ashton and Rogers.

The relevant indices are as follows:

	1948	*1958*	*1967*
Gross National Product at Current Prices			
(*a*) Agriculture	100	138	175
(*b*) Total	100	200	340
Index of Working Population			
(*a*) Agriculture	100	80	68
(*b*) Total	100	106	112
Index of Gross Product per Head			
(*a*) Agriculture	100	172	255
(*b*) Total	100	190	305

even more especially on the ever increasing variety of non-food items which are considered necessary in order to achieve higher standards of living.

Figures are available to illustrate the point. The National Food Survey estimates that at the present time the income elasticity of expenditure on food is of the order of 0·2 per cent—in plain terms this simply means that for every 10 per cent increase in real incomes in the U.K. the demand for food increases only by 2 per cent—and the evidence is that this proportion tends to decline year by year. Moreover the income elasticity of expenditure is calculated at the retail stage and food at the retail stage incorporates, of course, many elements which it did not possess when it left the farm. Perhaps as much as a half of the increased demand can be attributed to an increased demand for services performed by the processor and distributor rather than to an increase in the volume of food as it leaves the farm. For this reason, in a free and growing economy, a larger and larger proportion of income is spent on non-food items, and that agriculture's place, as measured by its relative contribution to Gross Domestic Product, declines.

The effect of population growth is obvious—the more people, the more total food that is consumed.

In the United Kingdom the position is that the growth in the demand for food due to the combined effect of population growth and the increase in real incomes has been of the order of 1 to 1½ per cent per annum. The increase in agricultural output, on the other hand, has been at the rate of about 3 per cent per annum. This is a situation in which it is almost inevitable that the prices of agricultural products and the incomes of those engaged in agriculture should lag behind those of the remainder of the community.

The situation in which British agriculture now finds itself is not, of course, the result of the free play of economic forces. The Government has intervened in a massive way and its intervention has been mainly in the form of supporting agricultural prices above the levels of a free market and in the provision of grants and subsidies to stimulate or to increase the efficiency of agricultural production. By maintaining agricultural incomes at levels higher than they would otherwise have been and thereby causing productive resources to be retained in agriculture rather than to be transferred to other more lucrative activities the Government has inevitably influenced the size of the agricultural industry and its place in the economy. Without Government intervention on the scale that has been practised in the last decades, the relative position of Agriculture would have declined more rapidly than it has and the size of the industry, in both physical and monetary terms, would be smaller than it is now.

The Government's motives in intervening in the affairs of agriculture, instead of leaving matters entirely to market forces, are varied and the emphasis on one motive or the other has changed from time to time. It is probably true to say that an important reason for intervention has been a desire to stabilise and improve

prices and incomes in an industry which has found it difficult to equate supply to demand and for that reason has been notoriously subject to fluctuating prices and to incomes which tend to lag behind those of the rest of the community. To the extent that this has been the case, increasing or maintaining the size of the industry was not itself an object of policy but was simply an incidental and inevitable result, and not always a welcome result—as was indicated by the limitation of guarantees to standard quantities of many important products during the 50's and early 60's. In difficult times for the economy in general, however—as in the present period of economic stringency and balance of payment difficulties—the income supporting role of government tends to be overshadowed by its task of promoting a 'selective' expansion in production to save imports, but it would be wrong to lose sight of it. The present economic difficulties of the country differ only in degree from those which have affected the country at other times during the last twenty years and there have been other periods, notably in the decade after the war when agricultural expansion was sought and achieved. The experience of that period suggests that expansion is easier to stimulate than to control and that its very momentum tends to carry it beyond the levels which are desired. The effect of periods of expansion, therefore, is to bring the income-supporting role of governments into prominence while at the same time making it a more difficult role to play. The evidence for this is to be found in the restriction of government guarantees to standard quantities for many of the important products of agriculture in the latter part of the 1950's and the early 1960's. Indeed it could be said that agricultural expansion in the past has been achieved too easily in the sense that it has been achieved at levels of prices which have not ensured an increase in the aggregate income of the industry commensurate with its physical output.

It is not possible to deal with the place of agriculture in the economy without some references to food imports. For a very long time the dominant inclination of British governments has been, for the sake of cheap food, to allow comparatively free entry of foods from abroad. In recent times we have imported annually some £1,000 million worth of foods grown in temperate climates which could have been produced at home. This is equivalent to one-third of our consumption of foods of this kind. This food is available on the British market at prices lower than are considered reasonable and profitable for British producers—hence the need for price support for domestic production. This may be explained in some instances by greater economic efficiency of agricultural production, usually with more favourable natural conditions, or it may, in other instances, be due to subsidisation of producers in the exporting countries. Subsidised imports represent unfair competition in the eyes of British farmers, but, to a predominantly industrial country, food which is cheap for any reason has an obvious attraction. Providing this cheaper food remains in reasonably constant supply and providing we can earn the foreign exchange to pay for it, then it can be argued that the country's material

welfare is increased by buying it rather than using scarce resources to produce it at home. There is no evidence at this stage that overseas supplies are likely to diminish or that they will become dearer relative to industrial goods. In fact, substantial surpluses of some important products—especially cereals and dairy products—are accumulating and, since effective means of making these available to the hungry of the world have not been devised, they remain available to be bought. What is much more doubtful than the continuity of imported supplies, however, is our ability to pay for them. In this country, in the post-war period, we have not been particularly successful in creating the conditions in which a sufficient volume of manufactured goods is available for export at prices which overseas traders are prepared to pay. In the light of the poor performance of the economy in the export field it is difficult to argue, as some do, that there is at the present time a case for transfer of resources out of agriculture into industry. For the time being, at least, this author tends to agree that every unit of food produced at home tends, with reasonable certainty, to replace a unit which would otherwise be imported, whereas it is only a possibility that additional resources devoted to producing manufactures for export at the expense of agriculture would contribute to foreign exchange earnings. Although this may be the situation at present it is nevertheless true to say that, in the long run, the effect of imports on the place of agriculture in the British economy will depend more, if anything, on developments in manufacturing industry than developments within the agricultural industry itself. The greater the success of our exporting industries, the greater the pressure to contract agriculture and vice versa.

Up to this point the emphasis has been heavily on factors which influence the size of the agricultural industry relative to the total national economy. The significance of the industry to the economy is not, however, wholly dependent upon its size: the other important and changing factor is its economic structure. A great deal has been said, from time to time, about the advance of agricultural technology—by which has been meant the increasing sophistication of the methods and practices of agricultural production. The hall-marks of this increasing sophistication have been a decrease in the volume of employment, an increasing degree of mechanisation and a wider use of a vast range of products derived from the non-agricultural sector of the economy, such as fuel and oil, fertilizers, insecticides and so on. A direct consequence of developments of this kind is a decrease in the industry's economic self-sufficiency. In 1948, 65 per cent of the total costs of agricultural production consisted of the remuneration of those who made up the industry in the form of wages for farm workers, profits for farmers and rent and interest for those who provided the land and capital; only 35 per cent of costs were in respect of resources derived from outside the industry, whether domestically produced or imported. By 1963, 60 per cent of the value of the inputs of agriculture consisted of non-agricultural and imported goods and only 40 per cent of the inputs originated

within the industry itself. There is no reason to doubt the statement made recently by an agricultural economist that rather more than half the labour content of British agricultural products is now performed in the factories and other establishments which provide it with its requisites, rather than on the farm.

The significance of the change in the economic structure of agriculture thus brought about is that it is now to a higher degree integrated in the economy and that agriculture and industry have become increasingly interdependent. Changes in the economic and financial conditions of agriculture are now likely to have wider and more complex consequential effects in other sectors of the economy than in the past. In this sense, the place of agriculture in the scheme of things has become more rather than less important, and the process is likely to continue for some time.

Should the Concept of the Agricultural Industry be Expanded?

Some of the features of agricultural development at the present time cause one to wonder whether the definition of the industry which is customarily employed and which has been used in this chapter now needs to be expanded. One of the features has already been noted: that is the greater use made of the products of agricultural production in other industries. Apart from the direct consequence of the greater integration of agriculture with industry this development has also initiated some organisational changes which affect the structure of the industry, and which will become more rather than less important as time goes on. Suppliers of agricultural requisites are in a highly competitive situation and some of them—especially the manufacturers of feedingstuffs—have developed forms of business organisation which involve them in the process of agricultural production. Thus in pig production, for example, schemes are being developed where farmers are tied by strong contractual links to the suppliers of feed, who not only supply the feed but also organise the supply of improved breeding stock and advance capital. The more intensive the methods of livestock production become, the greater will be the scope for arrangements of this kind. The greater the degree of integration, the less appropriate it will be to include in agriculture simply those who tend the stock and the more essential it will be to include all others concerned with the production of feed, the provision of capital and the organisation of supplies in the manufacturing and distribution industries. Farmers themselves are reacting to the commercial pressures upon them resulting from greater reliance on industrial products. To the extent that off-the-farm products form an increasing component of their cost structures, the price they pay for them becomes of greater significance. They are therefore resorting more freely to methods of trading which strengthen their position as buyers and this is reflected in the increased turnover and membership of co-operative societies and the establishment of new forms of co-operation such as buying groups. In this sense farmers are extending the boundaries of the industry to include functions previously performed by others.

Strong as the pressures are on the agricultural industry in the procurement of requisites, they are probably even stronger in relation to the disposal of farm products. There are factors inherent in farming, such as the seasonality of production, the small size of the production unit in relation to the market, the difficulties of quality control, which tend to make farmers weak sellers. In addition, while the demand for food cannot be described as buoyant, services associated with the preparation and presentation of food products are increasingly required. Consequently the farmers' share of the consumer's pound is almost certainly declining. Estimates of this tendency are not available for the United Kingdom but in the U.S.A., whereas in 1947 American farmers received about 50 cents of every dollar spent on food by the consumer, by 1967 this had dropped to about 38 cents. Inevitably, farmers have sought ways in which they can maintain their position and again the answer has been largely through various forms of co-operation which take them into the field of distribution. Developments of this kind have been numerous and successful in horticultural marketing, but examples are also found in the marketing of fatstock. Developments such as the pig weaner and calf groups—which have made great headway in Wales—represent attempts to obtain for the farmer some part of the remuneration previously absorbed by those engaged in distribution. The division between production and marketing therefore is becoming indistinct and again a revision of our concept of the agricultural industry may need to be extended to include parts of distribution and processing.

Although this chapter outlines and, it is hoped, explains the decline in the relative position of agriculture in the national economy, nothing provides grounds for pessimism on the part of those now entering the industry. The absolute contribution in terms of the volume of production has increased, and although there has been a slowing down of expansion in the last two or three years, this is likely to have been due to temporary causes. The increasing sophistication of the industry and the possibilities of expanding its functions through co-operative means present a challenge to anyone with sufficient flexibility of thought and enterprise to enter new but closely associated fields of activity.

II. SOME ECONOMIC INFLUENCES ON AGRICULTURAL POLICY*

by K. DEXTER

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Although the 1980's may seem very distant they are in fact only a little over a decade away, so we can expect little fundamental change in food production and consumption over such a comparatively short period. Wheat will still be grown in fields which have grown wheat for a thousand years or more, and cows will still be milked every day, although the techniques of production and the organisation of agriculture may well change substantially. The historical trends of agricultural production and food consumption which are evolving provide the context within which current agricultural policy operates and to which it must accommodate itself in the years ahead. For no agricultural policy—or national economic policy for that matter—can halt the tide of history. It can dam up developments temporarily; it can deflect the direction of development; it can mitigate the effects in particular areas or on particular people. But, in the end, it must accept and adapt itself to the inexorable tide of developments. A clear understanding of these long-term developments helps to appreciate the purpose and objectives of current policies and what further progress (or, at least, change) might take place.

A particular characteristic of agriculture is the large number of small producers supplying a market for food which is relatively stable. In general, demand for food does not respond much to changes in price, so that a relatively small increase in supply may lead to a substantial fall in price. Such increase in supply may be the result of seasonal weather conditions; but there is also considerable pressure on the individual farmer to increase production by adopting new technological developments. These processes (e.g. improved cereal varieties and higher yielding strains of livestock) lead to increasing productivity. This causes output to rise more swiftly than demand and therefore prices tend to fall more than proportionately to the increases in supply, so that farmers' gross income tends to decline. The individual farmer is then under pressure to adopt further new techniques in order to increase his output, reduce his costs and increase his productivity and profits. But further increases in output reduce prices again. Thus the farming industry fails to benefit from the technological advances and the main beneficiaries are consumers obtaining their food requirements at progressively lower farm-gate prices. Some form of state intervention in agriculture becomes necessary to protect producers from the

* The comments and interpretations in this chapter are the responsibility of the author and do not purport to represent any official view of the Ministry of Agriculture, Fisheries and Food.

full effects of their collective achievements.* Without such support the industry increases the volume and efficiency of production too rapidly to be absorbed in the open market at prices which are realistic to the producer.

In addition to this long-term pressure tending to reduce agricultural product prices, there are substantial short-term fluctuations in prices. Weather conditions affect crop yields from year to year, and some types of livestock production (e.g. pigs) are particularly prone to cyclical fluctuations. These variations in supply which come on to the market where there is a relatively inelastic demand lead to marked price movements. To protect individual producers and the agricultural industry as a whole from the full impact of these price fluctuations, various forms of market management have been introduced in many countries.

The high rate of technological change in an industry of small units where the level of production cannot be controlled leads to a fluctuating income, with a declining trend both in absolute terms and relatively to incomes in other sectors of the economy. This leads to widespread pressure for income support. The means by which farm incomes are supported vary widely—by type and degree—from country to country, depending upon the particular economic circumstances of agriculture. But it is significant that many countries, importing and exporting countries alike, at varying stages of economic development, operate schemes of income support in agriculture. Whilst the various systems commonly have, as a primary objective, the maintenance of agricultural incomes at levels higher than would be achieved under free market conditions, the means of implementing the support frequently introduces other policy objectives—for instance, the encouragement of particular lines of production or new production techniques. The encouragement of new production techniques improves the rate of increase of agricultural productivity and enables the individual country to maintain or improve its competitive position relative to other countries.

