

# Foresight

Making the future work for you

## **Agriculture in the UK – its Role and Challenge**

A Discussion Paper  
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Prepared for the Food Chain  
and Crops for Industry Panel  
September 2001

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# Chapter 1

## Introduction – what this report is about

This paper is intended to provoke and facilitate discussion about the future of agriculture as a commercial activity in the UK. It is written at a time of acute distress as a result of a series of farming misfortunes, BSE, food scares, an adverse shift in the value of the £ relative to the €, and most recently, the outbreak of Foot and Mouth Disease. However, the debate to which it is intended to contribute, and of which the creation of the Department for the Environment and Rural Affairs forms part, is of much longer standing.

The place of farming in developed societies is one of relative decline in economic terms. Its share of GDP declines. The number of people it employs falls. Its share of consumer expenditure contracts. It is therefore an industry under continuing economic pressure to restructure.

The changes taking place do not relate only to the role of agriculture in the market place. Whilst its economic contribution is in relative decline, it continues to be the industrial activity which determines the use of most of the land area. In that process it competes with other demands which, in affluent societies, grow in importance. The land it farms forms a backcloth to a growing tourist activity. It provides habitat in which plant and animal species of no particular value as food become increasingly significant as society demands more 'environmental goods'. Often it has to compete for road space with incomers whose work and social life lies outside the community in which they live. The houses farm workers once occupied are priced beyond their means by 'new money' earned in non-farming activities.

The position of farming in the UK and in fellow member countries of the European Union is further complicated by its past relationship with the state. In the wake of food shortages in the 1940s, agricultural policies were devised to encourage food production. In a variety of ways farmers were encouraged to produce by prices above those available in world markets. Inevitably as they responded the costs of the assets needed to farm were competed upwards. This erodes farm incomes but in an affluent world in which there is no shortage of food for rich people, the basis of this policy is contested. There is a strong pressure to bring farmers' prices closer to world prices not only by those who wish to export more to Europe but also by Europeans who resent the costs which agricultural support policies compel them to bear. Faced by this pressure to lower prices farmers in the UK find themselves with costs higher than their global competitors. In any industry the process of shedding costs is painful. For farming, an industry, which is still predominantly made up of small family businesses, it is also protracted.

Adjustment to a changing economy is inescapable. There are a number of strategies that may be adopted. These are not exclusive but in broad terms we can identify three broad

types of development. First, movement into an essentially residential mode, where the farm provides an attractive place to live but revenues from farming activity are not of primary importance to the household. Second, a switch to providing 'public goods', relying on payments by the state or local authority to supplement returns from the market and maintain patterns of farming conducive to the targets set by the political process, whether habitat, landscape or amenity for recreation. Third, a concentration on meeting market demand for farm outputs, seeking both to increase the value of what is sold and to use inputs in the most efficient manner possible so as to produce at low cost. These are essentially commercial farm businesses.

Substantial food production may still take place on farms that have become primarily places of residence. The farming involved may be of a high standard both in terms of its commercial efficiency and its environmental responsibility. However, income from farming is no longer the main basis of the family's security. When farm work conflicts with the need to pursue other objectives, the farm work is likely to be constrained. There are gradations along this route of change. Initially it may come about as full time farms become part-time. Farming becomes just one of several income streams for the farm family concerned. As external employment grows farming income is likely to represent a diminished share of total income. In other situations farms may be bought by owners who have accumulated substantial assets from other sectors of the economy and seek simply to live in the country. Such pure 'hobby farms' may also be of high technical standards but their income earning capacity is secondary to the amenity they offer their owners. Such arrangements may be transitional. Later generations may choose to move away from farming leaving the land to be absorbed into larger units. Such farms can also prove durable providing a basis for a very satisfactory lifestyle for those involved.