The only long-term solution to the low income problem in agriculture is to divert resources—particularly labour, but also land in certain circumstances—from agriculture to other sectors of the economy. Technological developments result in fewer people being needed for food production and to obtain the full benefit of new technology, those remaining in agriculture need to operate larger farm businesses. Conditions have to be created, therefore, whereby the mobility of resources from agriculture can be improved and people moved more rapidly to other sectors whilst, at the same time, those remaining in agriculture have the necessary capital resources for investment and sufficient confidence in the future to invest in new

* The American agricultural economist Willard Cochrane expressed the situation in the following terms: 'The average farmer is on a treadmill with respect to technical advance. In the quest for increased return, or the minimisation of losses, which he hopes to achieve through the adoption of some new technology, he runs faster and faster on the treadmill. But by running faster he does not reach the goal of increased returns; the treadmill simply turns over faster. And as the treadmill speeds up, it grinds out more and more farm products for consumers.' Farm Prices, University of Minnesota 1957.

technology for the further enlargement of their farm businesses. The battery of support schemes developed in countries with highly developed agricultural sectors to relieve this apparent dichotomy of aims, demonstrates that the market mechanism of itself is judged inadequate for this purpose.

In principle, and in the long-term, the self-balancing mechanism within the market economy should ensure an equilibrium position of agricultural prices which both encourages new technical developments and the migration of labour resources. But there are major disadvantages in waiting passively in this way. Even in the long-term, fluctuations in prices and incomes from year to year would not be eliminated. The time period needed for the equilibrium position to become established may be too long and the economic pressures too great to be socially and politically acceptable. But above all, such a process can of itself inhibit the pace of technological development. Either new technology which could be introduced is delayed because market prices and prospective profits are too low to encourage the necessary investment, or the introduction of successive waves of innovation continually postpones the day when an equilibrium is reached which equates supply and demand at a price which effectively regulates the outflow of labour and the inflow of capital and innovation.

The pressures for state intervention in agriculture are largely social and political in origin. The intervention itself (usually involving transfer payments between other sectors of the community and farmers) is generally regarded as both a form of social payment and a means of directing production along lines deemed to be in the national interest. But this interference with the open market allocation of resources is commonly considered to result in a less economic use of national resources than would be achieved by the free flow of market forces. This may not be so, however. The level and stability of income provided by state intervention may lead to a rate of innovation and development faster than would be achieved in the open market. State protection to agriculture is comparable to the industrial action taken by the large modern corporation to protect its production and marketing developments from undesirable market fluctuations. J. K. Galbraith has summarised the position lucidly:

> 'Even modern agriculture, although it is outside the industrial system, cannot accommodate itself effectively to radical price changes and all countries with highly developed agriculture have moved toward planning in this industry to the extent of establishing systems of price control. This has been the direct result of advancing technology and increasingly heavy capital requirements. As a consequence (and most notably in the United States) of price security and associated ability to plan, there has been much increased investment by farmers in new capital and technology. The further result has been gains in productivity in recent years that have been considerably greater in agriculture than in industry.

However, farmers being numerous, there is no chance for the non-governmental regulation of prices that characterises the industrial system. It has had to be done by the government. And so deep is the commitment to the illusion of control of the enterprise by the market that this price regulation—which cannot be concealed—is still not wholly accepted by economists including those who otherwise applaud agricultural efficiency. The fixed prices, by distorting resource use, are thought to be a source of inefficiency. It is not observed that the same fixed prices make possible the advanced technology and higher capital inputs which greatly enhance productivity."*

Just as there are many, and sometimes conflicting, economic problems in agriculture, so there are several objectives in designing policies to resolve the problems or at least mitigate their impact. These main objectives may, for convenience, be grouped into four categories: improvements in structure and organisation, production objectives, social policies and efficiency goals for resource use.

Changes in the structure of agriculture are taking place rapidly. The number of farm workers is declining by some 20,000 to 30,000 a year. The number of farmers is declining by some 2,000 to 3,000 a year. The number of large-scale farm businesses is increasing whilst the number of small-scale businesses is declining. But agriculture is still predominantly an industry of small units making a relatively small contribution to output and too small to provide high incomes to the occupiers. Of the 400,000 or so agricultural holdings in the United Kingdom about one-half provide less than a full-time livelihood to the occupier—and contribute less than 10 per cent of agricultural production. At the other end of the scale, the largest 10 per cent of the holdings contribute about 50 per cent of total production. The structural problem would be eased considerably if a larger proportion of farm businesses were to develop into fully commercial units capable of providing an adequate net income at a lower level of support cost.

Production objectives are an integral part of agricultural policy. There may be specific objectives, either for the industry as a whole or for the main commodities; alternatively, production may be allowed to develop solely according to market forces. These objectives may change gradually as the economic environment changes. A main aim of government support to agriculture may be to boost output to save imports and help the balance of payments. Were the country to move towards self-sufficiency for more products, or were balance of payments considerations less important the need for specific production objectives for individual commodities might be reduced.

Some parts of the United Kingdom—particularly the hills and more remote areas—have distinct climatic and geographical disadvantages in production. The scope for introducing new technology is sometimes limited; and there is less

* The New Industrial State. Hamish Hamilton. 1967. Pages 190–191.

flexibility in switching production in response to economic pressures, by comparison with more favourable areas. So the provision of adequate incomes for farmers in these areas would be an understandable objective. A longer term objective towards the hills could be to develop direct means of improving the social conditions there instead of helping indirectly through differential price supports.

Consistent with the above objectives it is also desirable to use the support deemed to be necessary for the industry to improve as rapidly as possible the efficiency of production. This might be done by providing higher or more stable incomes—which encourage investment in new technological developments. Some of the risks and fluctuations in farm incomes can be transferred from the farmer to the government to strengthen farmers' confidence to invest in long-term improvements.

Having set the stage by reviewing some of the economic problems underlying agriculture the current support system in this country can now be discussed in general terms and examined in the context of the policy objectives already mentioned.

The Agriculture Act 1967 provides for schemes for the payment of grants and the provision of government loans to encourage the voluntary amalgamation of uncommercial agricultural units with other land so as to form or enlarge commercial units. Half the approved expenditure on remodelling works and incidental costs may be paid to those carrying out an approved amalgamation; there are also grants by way of lump sums and annuities to those relinquishing occupation of an uncommercial unit for these and other approved transactions.

These schemes help to improve the structure of agriculture at the lower end of the scale by amalgamating farm businesses. There remains the need to improve the organisation and increase the investment of long-term capital in the larger farm business in order to take advantage of new technological developments. Hence, there is the Farm Improvement Scheme, under which grants are available towards the cost of the provision or improvement of approved permanent buildings and fixed equipment, and towards the cost of making long-term improvements to land. There are also grant-aided schemes for field drainage and for the provision of water supplies for farm buildings, fields and spray irrigation. Additional grants are available for the improvement of land in recognised hill areas which is suitable for livestock rearing purposes. And investment incentives are also provided to encourage further investment in farm buildings, plant and machinery. These grants to improve the structure of agriculture and the organisation of farms total some £30m. a year—about 11 to 12 per cent of the total government support to agriculture. Grants are also available to promote and develop agricultural co-operation, and for research and development in the marketing of agricultural and horticultural produce.

The government provides a wide range of price guarantees and production grants as the primary means of achieving its production objectives for agriculture. A system of deficiency payments is used to implement many of the price guarantees. The detailed arrangements for some of the deficiency payments are extremely complicated but, in principle, the system is quite simple and widely understood. When the average market price of one of the commodities concerned is lower than the guaranteed price, the government pays individual farmers the difference between the two prices on the amount sold during the relevant period. In this way, farmers are protected against the vagaries of the market and, if the guaranteed prices are sufficiently high to yield an acceptable level of profits, farmers can plan ahead and invest for further production. It is the government which accepts the risk and picks up the bill if prices fall disastrously. Not all price guarantees are implemented at government expense or by a system of deficiency payments. The guaranteed price for milk, for instance, is implemented by control of the retail price for liquid milk. The consumer, therefore, pays the full support cost for milk production (with such minor exceptions as school and welfare milk). Neither is there any Exchequer cost in implementing the guaranteed price for sugarbeet which is paid directly by the consumer.

There are minimum import prices for cereals to provide some protection against unduly low market prices which might otherwise develop; there are various forms of import restriction for other commodities such as pigmeat and dairy products, again to prevent market prices from falling to unduly low levels. Market prices of horticultural products in this country are supported by tariffs and quotas on imports. These various forms of price support can be used for commodities for which the country is not self-sufficient. But for some commodities for which the country is self-sufficient (or virtually so) more direct market intervention by means of support buying becomes necessary to prevent excess supplies from forcing market prices unduly low. Both potatoes and eggs have provided examples in recent years.

Progress is also made towards production objectives by providing various forms of production grants. The calf subsidy and the beef cow subsidy provide examples of direct grants to encourage the expansion of beef production both from the pure beef breeding herd and from suitable types of dairy breeds. Another example is the acreage payment for field beans, designed to encourage the development of break crops in order to allow a further expansion of the cereals acreage.

Altogether, these various forms of support for production objectives amounts to some £170m. to £180m. a year, or 60–65 per cent of the total cost of support. But many of the price support schemes meet other objectives as well as encouraging particular lines of production from domestic agriculture.

In particular, there is no hard and fast distinction between price supports which meet production objectives and the social considerations, which are of particular importance in hill and remote areas. Even in lowland areas, the various price

support schemes provide levels of income more socially acceptable, to the smaller farmer in particular, than would result from depending solely on the market. In hill areas, production grants and price supports (either direct on farm products or operating indirectly through fatstock to influence store stock prices) provide a major part of farm revenue. In some areas, the assistance can be as much as twice the typical net farm income. Of course these schemes—notably the hill cow, hill sheep and winter keep schemes—help to meet production objectives to expand livestock production in the hills, but they also help to meet social policy in providing more adequate incomes under particularly adverse farming conditions. They also make a contribution towards improving the structure and organisation of farms in these areas and they encourage greater efficiency in the farm business, by attracting new capital investment and new management techniques.

The relative contribution which these schemes make towards meeting the various policy objectives is largely a matter of judgement. This illustrates one of the main difficulties in practising the apparently simple 'management by objectives'. When there are several concurrent objectives and some support schemes meet, to a greater or lesser extent, a number of the objectives, then there is a tendency for both the objectives and the purpose of individual schemes to become blurred with the passage of time. For the individual firm (or farm) there is always the achievement of high profits (if not maximum profits) which remains as a clear objective, however much other activities may at times distract attention from this. When there is no single overriding and clear-cut objective it is easy to stray from the right path, or indeed, to argue at length which is the right path.

Some schemes have been introduced specifically to improve the business efficiency of farming. The Farm Business Recording Scheme, for instance, encourages improved record-keeping for management purposes. The Small Farm (Business Management) Scheme is based on three-year farm management programmes designed to improve standards of business management.

Subsidies are provided towards the cost of fertilizers and the cost of liming land for the improvement or maintenance of soil fertility. These have been available for many years, and were introduced to encourage the more widespread adoption of regular and adequate lime and fertilizer applications. This 'educational' objective of the subsidies has by now probably been largely achieved, whilst the subsidies have retained their income support function. As technology develops and farming practices change, so it becomes necessary to adapt the provision of support designed to increase the efficiency of resource use. In this way the ploughing grant, introduced to encourage the ploughing of old pastures and the system of ley farming, has lapsed as evidence accumulated on the efficiency of all-grass farming under certain circumstances. These schemes for directly improving the efficiency of production have been costing some £40m to £45m a year or about 15 per cent of the total cost of direct government support to agriculture.

Production grants provided to encourage the rapid spread of specific techniques have the disadvantages of becoming out-of-date. Moreover, it is administratively complicated to introduce new schemes in order to sponsor specific advances in technology; and it is not easy to spot new developments in time to promote them. Innovations are rapidly overtaken by further technological progress. By the time a desirable new development can be grant-aided by a specific scheme there may well be other developments more worthy of support. But these grants are not the only means by which the government encourages greater efficiency. Price supports provide both the incentives to invest in new capital-intensive technology and the wherewithal with which to finance it. Then there are the research and advisory activities financed by the government. Although such expenditure is not usually included in the cost of agricultural support, its contribution to the income and productivity of the industry must be substantial. It has been estimated that, in the United States, only one-fifth of the growth in national output comes from additional land, labour and 'conventional' reproduceable capital.* Four-fifths of growth has come from 'improvements in national efficiency'—improvements in the skill and effectiveness of labour and improved quality of inputs—representing advances in technology. Perhaps the best example of the rewards from new technology is provided by the development of hybrid maize which Schultz quotes as giving an annual return of 700 per cent in investment in research and development. It is, of course, debatable who are the main beneficiaries of such developments—it was suggested earlier that the economy at large rather than the agricultural sector is the main beneficiary in the long-term.

Agricultural marketing boards, and similar organisations, act as a further, although indirect, means of support. There are five marketing boards at present—for milk, hops, meat, potatoes and eggs—although the last will disappear in 1970. They were the means chosen by the government in the 1930's to help alleviate the severe depression in agriculture. The collective powers of producers in the form of marketing boards were expected to introduce a measure of control of market prices instead of individual producers being subject to the vagaries of the market. Farm incomes were to be improved through the centralisation of selling, standardisation of products, rationalisation of distributive channels and the provision of market intelligence. During and since the war state support has become more centrally formulated, but the marketing boards have continued in existence and become an integral part of the agricultural administrative machinery.

The extent to which the various forms of support are successful in meeting the policy objectives is debatable—but since the mid 1950's the output of the industry has risen by over 40 per cent—helped by the stability provided by the price guarantees and the growth of efficiency fostered by the production grants and advisory services. Capital investment has increased whilst the labour force has

* T. W. Schultz. Economic Growth and Agriculture. McGraw Hill. 1967. p. 206.

declined. Although the cost of support in money terms is much the same as it was a decade or so ago (about £300m.) its value in real terms is much lower. Prices received by farmers have increased by about 3 per cent whilst other prices have increased by 30 per cent to 40 per cent. The rapid improvements in efficiency, however, have enabled incomes to rise in agriculture though by rather less than incomes generally.

It seems reasonable, then, to claim that the various and complex forms of support have achieved some success. The questions remain, however, whether other forms of support might not achieve the same policy objectives more successfully or whether the objectives themselves are likely to change over time.

The economic, political and social environment of agriculture is more complex than is implied by this simplified exposition and policy considerations taken into account by government are also complex. There is, for instance, the question of food prices to the consumer which are reduced by the present methods of support, at a corresponding cost to the taxpayer. The policy of allowing unrestricted food imports at (virtually) world market prices has been adopted in this country since the repeal of the Corn Laws in the middle of the last century—in marked contrast to the established policy in many European countries where food prices have traditionally been kept at high levels to protect domestic producers.

The United Kingdom is involved in a whole range of international trade agreements, many of which affect domestic agriculture. Some of these arrangements—the Commonwealth Sugar Agreement is a good example—are limited to a single commodity. But there are others—e.g. G.A.T.T., E.F.T.A., A.I.F.T.A., which are general agreements having as a main objective facilitating the expansion of trade by the reduction of tariffs and other obstacles to trade. They operate, in practice, through general agreement whereby benefits obtained by a country for one group of products may be offset by less attractive measures imposed upon other products. Once accepted, these agreements have to be taken into account in any considerations of domestic policy which might affect them.

There is a tendency to equate agricultural policy simply with levels and methods of price and income supports. There are, however, many other responsibilities of government in food and agriculture, all of which have policy implications. These are described lucidly and in detail elsewhere.* They include such activities as the control of animal and plant diseases and pests. Foot and mouth disease provides an example of particular topical interest. Legislation controlling the relationship between landlord and tenant has been evolving over many hundreds of years. There are regulations governing the wages and conditions of employment of agricultural workers, and orders controlling the purity of seeds and the sale of fertilizers and animal feedingstuffs. Similarly, detailed regulations are necessary

* Sir John Winnifrith. The Ministry of Agriculture, Fisheries and Food. George Allen & Unwin Ltd. 1962.

to prevent fraud by adulterating food and drink. Meat supplies, whether imported or home-produced are inspected regularly; and slaughterhouses have to maintain high standards of hygiene under humane conditions. In recent years, the prices and incomes policy has led to more detailed examination of changes in food prices, since food accounts for about a quarter of total family expenditure. These various activities—and there are many others—are mentioned to put into perspective the price and agricultural income aspects of policy. Deep involvement in agricultural income support is a relative newcomer to the agricultural policy scene. It is in the limelight at present and tends to overshadow other aspects of policy. But, over time, income support may take its place as only one of the many activities in agricultural policy.

By projecting existing trends into the future one can foresee substantially larger farming units requiring substantial capital resources and a much smaller labour input than at present. Similarly, one can foresee the agricultural contribution to the economy, as a proportion of the whole, declining further as the labour force continues to move to other occupations, although the actual volume of agricultural production may continue to increase. The social and structural objectives of policy might well receive stronger emphasis as the country moves towards greater self-sufficiency, particularly within an E.E.C. context.

Further international agreements might be expected in an attempt to bring more stability into international trade in agricultural products. In the past two decades one has seen a good deal of progress in regulating and stabilising agricultural prices and incomes within individual countries. Some progress has been made towards stabilising incomes and prices in international trade in some products. But there has been less progress than with internal markets. These developments have been summarised by Sir Eric Roll*:— 'There will continue to be a great need for positive international action to minimise conflict and to maximise the cohesion of the one-world concept. Among these arrangements, commodity agreements, designed to even out short-term price fluctuations and to introduce some measure of international production planning, will play a vital part for basic commodities such as cereals and sugar. There is also urgent need for a greater degree of international co-operation in development programmes in less advanced countries to link food production and import policies, aid and technical assistance, and the commercial policies of the advanced countries into a more consistent whole.'

It is for others to develop the implications of current trends as they will affect the agriculture of the 1980's. Many of the existing problems will still be with us, but one can expect some change of emphasis in tackling them. What is certain is that we cannot solve the problems of the 80's in 1969. We must remember that though changes are taking place very rapidly, the fundamental problems of

* The World after Keynes. Pall Mall 1968.

agriculture develop and are resolved only slowly. We must accept that change is inevitable. We must try to foresee its direction, encouraging it where it is beneficial whilst tempering its ill winds. After all, this is and will remain a primary objective of agricultural policy.

III. INTERNATIONAL TRADE AND DEVELOPMENT*

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It is not coincidence that trade and development have been linked in this chapter. One of the major world problems is that of helping the lesser-developed countries to speed up their economic development, i.e., to help raise their income levels and so enable their peoples to attain standards of living more in line with those of the economically advanced countries. Such speeding-up depends to a major degree on the ability of the less-developed countries to obtain those imported goods which are necessary for their development and which, at least in the early stages, they cannot produce for themselves. These imports they must obtain through gifts, loans or trade. Hence the importance of trade.

Three factors have been particularly important in the rapid growth of world trade over the past century; (*a*) industrial development—which provided the goods to satisfy varying wants in different countries, and at the same time, by providing employment and raising incomes, enabled people to buy goods, (*b*) modern transport, including refrigeration, (*c*) colonisation, which facilitated the establishment of trading routes and facilities, such as banking, which were needed for trade. In this setting of colonialism, trade made a contribution to the development of both the colonies and the metropolitan countries.

There has been a major increase in world trade since 1945, trade having roughly trebled in money terms. The composition and the patterns of trade have altered, because of such factors as technological advances, changes in costs and competitiveness, changes in consumption patterns, domestic policies including intervention in trade by tariffs or other measures, and establishment of new political or economic groupings such as the Soviet Bloc and the E.E.C. The growth in world trade since 1938 is illustrated by the following figures:

Exports	*1938*	*1953*	*1964*
Value	$25 bill	$82 bill	$170 bill
At constant prices	$25 bill	$40 bill	$75 bill

Of the total volume of world trade about a half is in manufactured goods, nearly one-fifth is in food, beverages and tobacco, the remainder being raw materials like oil and chemicals. The above factors have resulted in changing shares in world trade for individual countries. One important point is that although the

* In this paper the author has drawn on standard texts on the subject, particularly those by Kenen, Kindleberget, Thoman and Cortting.

trade of the lesser developed countries has been increasing, their share of total world trade is declining.

SHARE OF LESSER-DEVELOPED COUNTRIES IN WORLD TRADE

	Percent of World Imports			*Percent of World Exports*		
	1938	*1953*	*1963*	*1938*	*1953*	*1963*
Developed areas	71	65	68	65	65	67
Less developed areas	22	24	20	25	25	21
Centrally Planned areas	7	9	12	10	10	12

Source: Geography of International Trade. Thoman and Conkling.

The importance of foreign trade in relation to the overall economy varies widely in different countries. One measure of the relative importance of a country's overseas trade for its general economy is the export coefficient, i.e., its exports expressed as a percentage of national income. The following Table shows some of the countries which have high (or low) export coefficients.

Hong Kong	79·7	U.K.	15·6
Trinidad	63·5	Turkey	5·3
Malaya	49·2	India	4·8
Mauritius	42·1	U.S.A.	4·3
Rhodesia	40·0		
Netherlands	38·4		
Belgium, Luxemburg	38·0		
New Zealand	22·2		

Specialisation in exports is the degree to which a country depends on one or a few exports; it is mainly related to the uneven distribution of resources over the earth. Such specialisation of exports, when pushed to the point where a country's exports are mostly of one, or a few, agricultural commodities, can leave that country vulnerable to fluctuations in its earnings of foreign exchange, because of variations in volume or price of trade in the commodities concerned. France, United States and the Netherlands may be quoted as examples of countries with relatively low export specialisation, whereas in the case of Mauritius (dependent almost solely on sugar) the index of export specialization is 99·8.

There are important differences between the internal trade of a country and international trade. International trade always reflects to some degree wider national interests, because of the overall jurisdiction of governments and their power to achieve some consistency in policy by ensuring that their citizens trade

in ways which accord with general policy. The trade policies adopted by a country depend on the views of its Government regarding the gains to be obtained from international trade, both economic and non-economic, and how these are likely to be shared.

One of the differences between internal and international trade relates to the method of settling any trading balance. Within a country this usually does not give rise to problems, provided the debtor is solvent; the national currency is used. In international trade it cannot be assumed that every country's currency is acceptable to every other country in payment of trading balances. The most acceptable medium for international settlements is gold, although the U.S. dollar, and to a lesser degree sterling and some other currencies, have become substitutes for gold.

If a country's outgoings for imports exceed the inflows, the country will have problems in its international payments unless it has adequate reserves of foreign exchange (i.e., gold or acceptable international currencies) or can borrow. A government may attempt to remedy such an imbalance either through capital funds or through changing the trade balance. Direct controls on capital movements or on imports are likely to be avoided if possible since such measures present practical difficulties and have international repercussions. Action is likely to be directed towards encouraging exports and discouraging imports by such means as lowering the exchange rate (i.e., devaluation) or by domestic deflationary measures aimed at reducing overall demand for goods (including imports.) Where the exchange rate and real wage rates are relatively fixed, there may be a difficult policy problem for the country concerned, since it may have to reduce domestic demand very considerably—with consequent unemployment or economic stagnation—in order to achieve the necessary decrease in imports or increase in exports.

The level of world trade is sensitive to the level of world economic activity During the world depression of the 1930's the low level of economic activity had a disastrous effect on world trade. Interventions by governments in trade matters were intensified during that period to protect their own industries and levels of employment from foreign competition and to safeguard their balance of payments positions.

One method by which governments try to control the flow of imports is by tariffs, that is, by levies which are collected when the goods come in across the country's border. These tariff rates are normally a matter on which countries agree between themselves for specified periods in order that trade between them shall not be subject to arbitrary and unpredictable changes. During the 1930's, because of such agreements limiting their freedom to alter tariffs or because no feasible tariffs were high enough to keep out imports, many countries resorted to measures, such as quantitative restrictions and exchange controls designed to protect their own producers against foreign competition.

Trade Theory

It was mentioned earlier that Governments are influenced in their policy-making by their views on the gains that will result from international trade and how these gains are likely to be shared.

The theory of international trade is based on the commonsense observation that countries, as well as individuals, should be better off if each specialises in those activities it is best situated to carry out. This prescription is not as simple as it sounds because the advantage of a country in a particular activity can derive from a wide and complex set of circumstances, including endowment of natural resources, state of knowledge of its people, acquired skills, stock of capital, geographical situation and many other factors. These differential advantages should show themselves in the *relative* costs at which different goods are produced in different countries. To take the simplest example, a country A may produce motor cars at a cost, compared with its own cost of producing wheat, relatively lower than is possible in country B. In this situation it should pay country A to specialise in producing cars and country B to specialise in wheat and for some interchange of these products to take place.

In the real world things are much more complicated. Instead of two countries and two commodities, many countries and many commodities are involved. Furthermore, costs do not remain static and changes in them would suggest that there should be shifts in trade. Because of these complexities and because of local political pressures, governments have often used tariffs to stimulate domestic employment or encourage economic growth. Sometimes such trade intervention succeeds in redistributing the gains from its trade in favour of the country concerned and often it will redistribute income within the country's borders. Objections can be raised against such trade barriers in most cases; however one argument for them is the 'infant industry' argument. This defends temporary protection to enable a developing industry within a country to grow to a stage where it reaps the benefits of economies of scale and of maturity and so can lower its costs. However, there are usually practical problems in removing the protection at this stage and, furthermore, proponents of this argument sometimes overlook the fact that protection cannot create new industries if the necessary resources (i.e., labour, skill, raw materials and capital) are not available.

In general, although there are a number of qualifications to be borne in mind, some of which may be important in particular circumstances, economic theory suggests that international specialisation and liberalised trade policies are beneficial.

Following the 1939-45 war the allied governments initiated action to remove the restrictions on trade which had persisted from the 1930's or arisen out of wartime exigencies, and to generate expanded and freer trade. The International

Monetary Fund (I.M.F.) and the International Bank for Reconstruction and Development (I.B.R.D.) were set up to facilitate provision of short term funds and longer term capital respectively.

An attempt to set up a comprehensive set of trade rules with an organisation to police them—the International Trade Organisation—failed, but in 1947 the General Agreement on Tariffs and Trade was established. This was primarily an instrument to facilitate multilateral tariff negotiations. It prohibited the use of import quotas, except for necessary balance-of-payments reasons. It allowed undeveloped countries to protect infant industries, subject to review by G.A.T.T. Most important, it has provided flexible machinery for international consultation and negotiation aimed at resolving trade disputes. Since 1947 it has held six tariff negotiating conferences, culminating in the Kennedy Round (1964-67), which have resulted in a major reduction in tariffs and in removal of restrictions on trade, especially on manufactured goods.

During the depression of the 1930's, trade in agricultural products suffered even more than trade in manufactures in both volume and prices. Marketing problems were accentuated by measures taken to support domestic producers which encouraged additional production and so aggravated supply-demand imbalance for a number of commodities. Throughout the post-war period agricultural trade has expanded, but not to the same degree as trade in manufactured goods. The main markets for foodstuffs and agricultural raw materials are in the developed countries, which have high income levels. In these countries consumption of foodstuffs is already high and the possibilities of expanding it are limited. In the case of raw materials, there have been major changes in technology which have had the effect of reducing the use of raw materials and substitution by synthetics has taken place on a major scale. For the temperate-zone foodstuffs and for sugar, protection and support measures in traditionally importing countries have meant that home production has displaced supplies from the low-cost exporting countries and caused difficult marketing problems for these latter countries. In the case of the tropical crops, including the beverages (coffee, tea, cocoa), there is little production in the main importing countries but supply varies widely over short periods with resultant price instability. Also, these crops are commonly subject to high revenue duties in the consuming countries which may reduce consumption. In the underdeveloped countries food consumption per head is not high, but is only likely to increase as general industrial development in these countries provides higher incomes for the inhabitants.