Paying farmers to produce 'public goods' has become an increasingly articulate aspect of policy, often referred to as the Second Pillar of the CAP. The potential opportunities for such payments can be substantial. Maintaining traditional landscapes. Paying farmers to operate in ways that secure habitats for wild plants and animals. Funding the maintenance of traditional buildings. Offering support for the provision of footpaths and bridle ways. The nature of such goods is that they cannot be bought in the market. They developed as a by-product of an economic activity for which the market will no longer pay. If they are to continue they have to be funded from another purse. Some part of this may come from the private sector through interest groups such as the National Trust, the RSPB or local conservation groups. However, an important element depends on support from national or Community funding.

As the major occupiers of land farmers are obvious suppliers of such 'public goods' and this may well represent the way forward for some existing producers. Substantial numbers of farmers are likely to rely principally on such non-market incomes. Land, especially in Upland areas, is likely to be valued chiefly for its environmental contribution. Farmers are not the only means to deliver public goods nor is the current set benefits, which arise as a

by-product of farming, necessarily that which will best meet the preferences of society in the long term. In a rich society the wish to support areas of substantial scenic or scientific interest seems likely to increase. However, it will always be in competition with other demands such as those for health, education and transport. How much land is used for this purpose and how many farmers will be supported in this way will depend on the consent of the public to foot the bill.

Both residential and environmental farming will contribute to aggregate UK farm output, however, if a significant proportion of the nation's food is to be produced at home, the main source of supply will remain farms that are run as businesses. Such businesses, like firms in other sectors, will operate within legislative frameworks relating to issues such as employment law and environmental standards but their success will depend essentially on their ability to compete in the market for food and industrial agricultural products. To do so they will necessarily be part of a chain of businesses, which process, distribute and retail products. Ultimately their success will depend on the skill of the chain as a whole and their ability to hold their place within it.

This paper is primarily concerned with the development of this 'commercial' sector. It describes the economic and political forces that have shaped its present situation. It discusses the principal pressures that are now forcing it to adjust. Economic pressure is likely to lead to a shift between the three categories as farms identified here. Many, which were once viable businesses, will have to seek alternative sources of revenue rather than remain wholly dependent upon a highly competitive market place. For these, as for those who remain wholly commercial, it is important to identify the factors that will determine the opportunities, as well as the threats, they face.

In essence this is an exercise in foresight. Not an attempt to forecast the future but to explore possibilities and to develop strategies that help the enterprises concerned to consider their own future and adapt in the most positive and profitable way possible.

## Chapter 2

# The present state of the industry

This chapter is primarily about agriculture as part of the food supply chain. It is from the sale of food that most of its revenue is derived. However, farmers are not only food producers. Many have additional sources of revenue beyond food production, in the provision of tourist facilities or through part time employment in other sectors. These other sorts of revenue have become of growing importance as prices for conventional farm products have fallen.

Farming activity makes contributions to society beyond those measured in sales of food or revenues from other sources. It plays a major part in maintaining the rural environment and within the rural community. The costs and returns involved in this area are not readily measured but they are real. As real incomes have risen in the economy these aspects of farming practice have grown in importance. They represent gains that have often arisen incidentally to the business of food production. However, as that business changes society will have to decide whether it wishes to retain them, in which case someone will have to pay for them. This is a theme that recurs later in this paper.