The difficulties created for both developed and underdeveloped countries with export surpluses of agricultural products have been the subject of continuing international discussion and negotiation throughout the post-war period but have proved extremely intractable. Few countries have shown signs of retreating from their policies of agricultural protectionism, and, in G.A.T.T., the exporting

countries have become increasingly dissatisfied and critical, because the concessions which they have granted to the industrial countries, have not been matched by equivalent concessions on agricultural products. Economic integration in Europe has strengthened rather than lessened agricultural protectionism there. An attempt was made in the most recent round (the Kennedy Round) of negotiations to reduce protectionism in agriculture. Despite three years of intensive negotiating little progress was made, but discussions are still continuing.

Over a fairly long period, attempts have been made to solve some of the problems by international commodity agreements. These have proved difficult to negotiate and to administer and their success has been limited. Usually the emphasis has been on improving the stability and level of world prices for the particular commodity and in most cases the basic underlying problem in imbalance between supply and demand has not been tackled. There have been five agreements in the post-war period covering wheat, sugar, tea, coffee and olive oil. An interesting feature of the International Grains Arrangement (so far covering only wheat) which emerged from the Kennedy Round was the inclusion of provision for the supply of 4½ million tons of grain on concessional terms to underdeveloped countries. This recognises the inter-relation of commercial and non-commercial sales, even though the volume of non-commercial sales covered in this particular case is small in proportion to the total volume of transactions in wheat.

Recently there has been some market regulation or market-sharing on a less than fully multilateral basis. U.K. arrangements with respect to wheat, bacon and dairy products and U.S. arrangements with its principal suppliers regarding meat imports have been examples. These arrangements are compromises between a free trade position on the one hand and quantitative import restrictions on the other.

Post-war negotiations have revealed important differences in trade 'philosophy' between the agricultural exporting countries, the importing countries, the underdevelopeds and the communist countries. The difference between the United States and the E.E.C. which has emerged over recent years is of special importance, because of the dominant importance of these two in agricultural trade. Broadly, the U.S., despite some ambivalence in its own policies, advocates liberalised trade on the basis of efficient use of resources. The E.E.C. sees competitive unregulated trade in agricultural products as producing market chaos and favours regulation of such trade, with priority for domestic producers and with imports treated as residual supplies, subject to regulated minimum prices.

Problems of Economic Development

The post-war period has seen a remarkable upsurge in the determination of the people of the underdeveloped countries all over the world to achieve standards of living more in line with those of the more advanced countries. At the same time

the advanced countries have accepted the justice and desirability of these aims and there has been a growing realisation of the urgency of the problem posed by the population 'explosion'. The world's population may well double from its present level of 3,000 million to 6,000 million over the next 30 years, with the greater part of the increase taking place in the underdeveloped countries, those least able to cope with such a population increase.

The question of how development in these countries can be speeded up is a complex one. Here we are concerned only to make some observations regarding the relation between international trade and economic development. First it can be noted that there is no necessary relationship between the stage of development and the level of foreign trade. If income per head is taken as indicating the stage of development then a low percentage of imports to national income can be found at all levels, e.g. U.S.A., Finland, Spain, Ecuador and Jordan. The 'openness' of an economy (i.e. the extent to which it trades) is related to the nature of its resources. It is probable that the relationship between trade and national income rises in the early stages of growth and then declines because of import substitution. However, deliberate import substitution may not be the best way to achieve economic growth. Argentina, for example, has had a rapidly declining proportion of imports (from 25% of G.N.P. during the first quarter of the century to 7.5% in the 1950's) but its growth rate has been slow.

Underdeveloped countries need foreign exchange earnings to pay for imports, especially investment goods, necessary for their development programmes. Apart from aid or borrowing, exports are the means by which they can obtain such foreign exchange earnings. In 1964, world exports (excluding the Soviet bloc) totalled $149 billion, but the industrial countries imported only 19% of this total from the non-industrial ones, although it is this thin trade flow which is the one that must stimulate growth. Trade between the industrial countries increased by 166% between 1953 and 1964 while their imports from outside increased by only 37%.

On a global scale the trade gap for these countries (between their import needs to sustain the assumed growth rate and their probable export earnings) may be from 8 to 15 billion dollars annually, by about 1975. There are three ways to bring about this increase in foreign exchange, all of which present difficulties:

(i) to expand their exports of primary products,
(ii) to cut down imports by establishing import-saving industries,
(iii) to expand exports of manufactures.

Arising largely out of the dissatisfaction of the lesser-developed countries at the lack of progress in G.A.T.T. with their development problems and, especially with their ability to increase their earnings of foreign exchange by exports, a United Nations Conference on Trade and Development (U.N.C.T.A.D.) was

established in 1964. Detailed study by U.N.C.T.A.D. has been made, and is continuing, of ways of assisting the lesser-developed countries, but concrete progress has not been great. There are several lines along which action is being explored.

(*a*) There is the possibility of reducing price instability for the main export products from these countries. This has involved attempts to arrange international commodity agreements additional to those at present in operation. Buffer stock schemes to cope with fluctuations in supply are being examined and also schemes for compensatory financing, whereby some central organisation would supply foreign exchange (as a loan or a gift) to underdeveloped countries in years when their export earnings declined unexpectedly and unavoidably. Diversification of production, where this is limited to one or a few export crops, is being advocated and the countries concerned helped to examine these possibilities.

(*b*) Possibilities are being examined of expanding any existing arrangements for the developed countries to grant preferential access for exports from underdeveloped countries including manufactures.

(*c*) Over a wide field, including provision of cheaper shipping freights, technical assistance, training in marketing and export promotion techniques, action is being taken to help the underdeveloped countries to expand their trade.

Trade played a major part in the development of many countries during the nineteenth and early twentieth centuries. Goods, capital, labour and business enterprise moved out from the centre to the colonies and the centre countries, in return, owed their further development to this movement. Some people hope that a similar outflow of capital and skills will today help to develop Asia, Africa and Latin America. However, important aspects of the situation are different. The underdeveloped countries today, in the main, are not like Australia or U.S.A. or Canada in possessing vast tracts of land to develop and few people. Secondly, patterns of trade are changing; the demand for raw materials may not be so insatiable as it was during earlier periods. Thirdly, some underdeveloped countries may not welcome foreign private capital for political and social reasons.

The development of colonies was also aided by considerable investment from the centre, although not much of it went into manufacturing. Today many investors are chary of less developed countries, which have chronic payments problems and maintain exchange control. Also, relatively slow growth in demand for raw materials has deterred investment in mining and agriculture in less developed countries. However, despite these fears and barriers, in each of the past several years some $2 billion of new private capital has been forthcoming, half of it from the U.S.A. New thinking and new institutions may be necessary to

overcome the obstacles, partly economic and partly political, which today hinder private investment from playing a bigger role in the progress of the lesser-developed countries.

Gradually a wealth of knowledge and experience is being built up which should help underdeveloped countries to plan for more rapid development on sound economic lines in accordance with each country's own needs and resources and to implement successfully its plans. Aid programmes in the developed countries are considered by many people to be inadequate—in few countries has such assistance reached the target figure of 1% of national income. Aid continues to be given mostly on a bilateral, often tied basis, rather than a multilateral basis which probably accentuates problems of co-ordination. The recent role of the I.B.R.D. and the formation of other regional investment banks with international financial support to provide funds for development projects have considerable potential importance for the future.

Within the space of a few thousand words it is impossible to cover adequately such a complex and important matter as trade and development. Insofar as there is a simple conclusion, it is as follows. The domestic agricultural policies of a country like the U.K. are inextricably linked to its international trade and aid policies. As a consequence these agricultural policies can only be formulated meaningfully if these wider issues are adequately considered and accommodated within the policies. The debate about agriculture is not parochial. In looking at the problems of trade and development the issues are not clear-cut. Trade may not assure economic development or political stability for the underdeveloped countries but failure to provide opportunities for trade will discourage growth and help breed frustration and possibly disorder. The task of helping the less-developed countries to expand their trade seems an essential part of assisting their development. The developed countries by appropriate policies can help to draw less-developed countries into the world economy so as to capture the full gains from trade and minimise wasteful policies of self-sufficiency.

IV. AGRICULTURAL ADJUSTMENT IN THE COMMON MARKET

by J. VAN LIERDE

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Common Agricultural Policy is directed towards goals defined in Article 39 of the Treaty of Rome, namely: increasing agricultural productivity, ensuring a fair living standard for the agricultural population, stabilising markets, guaranteeing supplies and ensuring reasonable prices to consumers. The degree to which the Council* and the Commission* aim at each of the separate goals depends upon their assessment of where the balance of effort is required. At present the main shortcomings are firstly a disequilibrium between supply and demand and secondly a substantial disparity of incomes and social status between farmers and comparable non-agricultural occupations.

The underlying reason for these shortcomings is a poor agrarian structure relative to modern production technology. Of the 6 million farms (of more than 2½ acres) some 80 per cent are below 25 acres in extent and are often fragmented. Less than 3 per cent of the farms are bigger than 125 acres, although this 3 per cent accounts for about one-quarter of the total cultivated area. Most of the larger farms are in France and Italy, which contain about three-quarters of all farms exceeding 50 acres. The same type of pattern applies when looking at individual enterprises, for example 80 per cent of all milk producers have less than 10 cows. This pattern of agricultural structure has emerged historically and providing technology remained relatively unchanged—for example based on draught animals and hand milking—a stable structure was relatively adequate. However, in the last generation there has been a revolution in production techniques in temperate agriculture, a revolution which requires a substantial investment per man in machinery, buildings and other bought items like fertilizers and chemical sprays. At the same time the new technology enables a man to tend a greater area of land and a greater number of livestock.

The result of having a structure which is not appropriate to the new technology is that unit costs are higher than is necessary, so that either consumer prices will be high, or tax-payers must make substantial subventions to farmers, or a combination of both. There is also a dynamic element in that individual farmers, who take decisions individually, are likely to attempt to increase their incomes by expanding production. Thus additional produce, often produced at high cost, is

* The Council is a Council of Ministers from the member-states and is thus a political body, responsible for taking decisions. The Commission is of permanent officials and is analagous to the Civil Service, responsible for submitting policy proposals and implementing decisions of the Council.

put to the market. As a result, for many products surpluses are either occurring in Europe or are a real possibility for the near future. These surpluses impose a further financial burden on the Community, since for the most important products, produce is bought from the domestic market at an intervention price and then disposed of at a world market price which is usually substantially lower. In addition to the dissatisfaction within the E.E.C., there are also complaints from traditional agricultural exporting countries who find that not only are their imports to the Community relatively stagnant, but that they are also meeting international competition in world markets from any surpluses which are being marketed.

Thus a deficiency in the structure of E.E.C. agriculture which is the familiar agricultural adjustment problem, has serious and far reaching consequences for farmers, consumers, tax-payers and overseas countries. It is in an attempt to overcome the difficulties which are developing that the Commission have submitted a Memorandum concerning the need for structural change within the E.E.C.*

Any solution to these difficult problems must recognise the interests of the main groups in the argument. Firstly, there are the producers, who quite naturally would propose a general increase in price levels for agricultural products. Secondly, there are the consumers, who, again quite naturally, would prefer a decrease in food price levels. Finally, there are the tax-payers who, because of the way the Common Agricultural Policy works, would prefer to see some limitation on production, possibly by the use of some quota system. But how realistic are these separate solutions to the problem?

A general increase in price levels might, at first sight, appear to solve the problem for farmers. However, it would not solve the dis-equilibrium between supply and demand. Indeed in the face of higher prices one might expect a further increase in production. The cost to consumers, the additional burden to tax-payers and the dislocations to world trade would remain unanswered.

A general reduction in prices has attractions to non-agricultural interests. Unless such a price reduction were of the order of 15 to 25 per cent over all, however, it is unlikely that there would be a reduction in supplies, because much of the production comes from near-subsistence farmers who may be forced by lower prices to make further production increases. A price reduction of the order of 20 per cent would reduce the incomes of many small farmers to an insufferably low level and for humanitarian as well as political reasons a cut of this magnitude is not a serious possibility.

The introduction of quota systems presents difficulties both in principle and in practice. The main objective of general economic policy within the E.E.C.—and hence also for agriculture—is to achieve a specialisation of production patterns

* Memorandum on the Reform of Agriculture in the European Economic Community. Supplement to Bulletin No. 1—1969.

based on natural conditions and advantages. The introduction of a quota system tied to individual farms would be a serious impediment to any such specialisation. From the political point of view there would be enormous difficulties in attempting to allocate any 'rights to produce' between member-states and also within member-states between individual farms. Some of these difficulties would disappear if a system of transferable certificates were used, so that the 'right to produce' could change hands. From an administrative point of view this system would be extraordinarily complex to handle and for the time being is probably ruled out.

On the face of it then any attempts to overcome the shortcomings of agricultural policy by simple expedients are likely to be unworkable.

A Digest of the Memorandum

Price Policy

As far as price policies are concerned radical modifications are envisaged in three respects.

Firstly, in future, prices will have to fulfil their normal economic function, which is to indicate to buyers and sellers what the underlying economic forces are. On the basis of this principle prices for 1969-70 will have to be no higher than the previous year and for some arable products they may even have to be decreased. Over the longer term, price increases are almost bound to be excluded for those products which are in actual surplus, for as long as the surpluses exist.

Secondly, the determination of product price can no longer be based on the need to generate adequate income for farmers at the individual level, but will depend much more upon the degree of community self sufficiency of the products in question.

Thirdly, measures are envisaged which will restore equilibrium in supply and demand by limiting the total productive capacities. Among other ideas are those for taking land out of cultivation and those for reducing the number of dairy cows by granting premiums for slaughtering.

By means of these and other structural measures the Commission hopes it will be possible to contain supply and thus reach a better market equilibrium.

Structural Policy

The thoughts of the Commission on structural policy are little short of revolutionary. It is now considered that the only practicable way of increasing the income per farmer is to have a major reform of the structure of production, by increasing the size of the individual farm, reducing the number of farms, and by encouraging co-operation between farmers.

Increase in the size of a particular farm will often depend upon the availability of adjacent land, which in turn is dependent upon the rate of outflow of farmers.