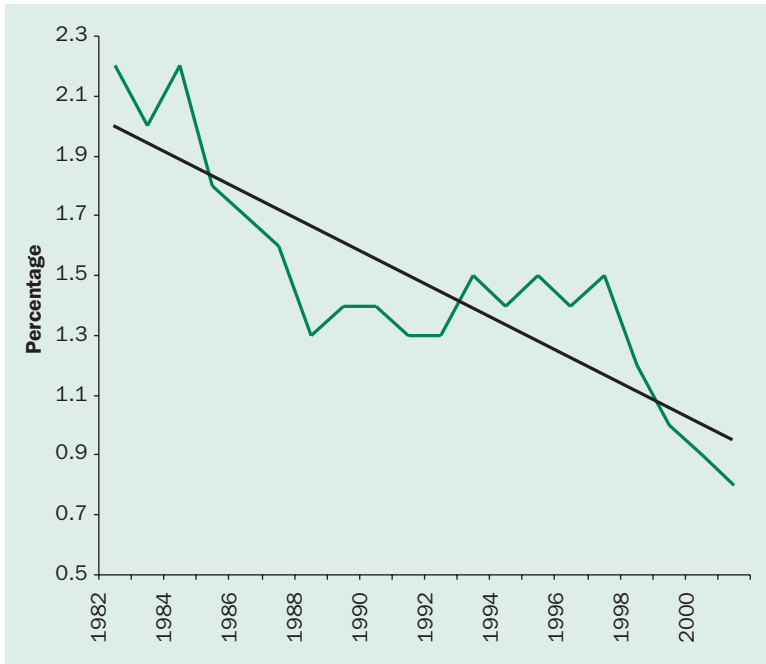
In the past five years the fortunes of farming have collapsed. Not only have incomes fallen to the lowest levels, in real terms, since the war but a series of misfortunes have undermined confidence within the industry and in the public perception of British farming. This chapter sets this decline in its economic context. It shows that the current situation is part of a much longer-term process of adjustment. The current crisis has been greatly exacerbated by an extremely wet winter season, by the continued weakness of the Euro, the overhang of BSE and by the Foot and Mouth crisis. However, the underlying economic pressure on the sector has deeper causes that will not be reversed by the passage of time. A later chapter discusses how this, together with other political developments, has led to a transformation in the relationship between farming and government.

### The Place of Agriculture in the Economy

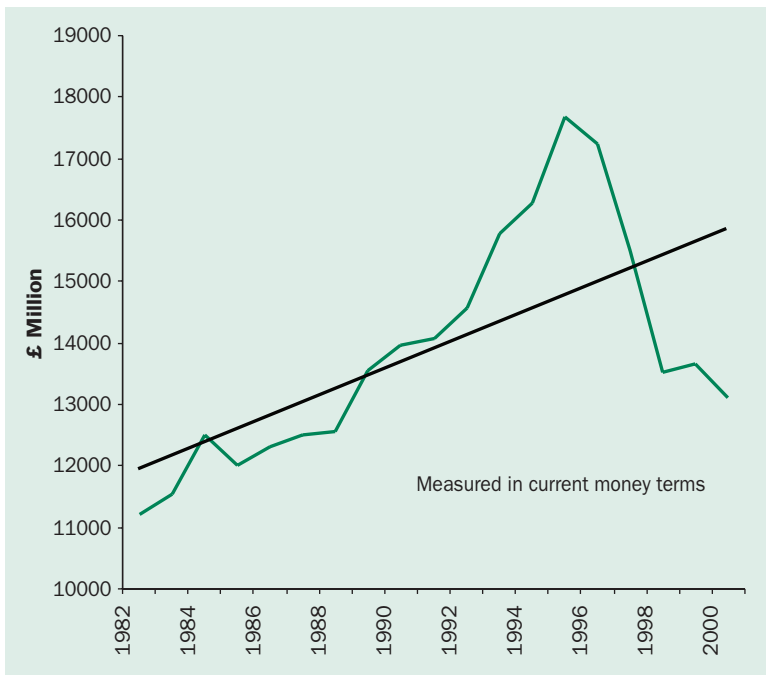
The starting point is the relative decline of farming in terms of conventional economic measurements such as GDP.

This relative decline is not due to a collapse in agricultural production but to the more rapid growth of other sectors of the economy and a downward trend in farm prices. As the diagram 1.2 overleaf shows Gross Output continued to grow until the mid 1990s. Since then falling prices and reduced cattle output as a result of BSE have meant a sharp decline. However, in current money terms the output of the industry is still larger than in the early 1980s.

**Diagram 1.1**  
**Agriculture's Contribution to GDP**

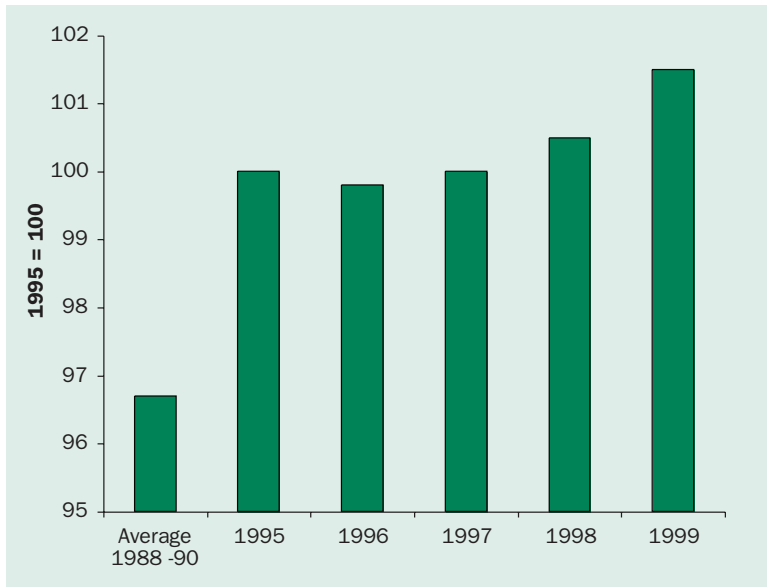


**Diagram 1.2**  
**The Gross Output of Agriculture**



Amid these fluctuating fortunes Diagram 1.3 shows that the physical output of the industry has remained remarkably robust.

**Diagram 1.3.**  
**Gross Output of Agriculture - Volume**



Consumer expenditure on food continues to grow. However, most of the growth relates to values added after the farm gate. More food is processed. Cold Chain and Cool Chain distributive systems ensure that a huge variety of fresh food is available daily in supermarkets. An increasing proportion of food is bought ready prepared rather than as raw materials to be cooked at home. Thus the share of farm revenues in total food expenditure continues to decline.

**Diagram 1.4**  
**Household Food Expenditure**

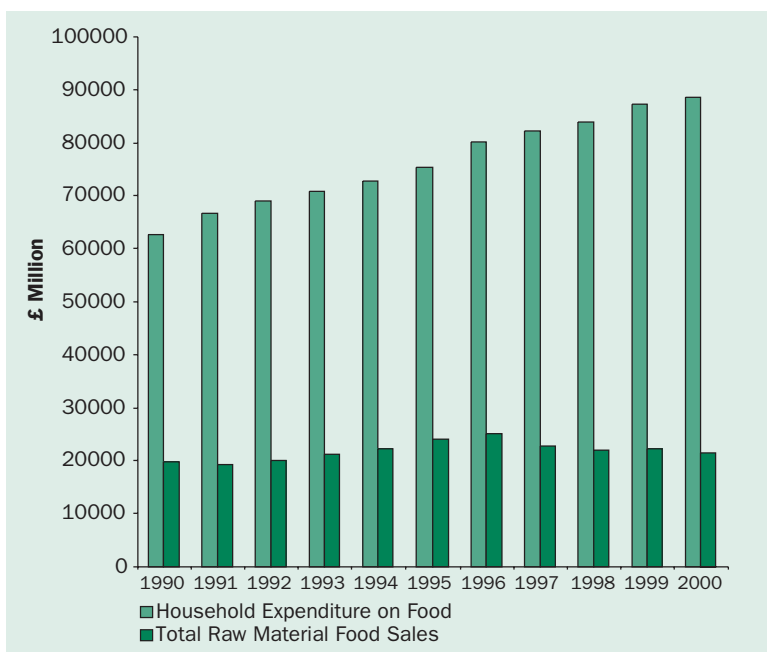
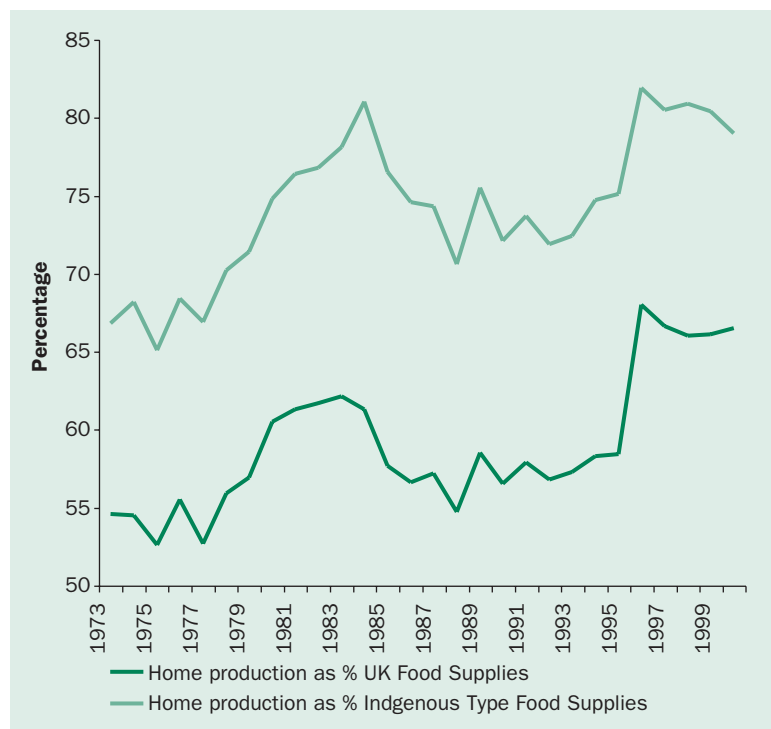