For this reason the Commission has initially placed much stress on the measures to decrease agricultural population. As a result of these measures it is hoped that there will be an acceleration of the exodus of farmers, so that by 1980 the farm population will have fallen from the current figure of 10 million people to around 5 million. The whole basis of the structural proposals is the belief that farmers themselves will accept the inevitability of such developments and the sum of their individual decisions will bring about the required changes.

The specific measures which are envisaged are as follows:

(*a*) Any owner-occupier who gives up farming and surrenders his land will be eligible for a structural reform grant amounting to eight times the rental value of the land. Part of the plan is that the beneficiaries of the structural reform grants may retain ownership of their land.

(*b*) Farmers, aged 55 or over who wish to retire and surrender their land, will be able to draw a supplementary annual allowance of between 660 and 1,000 Units of Account.*

The land which is surrendered under (*a*) and (*b*) will either be available for amalgamation or for other purposes such as afforestation.

(*c*) There are also proposals to help people who wish to take up other occupations, schooling and vocational training in rural areas, retraining facilities and proposals for the creation of new jobs in rural areas.

The Commission also has ideas for those who wish to remain in a modernised agriculture and who will regard farming as a full-time occupation. That is to say those ideas are not concerned with part-time farmers.

For production units to be efficient they must be large enough to allow an optimal combination of productive factors. This involves the use of modern technology, the provision of better investment facilities and the creation of working conditions comparable with those in other sectors of the economy. These larger units will have to be created either by the expansion of existing farms, by a process of amalgamation or by a voluntary co-operation between farmers.

For many enterprises the concept of 'Production Units' has been evolved. This is a situation of 'partial amalgamation' where a group of farmers, while retaining their individual identity, will co-operate on one particular enterprise, e.g. dairying, in which they can collectively attain worthwhile economies of scale. It is also possible for a production unit to be established on one single farm. These production units will have to attain certain minimum sizes, roughly corresponding to the economic optimum under modern technology. Thus a dairy unit would comprise 40 to 60 cows, for meat production 150 to 250 head of cattle, for poultry meat production an annual output of 100 thousand birds, for egg

* One Unit of Account = $1 U.S.

production 10,000 laying hens, in pig farming the capacity to fatten 450 to 600 head at a time and for grain crops possibly 200 to 300 acres.

'Modern agricultural enterprises' are whole farms, in contrast to production units, and are based on a total amalgamation of production resources into a single business unit. Within a 'modern agricultural enterprise' each separate item produced must attain the minimum size referred to in connection with 'production units'.

Given that the objective is to create larger farms, the question is how quickly can this be achieved. If 5 million people were to quit agriculture by 1980 and on average they held 12·5 acres, then more than 60 million acres (or more than one-third of the cultivatable land of the E.E.C.) would have to change hands. Institutional, legal and fiscal measures which are currently impeding these changes, will have to be amended. Financial assistance will be needed to encourage the establishment of production units and modern agricultural enterprises.

For production units it is proposed that aids should be given by way of:

(*a*) investment grants, applicable for items other than vehicles and livestock, at an average rate of 30 per cent.

(*b*) the large scale availability of credit, with a system of guarantees to back requests for loans, where tangible security is lacking.

For 'modern agricultural enterprises' the following incentive is also advocated: Establishment grants, which would vary depending on the number of farms involved and their size, to average 5,000 units of account.

In the past, policies have frequently been implemented which have given attractive grants for agricultural investment, even though in many cases the investment itself could not be economically justified. This experience has led the Commission to conclude that member states should increasingly concentrate their own expenditure on aids to 'production units' and 'modern agricultural enterprises', so that from 1975 onward these are the sole beneficiaries. In the case of certain specialised or quality products, enterprises falling short of the minimum size referred to earlier will be eligible for financial assistance, provided that certain conditions are fulfilled (e.g. that their production is profitable and that contractual marketing commitments exist).

Alterations in the structure of agricultural production will call for readjustment of the marketing framework. Three types of measures are envisaged. The first two measures, encouraging producer-groups and a European type of company, are micro-economic approaches; the third measure, grouping of product councils, is macro-economic.

At the farm level more emphasis will be placed on the establishment of producer-groups, in order to create viable-sized marketing organisations and to give producers an adequate bargaining position.

There is also a proposal to encourage the establishment of European-type companies. This would facilitate and encourage trades and processing industries, such as co-operatives, to set up in business and merge across the frontiers.

For the industry as a whole the creation of groupings of product-councils is envisaged, which would be more or less analagous to Marketing Commissions. Groupings of product-councils could be created for a single product or a closely associated group of products and their responsibilities would be to cover these items at a Community level. The responsibilities of these councils would include the establishment and operation of a permanent system of market intelligence and the execution of any research considered necessary in the interests of improved marketing. They would also cover the examination of methods of determining price quotations on agricultural markets. There would also be a need for them to have effective control over the quality of goods marketed. On the selling side, groupings of product councils would have the power to mount sales promotion campaigns and to develop contracts with purchasing agencies, such as processing industries. At a later date the Commission intends to outline proposals for the rules under which groupings of product councils should operate.

It is clear from the Memorandum that it is the Commission's intention that in many fields of existing marketing regulations, the influence of individual Governments will have to decrease, while the responsibility of farmers themselves and farmers organisations will have to increase.

Conclusions

The whole purpose of the Memorandum is based on a recognition of the inadequacy of the present structure of the agricultural industry to modern conditions and the inability of simple trading and pricing policies to rectify the situation. The direct evidence of this has been the mounting level of the cost of administering the Common Agricultural Policy, which during 1969 has been estimated at 2,300 million units of account incurred centrally, together with an additional 2,200 units of account spent by individual member states on structural programmes. These two items taken together account for 7·8% of the annual budgets of the member states. Furthermore, even with this high level of Government spending, farm incomes are still inadequate and consumer prices are still relatively high.

It is hoped that as a result of any structural proposals being implemented, that by 1980 onwards the structure of the industry will be such that farm incomes will be adequate, that consumer prices will be reasonable and that the total taxation liability of supporting agriculture will not exceed 2,000 million units of account per annum, of which perhaps 750 million units of account would be for market support and the remaining 1,250 million for structural support. The political, social and economic difficulties of achieving such a major programme of structural

change should not be underestimated. Nevertheless it is difficult to see any real alternative. By creating an awareness among farmers themselves and those concerned with agriculture, it is hoped that it may be possible to bring about the required measure of reform and thus generate an efficient, well-structured and prosperous primary sector of the economy.

V. FUTURE FARM STRUCTURE IN BRITAIN*

by B. PEART

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This chapter looks forward into the 1980's and speculates as to the way in which farming activities could conceivably be organised at farm level by that time. This will involve looking at possible on-farm adjustments in the ownership, the control and the deployment of physical, human and financial resources. It is not an exercise in scientific forecasting, but is more a matter of reviewing the significant forces of change that are already evident today, and ruminating on their possible impact by the 1980's.

A simple checklist of the principal aspects of structural change—some of which influence the patterns of farm organisation in almost inevitable fashion and others perhaps more ephemeral or more uncertain in their impact—must include:

(i) *structural pattern,*

the tendency for farm numbers to decrease, for farm acreages to increase, for a greater degree of geographical concentration of production, and for more specialisation in production at farm level;

(ii) *relationship with ancillary and related industries,*

the tendency for growth in the relative importance of ancillary and related industries evidenced by a growing dependence on non-farm inputs, including capital, and a developing closer integration of farming within a continually widening process of 'food production';

(iii) *production methods,*

the trend of technological and scientific discovery, of increasing machine and buildings investment as the instruments of, and aids to, technological adoption, of continuing capital/labour substitution resulting from relative changes in factor costs;

(iv) *resource supply,*

an environment of slightly diminishing land supply and fairly substantial run-down in the hired labour force, arising in some degree from non-agricultural pressures, and to that extent imposing, from without, changing patterns of capital/labour land 'mixes' at the farm level;

* The comments and interpretations in this chapter are the responsibility of the author and do not purport to represent any official view of the Ministry of Agriculture, Fisheries and Food.

(v) *tenure,*

the well-defined trend towards more owner-occupation;

(vi) *legislative measures,*

The growing significance of taxation and legal considerations in the process of making sound business decisions.

this is not an exhaustive catalogue, but it will serve to highlight those forces which influence most strongly any consideration of agriculture in the 1980's.

Size Structure

What pattern of farm sizes might we expect to see in the 1980's? An agriculture dominated, in numerical terms, by the large-scale farming business, or an industry based on modest scale family units? Inevitably almost, one images that it will be neither 'black' nor 'white', and rather than make some rash attempt to forecast the pattern of the 1980's, it is preferable to project forward the trend of the 1960's, and thereafter discuss in general terms the likelihood of this eventualising.

Acreage is not a satisfactory measure of business size and volume of turnover or standard man days, or other similar measures of all output or of all input, are superior. However, the extent of the land base in the farm business is of considerable importance, particularly when considered in a dynamic, longer-term context. Furthermore, acreage is a more tangible concept for discussing farming methods and organisation. Table 1 therefore sets out the 1960–65 changes in numbers of farms in various size categories over 50 acres, and projects forward these rates of change to 1980 and 1985.

TABLE 1

SIZE STRUCTURE—ENGLAND AND WALES 1980 AND 1985
(ASSUMING CONTINUATION OF THE 1960–65 RATE OF CHANGE)

Year	*50–100a*	*100–150a*	*150–300a*	*300–500a*	*500–700a*	*700–1,000a*	*1,000+*	*Total*
1960	57,600	29,600	33,000	9,600	2,450	1,133	651	134,000
1965	53,100	27,600	31,700	10,200	2,851	1,415	862	128,000
Rate of Change in 5 years	−8%	−7%	−4%	+6%	+17%	+25%	+32%	
1980	41,500	21,500	28,000	12,500	5,300	2,750	2,050	114,000
1985	38,000	20,000	27,000	14,000	6,200	3,450	2,700	111,000

Source: Based on The Structure of Agriculture, H.M.S.O.

N.B.—For these projections to be in harmony with the total availability of land, it is necessary to assume that, with the largest size groups, the average size of holding within each size group will be somewhat lower in 1980's.

Thirty acres was roughly the full-time threshold in 1967, in that the number of holdings in England and Wales over 30 acres in that year was roughly equal to the number of full-time holdings measured on an S.M.D. basis. One could argue that by 1980, 50 acres at the lowest would be a comparable threshold figure and hence Table 1 deals only with farms of over 50 acres.

This particular projection repays comparison with a similarly based projection of full-time holdings in England and Wales in Table 2 which shows the 1963–67 trend in numbers of full-time holdings (over 275 s.m.d.s) and projects this 1963–67 trend forward to the 1980's.

TABLE 2

(i) *Changes in numbers of Full-time Holdings 1963–67 (England and Wales)*

1963	160,000	8% decrease over 4 years
1964	157,000	
1965	156,000	
*1966	149,000	
1967	147,000	

(ii) *Projections based on 10% Reduction in Full-time Holdings every 5 years*

1970	140,000
1975	126,000
1980	113,000
1985	102,000

* (The s.m.d. base was changed in 1966 and this accounts for some 4,000 of the 7,000 decrease which took place between 1965 and 1966).

Source: Based on Ministry of Agriculture statistics.

The reduction in the numbers of full-time holdings is the resultant of three main forces (*a*) the amalgamation of units, (*b*) general decreases, over time, in Standard Man Day requirements and (*c*) changes in stocking and cropping programmes which reduce the farm's overall labour requirements. Although there are innumerable points of detail that could be discussed, as long as one is prepared to think in terms of broad orders of magnitude, Tables 1 and 2 present a picture of size structure in the 1980's which is sufficiently credible to be used as a basis for examining other related issues.

Manpower

Organisation of production at farm level is bound to be influenced by the availability of hired labour, its cost and its quality. In a broader context, there are questions of the future distribution of the labour force—by geographical region, by farm size and by farm type—but taking England and Wales as a whole, the

full-time regular agricultural labour force fell between 1960 and 1968 by an average for the period as a whole of just over 5% per annum:

1960	406,000
1962	368,000
1964	333,000
1966	295,000
1968	263,000

Table 3 sets out projected numbers of full-time hired workers in England and Wales assuming two different rates of outflow—firstly the 5% per annum which has so far been typical of the 1960's, and secondly, a 4% per annum outflow. Several serious commentators are expressing doubts about the likelihood of the 1960's trend continuing unabated, hence the inclusion of the 4% 'option'.

TABLE 3

REGULAR WHOLE-TIME WORKERS
(ENGLAND AND WALES)—PROJECTION

Rate of decrease (1968 on) ——→	*5% per annum*	*4% per annum*
1970	238,000	242,000
1976	184,000	197,000
1980	142,000	160,000
1985	110,000	131,000

These simple projections will serve to give some quantified, broad notion of hired labour force, which conceivably, the industry could be employing in the 1980's.

This then could be the general shape of the agricultural sector in the 1980's—around 100,000 full-time holdings by 1985 compared with 156,000 in 1965, and hired workers to full-time holdings in a ratio of approximately 1:1 as against 1:2 in 1965. And since agriculture is still basically concerned with land and people the data in Tables 1–3 represent the central core of this speculation about the future.

To examine possible changes in the relative importance of various functional roles of manpower, six categories can be considered; (i) a producing function; (ii) a selling function; (iii) a buying function; (iv) an accounting function; (v) a planning function; (vi) a financing function. There are a number of major influences which are likely to have a bearing on the probable changes of emphasis in regard to these six functions.

The producing function has two aspects—one operative, the other supervisory. If the pattern of farm sizes in the 1980's and the farmer/farm worker ratios are to be broadly of the orders indicated in Tables 1–3 it is quite possible that the 130,000 hired workers of 1985 may be employed on no more than some 40,000 of the 102,000 full-time holdings postulated in Table 2. It is reasonable to assume that on a

significant number of these 40,000 or so holdings, the employees will be members of the family, and the vast majority of the workers hired outside the family will therefore be found on the 26,000 holdings of over 300 acres projected for 1985 in Table 1. Even given technological and scientific advance, the change in the ratio of holdings to hired workers—from 1:2 in 1965 to a projected 1:1 in 1985—is so marked, that it seems certain that the producing function in its operative, rather than in its supervisory, sense, will loom larger in farmers' schemes of total activities.

Another current trend lends weight to this thesis. Of the major groups of agricultural inputs, other than land, the factor costs of labour rose between 1960 and 1967 at a faster rate than those of other inputs. With 1960 as a base year the factor cost of labour in 1967 was 141, that for feed 115, for fertilizer 104 and for machinery, one might guess, at around 110–120. This puts pressure on finding labour-saving methods of production, and the fact that total expenditure on hired labour by U.K. farmers rose only by some 8% or £25m. in the decade 1957–8 to 1967–8 is evidence of the extent to which such measures have been effective.

The adoption of new technology improves manpower productivity, but these productivity gains are often only achieved through capital being substituted for labour. Witness the growing levels of investment in machinery and buildings, whose economic justification depends partly on improved raw material conversion rates but also on a reduced labour requirement per unit of output. It seems probable that developments in technology will put an increasing premium on operative skills and that these skills will command a more important place in farming.

If there is to be this high premium on operative ability, various forms of share-farming arrangements between a partner with capital resources and a partner with requisite husbandry skills should merit closer attention. At one extreme there is the example of the landlord/tenant partnership on a whole-farm basis, but there are many possible variants of the 'bowing' system in milk production traditional in South West Scotland, applicable to a range of commodities.

Buying and selling practices have undergone significant, although not revolutionary, changes in the 1960's. The marketing aspect is the more important of the two and greater market orientation is one of the current catchphrases. But what is to be the farmer's function in the buying and selling process?

The trend towards more rigorous market specifications, uniformity and continuity of supplies, specialist market outlets, and few buying points, underlines the need for closer communication between the producer and his potential markets. The typical producer with the produce of his 300 acres (or less) to market, could not justify devoting sufficient time and energy to acquiring and sustaining the marketing skills which would enable him to cope adequately with increasingly demanding marketing problems. Therefore it is likely that we shall see greater devolution to specialised buying and marketing agencies.

The farmer of the 1980's, suitably market-orientated, may find himself more closely integrated within the overall food production complex. In the field of processing, this integration could eventualise in several ways—through bigger farmers independently moving forward beyond the farmgate into processing, through smaller farmers gravitating towards co-operative processing, or through farmers, large and small, producing contractually for outside processing firms. In the field of marketing and distribution, the market/producer link may frequently be provided by specialised grading/preparing/packaging/distributive/marketing firms, with whom producers would commonly have some contractual arrangement and which themselves would have agreements with major buying points. There may be more comprehensive vertical integration. Whatever the particular form of integration, the outlook suggests the development of marketing as a specialisation in which the farmer is less directly involved than today, but with the consequence to him of tighter market specifications impinging directly on production methods.

The accounting and planning functions are two specific activities subsumed under the general heading of 'Management'. These are further examples where, compared with today, farmers of 1985 will have tended to devolve to off-farm agencies. The importance of recording, analysing, planning and checking will not diminish. The 1980's will see a farming population more conversant with the methodology. However, the case for 'hiving off' certain functions is convincing. Routine recording and analysis requirements are likely candidates for devolution, more appropriate to clerical/secretarial employees of recording agencies, than to a highly skilled technician or professional manager. Improved methods of analysis and planning, requiring more input/output data, may call for specialist professional expertise and highly developed data processing methods and facilities, which may point to further reliance on consultancy or advisory resources.

In a functional sense, therefore, the vast majority of full-time farms may be emphasising production skills on which, aided by appropriate off-farm agencies, their success will primarily depend. They will have become more conscious of market requirements, but will have delegated many marketing functions. They will have become increasingly dependent on outside professional agencies for routine accounting and controlling functions, as well as for legal and taxation guidance. The remaining larger farmers—only a few thousand in number—will have the formal structure of management hierarchies, with greater emphasis on policy making, long-term planning, communication and performance control; they will have more direct interest in marketing agencies; they will have hired their operative skill and will depend for continuing success on their strategic decisions and organising abilities.

Capital

If the projections in Table 2 eventualise and if the acreage of land devoted to farming remains roughly the same as today, the average full-time farm of 1985 will comprise about 210 acres of crops and grass as against the present 148 acres. It would be surprising indeed if there were a uniform pattern of business growth, but the capital investment implications of a 40% increase in acreage by 1985 is a major issue in itself. Add to this the capital intensifying forces of (i) machinery/labour substitution, (ii) mechanical and environmental aids to improved crop and livestock performance, (iii) movements into the processing and packaging fields, (iv) specialisation and an enlarged scale of individual enterprises, and then the credibility of some of the structural speculations in Tables 1 and 2 may seem open to serious question.

Most publications dealing with farm incomes show returns on tenant capital (i.e. net income related to machinery, livestock and short-term operating capital investments) lying between 12% and 25%, depending on the type and scale of farming activity. These are average returns and asset values used in their calculations are often below replacement cost. However, even if tenant capital investments in machinery, livestock and short-term operating capital were valued at replacement cost, the level of return on tenant capital would still, generally speaking, be high enough to service lending at current interest rates and yield a profit. This generalisation often applies even more forcibly to marginal investment. One particular area where it is noticeable is where intensification has been adopted. A typical dairy herd expansion of from 50 to 80 cows, achieved primarily through improved grassland management and abetted by modest alterations to existing buildings and milking facilities, can show a return on marginal capital of between 20% and 30%. In beef production, a switch from traditional fattening to the eighteen-month beef system can show a marginal return of 20–30%. Intensification of the lowland sheep enterprise from 3 ewes per acre to 5 ewes per acre may present a marginal return of around 30%. The cattle and sheep-to-cereals switch, resulting from better grassland management may, over a limited range, present returns in the 50–100% range. There is still scope for an uptake of this type of improvement, which will give favourable rates of return to tenant capital, if there is the necessary technical and managerial skills. It is safe to predict that our plant and animal scientists will continue to make contributions facilitating further developments of this economic character. A whole range of investments in labour-replacing machinery have yielded returns of over 25%. Expanding farm acreage, through renting, to achieve labour and machine economies, consequent on adopting mechanical innovation may yield a 20% marginal return. Opportunities such as these two will presumably continue to present themselves.

This marginal tenant capital is not, however, the problem area, nor is it of radical importance in regard to future capital structure. In many cases the role of many such investments is to strengthen an existing financial and physical structure in the face of changing economic forces. When considered in the context of the whole life-cycle of the farm business, they are often merely transient—though beneficial—shorter-term influences.

The long-run factors are matters of more fundamental significance. Firstly there is a prospect of much higher investment in buildings. In dairy farming, this is epitomised where complete steadings have to be rebuilt, once all 'make-do-and-mend' opportunities have been exhausted. Returns of the order of 10–15% are then the rule. In pig and poultry production, achieving the twin goals of greater environmental control and economies of scale often favours starting from scratch on a large scale, and returns are more likely to be in the vicinity of 10% rather than 20%. Developments in the technology of crop storage and conditioning pose similar problems. At this present point in time the two real issues are, firstly, that returns on investment are modest if a realistic view of planned investment life is taken. Secondly, because of the root-and-branch nature of the projects, their growing sophistication and the economies of scale, the outlays are financially substantial. The size of these investments materially changes the asset structure of the business concerned. With the typical farmer of today this may involve heavy borrowing, which, given only a period of 6 to 10 years to pay back, puts the business into a straitjacket. More longer-term commitments and debts and more dependence on initial finance from outside the farm-business are the likely consequences.

The process of substituting machinery for labour can proceed apace without due disturbance to the business as long as the machine capacity and the farm's needs are compatible. With the possibility of a regular hired labour force reducing to the level of some 130,000 by the mid-1980's and a growing predominance of family farms, the economic justification for large capacity machines may devolve around their joint use amongst a number of farmers, whether this be through joint ownership or through their being operated by contractors. Today many mobile pea-viners, grass-drying plants, vegetable harvesters and sugar beet harvesters are operated either jointly by farmers or contractors. This trend seems certain to develop. For machinery, therefore, whilst the levels of investment per business may rise, machinery sharing and contracting promise to become more prominent.

Extending the business beyond the farm gate into the fields of storage, grading, processing and packaging introduces a new element into the investment pattern. Most major developments involve substantial capital sums and if farmer ownership and control is to be retained then some form of co-operative arrangement could be expected to figure prominently. If present experience is any guide, even with a co-operative approach, these large-scale developments will tend to be initiated and

supported mainly from amongst the few thousand farmers at the upper end of the size scale.

There remains the problem of land investment which has to be considered against a background of (i) growing demands on capital resources for medium-term buildings and fixed equipment, (ii) the uncertain effect of any capital taxes on the market for agricultural land, (iii) a growing disparity between the rate of increase of the price of land and its income earning potential in farming use. The simple question is whether owner-occupation is a feasible means of business expansion. Land ownership viewed as an investment in its own right has been an attractive proposition over recent years primarily because of the rate of capital appreciation. Table 4 below shows vacant possession prices for farms of all sizes sold between 1958 and 1968, and sets out the year-by-year percentage increases in price. To complete the picture of returns to land ownership, net rentals must be added, although returns may run only at a modest 2% or thereabouts.

TABLE 4

LAND PRICES (VACANT POSSESSION 1958–1968)

Year	*Average Sale Price per acre*	*Year-to-Year Price Increase*	*Periodic Rates of Increases*	
	£	%		
1958	85			
		19		
1959	101		1958–68	12% compound
		21		
1960	123		1958–64	17% compound
		1		
1961	124		1964–68	7% compound
		8		
1962	134			
		25		
1963	168			
		25		
1964	214			
		12		
1965	239			
		1		
1966	242			
		7		
1967	258			
		9		
1968	280			

Source: Estate Gazette.

The real problem of land acquisition is not one of total returns to investment (including capital appreciation) but one of liquidity. For the individual farmer, the funding of land purchase has of late presented increasing difficulty. Average returns to owner-occupation (i.e. net farm income related to assets valued at current market value) are generally within the range of 3% to 8%. A return of the order of 11% is what is required to fund 20-year borrowing at 9% interest rates, but as Table 5 demonstrates, such a return on marginal investment is not always possible.

TABLE 5

MARGINAL RETURNS PER ACRE FOR SELECTED ENTERPRISES (GOOD AVERAGE PERFORMANCE. LAND CHARGES EXCLUDED)

	Returns			*Costs*
	A. Incurring variable costs only	*B. Incurring minimal specialised building & machinery costs*	*C. Incurring major specialised building, machinery & labour costs*	*Gross Annual cost of amortising £280-acre at 9% over 20 years (principal & interest)*
	£	£	£	£
Dairy cows	55	48	30	31
Barley	30	26	20	31
Sheep	20	19	17	31
Barley/Cash Roots (4:1)	45	38	30	31

Source: Various farm management analyses.

Although it may seem that the purchase of small acreages additional to an existing farm are capable of being funded, these opportunities are fairly rare and more commonly the activity expanding business is faced with a 'B' or 'C' situation of Table 5. The bigger the business the more difficult to maintain any given rate of growth because of the marginal tax rate.

If the above pattern of marginal returns to owner-occupation continues, and this is coupled with, say a 9% gross yield to land ownership, when capital appreciation is included, the current attention focused on the possibilities of attracting so-called 'City' money into land purchase is not surprising. There was a movement of funds into land from this source during 1968, although its precise extent is not known. This included sale and lease back arrangements at 4%–5% of approximate vacant possession value, with transactions usually in properties of over £100,000 value. Increasing investments from pension funds and other similar resources are

likely to continue. While land investment may not maintain the same attractiveness that it has done over the past two years, at least it can be expected that institutional investors will retain their awareness of the investment possibilities offered by agricultural land. It is not difficult to imagine more land being offered to these investors, particularly by medium and large-scale owner-occupiers wishing to expand. There may also be offerings from those who have been unable or unwilling to make adequate provision to meet the liabilities of capital taxes and estate duty. This development, with the land ownership separated from farming operation and the latter being undertaken by private individuals, partnerships or private companies, seems more probable than large-scale farming ventures undertaken by owner-occupying corporations.

Summary

In summary the outcome of all this speculation about structure in the 1980's suggests that the family farm may still dominate the agricultural scene. These will be farms—perhaps some 70–80,000 in number by 1985—which are largely, though not necessarily wholly, dependent on family labour; whose competitive strength would be based on husbandry skills and the flexibility of the family team; and who would probably possess few major inherent scale disadvantages in production. Their potential vulnerability would stem from a possible failure to become sufficiently market orientated and from failing to take steps to mitigate the effect of, and make suitable provision for, tax contingencies which could endanger succession.

Differing in character, would be a few thousand—perhaps no more than 5,000—large-scale farming units. They would derive their strength from professional management with strategic planning and organising talents, from marketing advantages and from their ability to attract outside capital.

If there is one theme which can effectively embrace what appear to be the major forthcoming changes in structure at farm level, it is integration. Farming will come to be an integral part of a food production complex which would include highly-capitalised, science-based requisites industries just as much as the food processing and merchandising sectors, with farming finance as part of the general financial complex. This integration could be both vertical and horizontal in nature. At the one end of the spectrum, it would be exemplified by the individual farm unit using contracting services, various professional agencies, requisite supply services and machine-sharing arrangements. At the other extreme, market orientation would impinge directly on production and lead to the development of farmer-owned processing and packaging firms, farmer-controlled marketing agencies, closely specified contractual arrangements with processors or involvement in a vertical integration chain controlled by a supply firm. In the finance sense,

this integration would give rise to a greater dependence on financial resources from outside the farm family, either by the traditional lending institutions, by the integrating firms, or by business partners, including landlords, of various forms.

In such an integrated agriculture one can question the role of the farming all-rounder, with his catholic functional interests, with his large equity share of the farm business giving him an unusual degree of independence.