Diagram 1.4 shows the gross output of agriculture in proportion to the expenditure on food by households<sup>1</sup>. In reality this underestimates the decreasing share of farm output. Value added after the farm gate, including the catering sector which is not included here, is growing rapidly and seems likely to continue to do so as the proportion of single person households and households in which all the adult members work, increases.

Despite this UK farming remains the main source of raw material food within the UK, supplying more than 70% of the types of food that can be produced within this country. This is in marked contrast to the period before the Second World War when 70% of the UK's food was imported<sup>2</sup>. The expansion has come about as a result of marked increase in productivity and despite a substantial reduction in the number of people employed in the industry. Whilst increased production was initiated in the war time period and fostered in the years of shortage following the war, as Diagram 1.5 shows it has continued throughout the period since the UK joined the European Union.

**Diagram 1.5**  
Share of Home Production in Food supplies



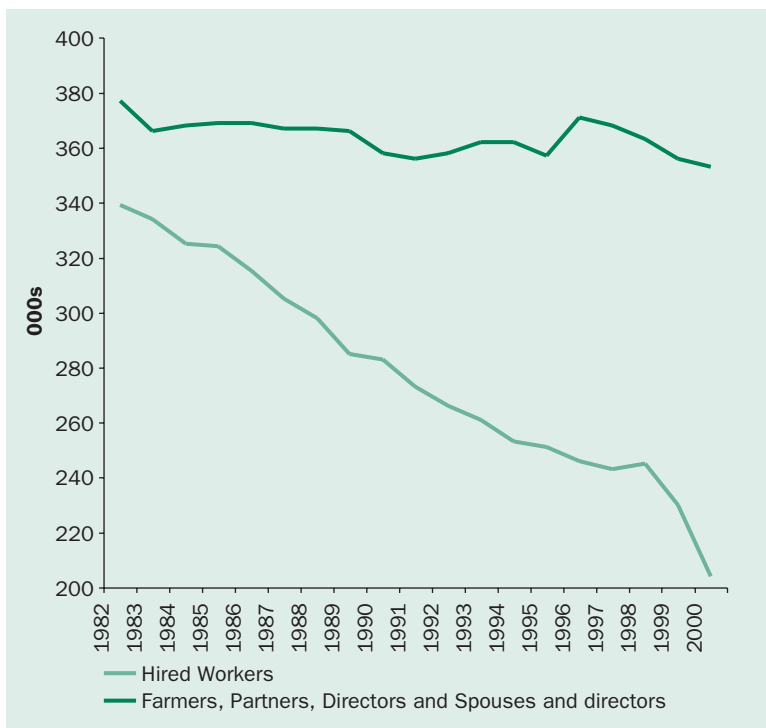
1 This diagram compares total disappearance of raw material food (home production + imports - exports) with total household expenditure on food.