VI. MANPOWER IN AGRICULTURE*

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Any reference to manpower in the agricultural industry immediately leads to talk of the drift from the land. The first thing which has to be recognised is that the drift from the land is nothing new. It has been going on for at least 600 years, and it is likely that it will continue, in some degree, for some years to come. There is nothing inherently wrong in labour moving from one field of activity to another. If one industry can do the job that the community requires of it with fewer workers, and if those workers who are released can be effectively employed elsewhere, then this represents a net gain for all concerned. However, it is a mistake to assume that the indiscriminate movement of labour from one industry to another is automatically a good thing, just because the industry which they leave can manage to get along without them. There is a difference between an industry planning to reorganise its methods and scales of production so that it can produce the same amount, or more, from fewer workers, and an industry which loses manpower without any control over numbers and types of workers who leave and then tries to adjust itself to achieving the same production with the labour that remains. It is this latter which has been happening in agriculture, particularly in the post-war years.

In considering the implications of the agricultural manpower trends of the past, two factors have to be borne in mind. The first is the effect of the drift on the composition of the labout force which remains. The second is that a substantial part of the manpower of the industry is supplied not by hired workers but by employers and the self-employed.

The full impact of the rate at which people have been leaving agriculture has to some extent been masked by the fact that farming has, at least until the last three or four years, had more than its fair share of school-leavers taking agricultural employment as their first job. This factor now appears to be changing (see Table 1 and Table 2). The fall in the number of new entrants is causing concern in some areas. Unfortunately not enough is yet known to assess the significance of the trend. Is it merely a reflection of the heavy decline in the total agricultural labour force? Is there a significant number of new entrants who come into the industry over the age of 17? What should be the level of intake of school leavers to sustain a labour force of a given size? Until we can answer these questions we cannot plan for the future as well we should.

* The views expressed here are personal and do not necessarily represent those of any organisation with which the author is associated.

TABLE 1

NUMBER OF YOUNG ENTRANTS AGED 15–17 TO AGRICULTURE

		Boys	*Girls*	*Total*
Total				
	1960	19,402	2,571	21,973
	1961	19,045	2,587	21,632
	1962	21,536	2,784	24,320
	1963	19,325	2,697	22,022
	1964	17,589	2,454	20,043
	1965	15,046	2,136	17,182
	1966	13,240	1,927	15,167
	1967	12,870	1,792	14,662
	1968	12,366	1,691	14,057
As % of total young entrants to employment				
	1960	6·8	1·0	4·0
	1961	6·3	0·9	3·7
	1962	6·4	0·9	3·7
	1963	6·4	1·0	3·8
	1964	5·6	0·8	3·3
	1965	5·2	0·8	3·1
	1966	4·9	0·8	2·9
	1967	5·1	0·8	3·0
	1968	4·8	0·7	2·9

Source: D.E.P. statistics.

Another effect of the way in which workers have been leaving the industry is shown by the variations, between one region and another, of the different age groups that make up the labour force (see Table 3). It is only since 1967 that this type of breakdown of the labour force has been available and it is therefore too early to start talking about trends—although the change between 1967 and 1968 is set out in Table 3d. It will also be seen from Table 3c that the Eastern and N.E. Regions have a relatively low proportion of young workers and a correspondingly high proportion of older workers. Between 1967 and 1968 there was a total decline of 15,000 in the number of workers; 5,800 of these were aged 45–64, 2,700 aged 35–44, 1,700 aged 25–34, 600 aged 20–24. Numbers aged 18–19 fell by no less than 2,100, and those under 18 by 1,500. The oldest group, those 65 and over, fell by 600. These changes are summed up in Table 3d, which shows that whilst most regions followed the same general trends there were some marked differences between regions in the size of the changes, There was a particularly sharp drop in the proportion of

workers under 20 in the West Midland region, and above average increases in the middle age group, 20–34, in the South Western, Northern and West Midland regions. The drop in the 45–64 age group was most marked in the South Western region.

TABLE 2

REGIONAL ANALYSIS OF BOYS AND GIRLS ENTERING AGRICULTURE AND OF BOYS BEGINNING APPRENTICESHIPS IN 1967 and 1968

Region	*Total New Entrants*			*% of Total for region*		*Apprentice-ships*
	Boys	*Girls*	*Total*	*Boys*	*Girls*	*Boys*
	1967					
London and South Eastern	1,034	215	1,249	2·4	0·5	110
Eastern and Southern ..	2,184	322	2,506	6·6	1·1	241
South Western	1,630	302	1,932	10·0	1·9	84
Midlands	2,265	318	2,583	5·1	0·8	280
Yorks and Humberside ..	1,234	161	1,395	5·1	0·7	260
North Western	1,077	150	1,227	3·2	0·5	211
Northern	1,133	97	1,230	6·4	0·6	138
Scotland	1,407	122	1,529	5·0	0·5	147
Wales	906	105	1,011	6·9	0·9	40
Great Britain	12,870	1,792	14,662	5·1	0·7	1,511
	Total New Entrants			*% of Total for region*		*Apprentice-ships*
	Boys	*Girls*	*Total*	*Boys*	*Girls*	*Boys*
	1968					
London and South Eastern	1,017	195	1,212	2·4	0·4	152
Eastern and Southern ..	2,134	299	2,433	6·3	1·0	281
South Western	1,610	263	1,873	9·8	1·7	95
Midlands	2,188	305	2,493	4·9	0·8	307
Yorks and Humberside ..	1,161	150	1,311	4·6	0·7	249
North Western	1,026	148	1,174	3·0	0·5	151
Northern	1,037	122	1,159	5·8	0·7	52
Scotland	1,333	116	1,449	4·7	0·4	121
Wales	860	93	953	6·3	0·8	27
Great Britain	12,366	1,691	14,057	4·8	0·7	1,435

Source: D.E.P. statistics. Regions are those used by D.E.P.

TABLE 3a

REGULAR MALE WHOLE TIME WORKERS, JUNE 1968
ENGLAND AND WALES
AGE AND REGION—THOUSANDS

Region	*Under* 18	18–19	20–24	25–34	35–44	45–64	65 & *over*	*Total*
Eastern	2·7	2·3	5·6	10·2	12·7	22·0	1·8	57·3
South Eastern..	2·3	2·1	4·3	7·9	9·1	13·7	1·4	40·8
East Midland	2·2	1·6	3·5	5·2	5·8	7·3	0·6	26·2
West Midland	2·4	2·0	4·3	5·9	5·3	7·1	0·7	27·7
South Western	2·9	2·4	5·3	7·6	7·1	9·9	0·8	35·9
Northern	2·0	1·5	3·0	3·9	3·5	4·4	0·3	18·6
Yorks and Lancs	2·6	2·0	3·7	4·6	3·8	5·2	0·4	22·4
Wales	1·5	1·3	2·7	3·2	2·4	2·8	0·4	14·2
England and Wales	18·5	15·1	32·4	48·5	49·7	72·5	6·4	243·1

TABLE 3b

REGULAR MALE WHOLE TIME WORKERS, JUNE 1968
ENGLAND AND WALES
PERCENTAGE OF EACH AGE GROUP IN EACH REGION

Region	*Under* 18	18–19	20–24	25–34	35–44	45–64	65 & *over*	*Total*
Eastern	14·6	15·4	17·2	21·2	25·6	30·3	27·7	23·5
South Eastern..	12·2	13·6	13·4	16·2	18·4	18·9	21·7	16·7
East Midland	11·6	10·9	10·8	10·7	11·6	10·1	9·8	10·8
West Midland	13·1	13·0	13·3	12·0	10·7	9·8	10·6	11·4
South Western	15·6	16·0	16·4	15·6	14·2	13·7	12·6	14·8
Northern	10·5	9·6	9·3	8·1	7·1	6·1	4·8	7·7
Yorks and Lancs	14·1	13·0	11·4	9·6	7·6	7·2	7·1	9·2
Wales	8·3	8·5	8·2	6·6	4·8	3·9	5·7	5·9
England and Wales	100	100	100	100	100	100	100	100

Source: N.E.D.O. (based on M.A.F.F. census returns).

No information is available on the breakdown of the various types of workers by age and by regions or county. For all we know every pigman in the N.E. could be reaching retirement age in the next five years.

TABLE 3c

REGULAR MALE WHOLE TIME WORKERS, JUNE 1968
ENGLAND AND WALES
PERCENTAGE OF WORKERS IN EACH REGION
IN EACH AGE GROUP

Region	*Under* 18	18–19	20–24	25–34	35–44	45–64	65 & *over*	*Total*
Eastern	4·7	4·0	9·7	17·9	22·2	38·4	3·1	100
South Eastern..	5·5	4·9	10·6	19·3	23·4	33·8	3·4	100
East Midland	8·2	6·2	13·4	19·8	22·0	28·0	2·4	100
West Midland	8·8	7·1	15·6	21·1	19·2	25·7	2·5	100
South Western	8·0	6·7	14·8	21·1	19·6	27·6	2·2	100
Northern	10·5	8·0	16·2	21·1	18·9	23·7	1·6	100
Yorks and Lancs	11·6	8·9	16·5	20·6	17·0	23·4	2·0	100
Wales	10·9	9·1	18·6	22·5	16·7	19·7	2·5	100
England and Wales	7·6	6·2	13·3	22·0	20·4	29·9	2·6	100

TABLE 3d

REGULAR MALE WHOLE TIME WORKERS, JUNE 1967 AND JUNE 1968
ENGLAND AND WALES, CHANGE IN
PERCENTAGE OF WORKERS IN EACH REGION
IN EACH AGE GROUP

Region	*Under* 18	18–19	20–24	25–34	35–44	45–64	65 & *over*
Eastern	−0·1	−0·3	+0·3	+0·6	—	−0·5	—
South Eastern..	−0·2	−0·3	+0·3	+0·6	+0·2	−0·5	−0·2
East Midland	+0·1	−0·8	+0·3	+0·6	+0·3	−0·1	−0·2
West Midland	−0·4	−0·8	+0·9	+0·4	+0·3	−0·5	—
South Western	−0·4	−0·4	+0·9	+0·7	+0·1	−0·9	—
Northern	+0·2	−0·8	+0·9	+0·5	−0·1	−0·4	−0·3
Yorks and Lancs	−0·2	−0·3	+0·7	−0·3	+0·5	−0·4	—
Wales	−0·1	−0·3	+0·2	+0·6	+0·8	−1·0	−0·2
England and Wales	−0·2	−0·5	+0·5	+0·6	+0·2	−0·5	−0·1

Source: N.E.D.O. (based on M.A.F.F. census returns).

Even if we had all the information we need in relation to the employed labour force we would still not have a complete picture about the total manpower available to the industry because we have little or no information about the part played

by farmers themselves. Indeed we do not at the present time know precisely how many farmers there are. Fortunately attempts are being made—principally by the Ministry of Agriculture, Fisheries and Food and the Economic Development Committee for Agriculture—to obtain information to fill in these gaps in knowledge.

We know already that over two thirds of all holdings do not employ any regular whole-time workers (see Table 4), a fact realised by few. The figures indicate that, although our farming may be on a larger scale than the rest of western Europe, it is nevertheless moving towards family farming—which is just the opposite of the trends on the continent. This poses the question of whether the future of farming in this country is to move towards the North American or Australasian pattern of farms that can be managed by one man, or whether it should be directed towards units which employ a number of workers.

TABLE 4

DISTRIBUTION OF WORKERS BY SIZE OF EMPLOYING UNIT
(ENGLAND AND WALES ONLY)

Number employed on holding (whole time regular males 20–64 years of age)	*% of holdings*		*% of regular men (20–64 yrs. of age)*		*% of all workers**	*% of all workers**
	1966	*1968*	*1966*	*1968*	*1966*	*1968*
0	70	67	—	—	17	15
1	15	17	21	21	19	19
2	7	7	19	19		
3	3	3	13	12	31	32
4	2	2	8	9		
5 or more	3	4	39	39	33	34

Source: Derived from M.A.F.F. June census figures.

* Includes Regular Whole-time, Regular Part-time and Seasonal/Casual Workers.
Note: All figures are rounded.

If the answer to this question were sought simply in terms of the prospects for new entrants most would regard the second alternative as the better because this is the way in which a promotion ladder can be developed. The capital costs of establishing and running a farming unit in this country are not likely to fall, and therefore the one-man pattern would mean that there would be no steps in between starting life as a farm worker and becoming an entrepreneur, introducing a deterrent to a person entering agriculture, unless he had the prospect of inheriting a farm.

However, whatever one's views on this aspect, there is unlikely to be any argument about the fact that the farming units of the future will be larger. The question arising from this is whether the present system of land ownership will allow optimum developments in this direction. Today about 50 per cent of our acres and about 50 per cent of our holdings are owner-occupied. The majority of the big estates have disappeared. Although many would rejoice at a lot of the things which have disappeared with the break up of those landed estates, the process has also resulted in our losing one important agricultural feature—that of estate management. On a properly managed large estate the farm boundaries were adjusted so that the individual units remained viable within the farming economics of the day. This is no longer possible, but the changes in farming economics are more rapid today, so the need for boundary changes is even greater. Despite the changes in ownership that are constantly taking place and the significant decline that is now becoming apparent in the number of holdings, the fact remains that the majority of farm boundaries are very little different to those which were established in the 1830's.

That there is a need for a material change in this respect is emphasised by the production figures in Table 5, from which it can be seen that 75 per cent of the output comes from 25 per cent of the holdings, and 70 per cent of the acres. The basis of classifying the holdings is on standard man-days, which is not exactly the same as relating it to acreage, but the average acreage figures show that there is a strong relationship between size of farm, size of employing unit and effective production. Government now recognises this problem of developing more viable

TABLE 5

NUMBERS, SIZE GROUPS AND OUTPUT OF FARMS

Size Group	*Number*	*% of all holdings*	*Average acreage*	*% of total acreage*	*% of total output*	*% of all workers*
Large .. .. (4 or more men)	40,000	10	300	40	50	55
Medium .. (3–4 men)	65,000	15	130	30	25	25
Small .. .. (2–3 men)	95,000*	25	60	20	20	
Very small .. (1–2 men)	200,000*	50	16	10	8	
	400,000					

* About 180,000 of these 295,000 holdings are 'part-time' holdings.

Derived from 'The Structure of Agriculture' H.M.S.O. 1966. The estimates of the men required (which include the employers' labour) are based on the number of standard man days required to do the work on the farm. 275 smd's are taken as the equivalent of one man's work for a year. The average size of farms in England and Wales is 85 acres and only 5 per cent of all farms are over 300 acres.

units and the amalgamation grants and the Rural Development Boards are tentative steps in this direction. It is a matter of judgement whether these measures will prove sufficiently effective, or whether alternatives will have to be explored, for example an extension of public ownership of land. This type of move would not only facilitate boundary changes, but would also release substantial capital for farm development which many farmers at present have 'tied up' in land.

The reason for this digression from considering manpower in its more conventional sense is to emphasise that consideration of the labour supply of the future should not be confined to looking at the employed labour force only. A reduced manpower requirement in the years ahead should not be viewed simply from the point of view of reducing the number of farm workers, but also of fewer farmers. A strong argument can be made out that if there had been the same rate of reduction in the number of farmers in post-war years as there has been in the number of workers, farming would have been more viable, capital and manpower would have been better used, and profits and wages per head could have been considerably improved.

In looking to the future assumptions have to be made about the size and shape of farming. Here it will be assumed that the scale of production will follow the pattern outlined by the Economic Development Committee (i.e. a further expansion of £345m. in gross output by 1972–3); that there will be some selective expansion beyond that point; that physical productivity will continue to outstrip land losses to other uses; and that developments in the size of farming units will progressively reduce the 200,000 farms that today need two men or less to run them and which in total produce less than 10 per cent of our output.

In considering manpower trends to 1972–3 the E.D.C. came to the conclusion that the net manpower losses in the five years could be anything from 100,000 to 150,000. If the remaining labour force was to cope with the production targets, there would have to be a rate of improved productivity of between $7\frac{1}{2}$ and $9\frac{1}{2}$ per cent a year, which compared with an average of 6 per cent in the past ten years. They concluded that this was unlikely to be attainable and that therefore steps might well have to be taken to slow down the rate of the loss. The Select Committee on Agriculture, reporting earlier this year, came to a similar conclusion, but were also specific. They considered that the rate of loss should be cut by a half and that this could only be achieved by a substantial increase in wages. Many observers would accept this last conclusion, but to deal with wages as an isolated issue will not be enough to meet the requirements of the 1980's.

A positive overall manpower policy for the industry must be adopted on a national basis and effectively operated at the individual farm level. Any manpower policy starts with the conditions of employment and since—as the E.D.C. Report and the Reports of the Select Committee and of the National Board for Prices and Incomes on farm wages have pointed out—there is a direct relationship between the

rate of loss of workers in agriculture and the levels of earnings in agriculture and industry generally. This means we have to achieve wage packets in agriculture which are on a par with those of industry generally.

This involves an increase in the minimum wage and a reduction in the number of hours worked for that basic wage—at present 44 as compared with an average of 40 in industry. Then there would be the achievement of a five-day week—already being worked on a number of well run farms. Finally there is the matter of a wages structure. It is now eight years since proposals for such a structure were put before the Wages Board by the workers' side; negotiations on the matter have reached a critical stage, but the outcome is long overdue in the best interests of the industry. Another important issue is the question of an overall agreement on the payment of wages during sickness.

Even were these matters dealt with overnight, this does not constitute a manpower policy that is sufficient. The whole attitude of the industry needs to be hauled up-to-date. Industrial relations in agriculture are usually considered to be good; in terms of personal relationships this is, in general, very true, but it is in spite of the surrounding conditions, and not as a result of them.

Employers can still give notice to their workers when they are off sick in order to avoid some theoretical possible legal liability. Half the workers are still without the contract of employment letter required under the Contracts of Employment Act. The majority of workers are not provided with a timesheet on which to state their entitlement for wages for the week. Thousands of workers are not provided with a proper statement showing how their gross wage has been calculated and what are the deductions which have been made from that wage. Employers can enforce the eviction of workers from their homes without there first being alternative accommodation for them to move into. This list of shortcomings is an indictment of agriculture—the industry which takes pride in claiming that it is the largest single industry in the country.

To overcome the shortcomings a twofold approach has to be adopted. At national level, the approach of employers has to be positive instead of as at present, apparently moving only as far as they are absolutely forced to do by current circumstances. At farm level a positive, expansive approach needs to be adopted by the individual management. There is also a need to look at working conditions. On how many farms are there proper toilet and washing facilities—despite what the law may say? How many farms provide a decent mess room for those workers who have to take their meals on the farm? On how many farms do management look at safety, health and welfare matters in any other light than just doing the minimum that the law requires shall be done— and sometimes not even as much as that?

Farming has coped with a technical and technological revolution in the past twenty years. It has not only coped with it, but has exploited it with extraordinary

effectiveness. It is a wonderful record and one of which we should never cease to be proud. But there is a skeleton in the cupboard; its lack of change in its attitude to its manpower.

To remedy some of the faults listed will cost money, but unless money is spent agriculture may not have the type and quantity of labour which it will require to exploit the other advantages that have been put in the way of farm managements. It may not be a shortage of money which is impeding change, but an attitude of mind, one that dates back to the days when labour was plentiful but when nevertheless the wages bill accounted for more than half the production costs of the industry. That day has long since gone. British farming now spends more on feedingstuffs than it pays to its workers. Labour costs account for less than 20 per cent of the total production costs. And, as will be seen from Table 6, the amount by which the labour bill has increased in the past years, both in money terms and in percentage terms, is dwarfed by the increases in the amounts which management has paid to the supplying industries and others. In the future the industry will need to expend much more time and effort—both collectively and individually—on holding in check its other costs of production and maximising its returns from the market; and less time and effort in resisting improvements in the workers' conditions.

TABLE 6

FARM INCOME, LABOUR COSTS, OTHER PRODUCTION COSTS AND OUTPUT

	Average 1954–5—1956–7	*1966–7*	*1967–8 (revised)*	*1968–9 (forecast)*	*Increase 1968–69 over average 1954–55—1956–57*	
					Actual	*%*
Net farm income ..	£335m	£480·5m	£516m	£477m	£122m	37
Spendable incomes (profits)	£307m	£450m	£467·5m	£422m	£115m	38
Labour costs ..	£275m	£311m	£311·5m	£312·5m	£37·5m	13·5
Other production costs	£838m	£1,204m	£1,300m	£1,361m	£523m	62
Labour costs as a % of all production costs	24·7	20·5	18·9	18·6		

Source: Based on Cmnd. 3558, and previous Price Review White Papers.

Agriculture would do well to absorb the lesson of the successful industries of today—namely that an industry with a high wage policy (as opposed to high

labour costs) and a progressive approach to its employees is the one which makes the profits. And profits, after all, are what most people are in business for, whether that business be manufacturing chemicals or producing food. All these things, then, are pre-requisites for ensuring that the industry has the manpower that it requires.

Another important and related aspect of any manpower policy is the training and education that will be required to equip that manpower to meet the needs of the future. For the school-leaver the extent to which the industry is prepared to equip him for his chosen career will be as material in helping him make up his mind as his financial prospects and his physical conditions of work.

In one respect agriculture has been fortunate in the matter of further education, because for many years it has enjoyed the services of a number of mono-technic establishments—formerly known as Farm Institutes and now known as Agricultural Colleges, but they have only been able to touch the fringe of the requirements of the industry and were for many years attended in the main by one section of the industry—farmers' sons. Fortunately that position is now changing and so is the content and purpose of the courses which they run. Some years ago a small and enthusiastic body of men from all sections of the industry started an apprenticeship scheme, but its numbers are still only a very small proportion of the total new entrants to the industry as Table 2 reveals. In the last ten years the number of young people taking day release and block release courses has increased, but the proportion is still pitifully small in relation to the number of young workers in other industries who are taking similar courses. There is a wealth of courses and examinations which are available to those in agriculture, but many of them, although excellent in themselves, are ad hoc arrangements devised by a small group with a special purpose in mind and without there being any effective overall co-ordination.

The requirements of the future demand a co-ordinated approach by the industry as a whole, so that the overall pattern can be seen at once and the new entrant can see from the outset what he needs to undertake for his specific interests. Perhaps the simplest, some would say too simple, way of envisaging the training and education requirements of the future is to see it as a pyramid, built in layers. The broad base—and the deepest layer—would represent the courses which need to be available to every new entrant to equip him with the basic skills required to become an effective operative—using that word in its normally accepted industrial sense. The next layer, still fairly broad and also quite deep, would provide training to equip the skilled craftsman of the future. Above that a narrower layer, but because of the nature of the industry still fairly deep, which will cater for the supervisory workers and the technicians. Still higher a layer to cater for managers (including future farmers in their own right) and at the apex the layer to cater for the advisory workers and the technologists.

The whole will have to be designed so that the young entrant with the will and the aptitude can progress through each layer to the top, but it will also need to be sufficiently flexible to allow some types of new entrants to start at one of the intermediate layers if he has the right qualifications. It is difficult, having regard to the diversity of type and size of farming in this country, to draw hard and fast lines between the layers of the pyramid. The essential theme is that training and education should be seen as a whole and not as individual unrelated sections. Training and further education should be available and it will have to become the accepted procedure that every newcomer is expected to have time off—without loss of pay—for a certain amount of both. The ideal would be for every new entrant to take training equivalent to that at present provided for in the apprenticeship scheme. Even if this is not attainable, a certain standard of training, not necessarily allied to any test or certificate, should become an accepted minimum. We should also aim at the ideal of having pre-entry, or immediate post-entry, induction courses to bring the new entrant face to face with the realities of farm work before he starts on his career. The difficulties of organising this type of course for agriculture are acknowledged, but they have been overcome in certain areas and we should learn from their example. Beyond, or concurrent with, this early stage lies the apprenticeship scheme as it is now being developed. Whatever finally emerges will have to have a fair degree of flexibility. The important thing is that the standards required are sufficiently high and that they bear a direct relevance to the needs of today and the future—not to the traditions of the past.

Training beyond the craftsman level will normally be undertaken through, or in conjunction with, a full time course at an agricultural college and may be of twelve months duration or longer, according to the aims and requirements of the student. This should equip him to become the technician or supervisory worker of the future. Beyond this stage lies special courses at Colleges and Universities for the supervisors, managers and technologists. Ideally we should be able to so organise these activities in relation to one another so that a worker can enjoy an 'american sandwich' training—with one period of on-farm training coupled with day-release and further education, another period of full-time education and training, followed by a year or two back on the farm and then backed up by the further necessary specialist courses to take him up the ladder. In agriculture we need to relate theory to practice on the farm.

What has been said so far has been aimed at attaining an overall training structure and it therefore tends to be discussed in terms of the new entrant and his progress through the industry. But we need to recognise that even in the 80's many experienced workers who are on the farm today will still be working in the industry. If they are to have opportunities and be of maximum use to the industry they must have training made available to keep them up-to-date. Refresher courses

and special short courses for a specific purpose will also be a necessary part of the development of those who have the advantage of going through the formalised training ladder.

These then, stated in very broad terms, are the physical training and education requirements. How are they to be organised? In practical terms there is a need to develop fresh methods. Already we are beginning to see a move towards on-farm training, where skilled men who have been trained how to instruct, are now instructing groups of workers on the farms where they work. Groups are developing, where a number of workers from different farms are going to one farm once a week or at specified times to receive instruction in particular jobs. The idea of a group of farmers getting together to plan organised on-farm training for all their workers is just getting under way. A move is on foot to use an itinerant instructor to cover a wide area of scattered small farms. There also seems promise in the idea of building training programmes in sections, by first breaking down each of the decisions and operations in a complete production process, for example in growing corn, from preparing the field to harvesting the crop. By determining the training required for each decision or operation it is possible to construct a total training for the individual, according to his responsibilities, on a particular farm.

All these things are in the formative stage and, incidentally, are all developments fostered by the Training Board. They will have to be developed still further and, if the training load is to be effectively carried, some will have to become standard practice. If these developments are to be properly integrated a good deal of organisation is going to be required. One has to recognise that in practical terms training and education are inseparable, but that, whether we like it or not, in terms of legal responsibility for their financing, they are separated. Education is the responsibility of the LEA's and the Universities, training the responsibility of the industry. This is not just the position for agriculture, it is the position for every industry. Planning for the future therefore calls for co-operation and understanding from a number of bodies, organisations and government departments. Given goodwill, determination and a positive, enthusiastic, approach it can and does work. The skill and knowledge of those in farming in the 80's depends on it being made to work. Moreover we now have a good basis, provided it is exploited to the full. Mention has already been made of the established colleges and university departments. We now have an Industrial Training Board with powers to organise the training side. Although many of the agricultural education establishments have undertaken training in the past, this is not their basic function; nor, in the future, are they likely to be allowed to spend their own money on financing training activities. In addition we have recently had established a central committee for agricultural examinations which, for the first time, will be looking at the overall picture and which will in due course be able to mould the whole

into a progressive pattern such as is necessary within the concept of a training pyramid. All the interested parties are represented on this committee and it should therefore be able to produce results which have the greatest possible degree of common agreement.

In planning for the future the industry has to recognise that the cost of training is its own responsibility—as it is with every other industry in the country. And that, whilst there is an obvious need to carry out training as economically as possible, the industry will not meet the needs of the 80's with the sort of money that is being argued about today. The Engineering Industry Training Board has a budget of over £80m. In agriculture we are still quibbling about a training budget of little over £1m. It is not suggested that agriculture should think in terms of a training cost as high as that for engineering, but it is pertinent to point out that the present training budget for agriculture represents less than 0·1% of the £2,000m turnover of the industry. Any other industry would find such a relationship laughable—and would very quickly demonstrate that it was also uneconomic. They know that training pays—both for them and for their employees.

At one time it was possible to argue that without land there would be no agriculture. Some who look to the 80's may now hold that this is no longer true. This paper has, however, assumed that the mode of producing food in this country will change but little, although some methods may change beyond our present vision. Whatever the system it will need men. Certainly fewer than there are today, but because they are fewer, whether they be managers, farmers, self-employed or employees, they will be responsible for greater value per head. They will need greater skill and more knowledge. If those men are to be there, whatever their role, they will have to be adequately equipped and adequately rewarded. Today when management embarks on a new technique it costs it and designs a system to meet those costs. As an industry we must cost out the technique of an overall manpower and training policy. And design our farming to meet those costs.

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