2 Keith A H Murray Agriculture, HMSO and Longmans Green & Co 1955

In common with every industry, farming makes use of resources that are open to competition from other sectors. The rising level of real wages means that this industry has been under pressure to substitute capital for labour. It has done so with great success, continuing to increase production despite a very large decline in the number of people engaged in the sector. As Diagram 1.6 demonstrates the hired labour force has almost halved since 1982. In contrast the number of family workers has been sustained. However, a more careful look at this information shows some important changes in the way in which labour is used on the farm.

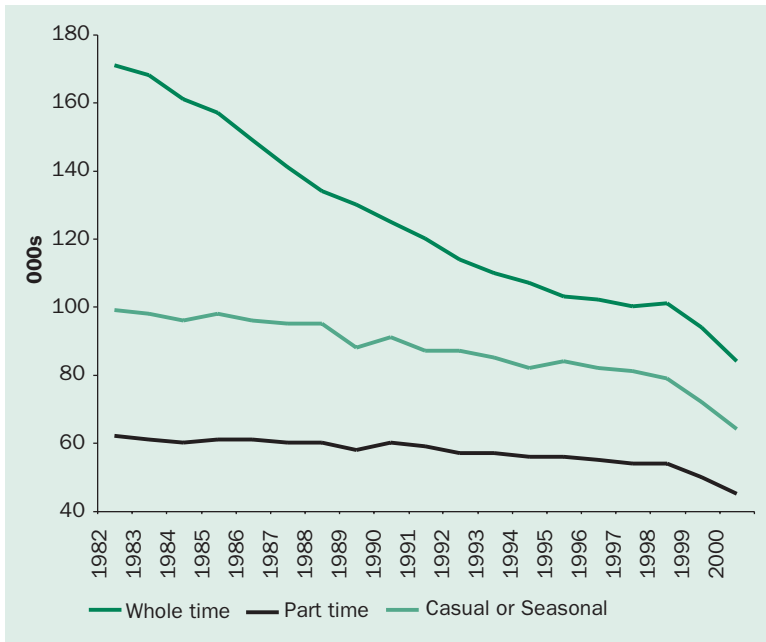
An important element in this decline is the replacement of skilled manual farm workers by machines and less skilled seasonal and casual labour. Correspondingly the responsibilities of the remaining regular labour force have increased and the skills required of them multiplied.

**Diagram 1.6**  
**Agricultural Labour force**



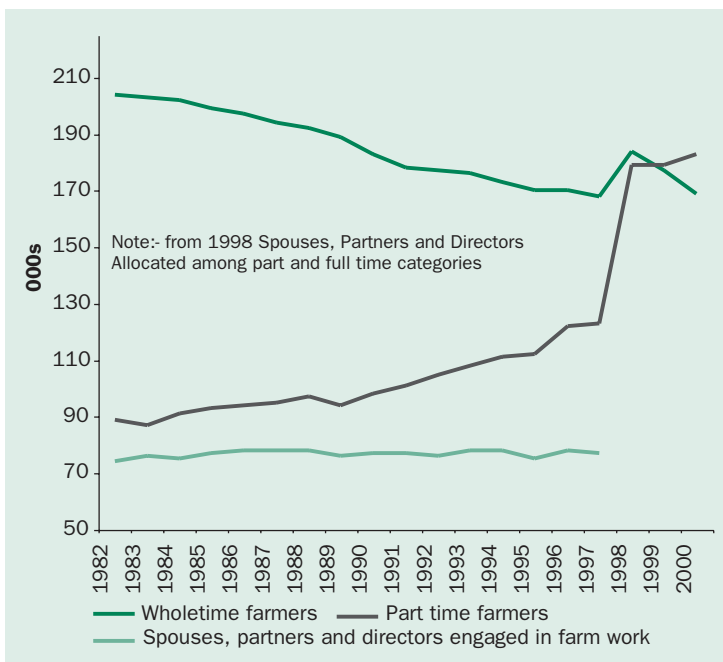
Most of the decline that has taken place in the hired labour force has been amongst full time employees. Since 1998 there has been a parallel rate of decline in the number of part time and casual workers but they remain a much larger proportion of the labour force than in the early 1980s.

**Diagram 1.7**  
**The Changing Hired Labour Force**



The relatively small decline in the total number of farmers and family workers conceals a much more radical shift in the use of labour in farming. Diagram 1.8 shows that there has been a marked increase in the number of part time farmers, partners and directors who contribute to the labour force and a decline in the number of full time farmers.

**Diagram 1.8**  
**Self Employed labour in Agriculture**



The diagrams show that there has been a substantial and continued reduction in the use of labour on farms. The most recent data suggest that this has accelerated in response to the acute financial pressures under which many farmers find themselves.

Assessment of the use of capital in farming is complicated by the dominant influence of land. Land prices reflect many other factors as well as the profitability of farming. Taxation systems favour the reinvestment of revenues from land sold for development back into farming. Land can provide a means of reducing the burden of inheritance taxes between generations. Quite apart from the earning capacity of the land in farming, many farms offer attractive dwelling places with large farmhouses, room to keep horses, a level of privacy and peace unattainable in the suburbs and the opportunity to enjoy the countryside. Less tangibly but not necessarily less important land is still regarded as a good asset to hold, something which will provide status as well as a relatively secure long term asset.

These factors complicate the interpretation of data relating to asset values in farming. Diagram 1.9 shows that asset values on UK farms have continued to rise and that most of this value is made up of land and buildings. The difference between this value and that of total assets represents other sorts of capital actually applied in the business. This, too, has increased as the industry expanded during the 1990s. However, the series is incomplete for the most recent years during which the economic downturn in farming has been most acute.

**Diagram 1.9**  
**The Assets of UK Farms**

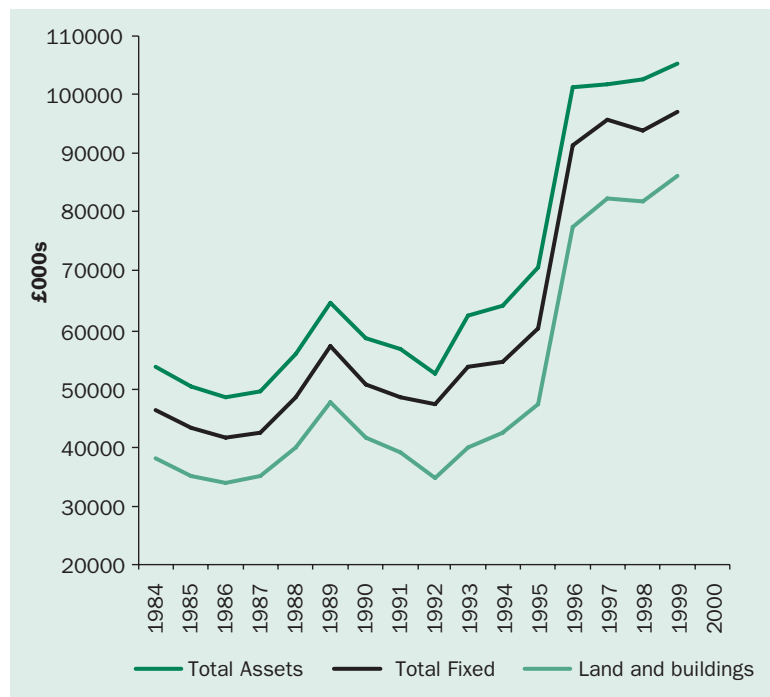
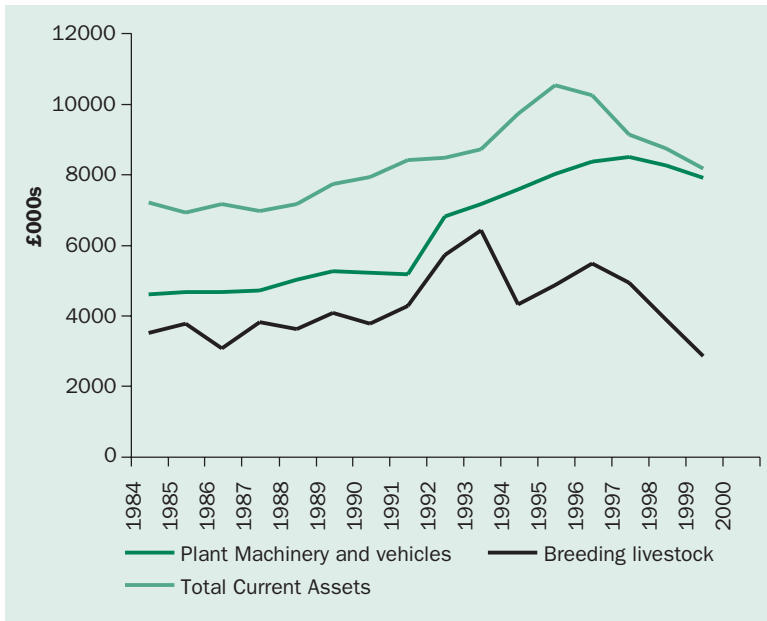


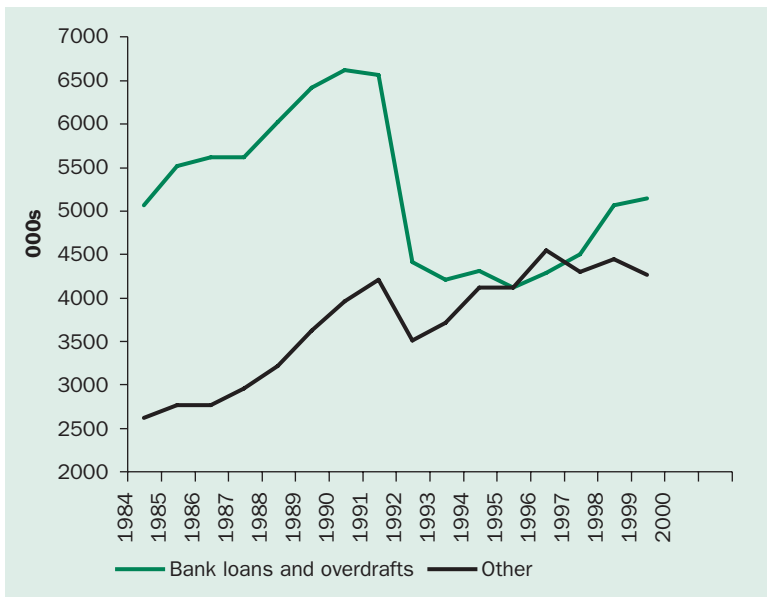
Diagram 1.10 divides the value of total current assets (this excludes land and buildings) between plant machinery and vehicles and breeding livestock. Here the picture is rather clearer. During the prosperous years of the mid nineties substantial investment took place in both livestock and machinery. The livestock investment declined under the pressure of BSE but the arable sector continued to add to its investment in machinery right up to 1998. Thereafter both decline.

**Diagram 1.10**  
**Assets other than Land**



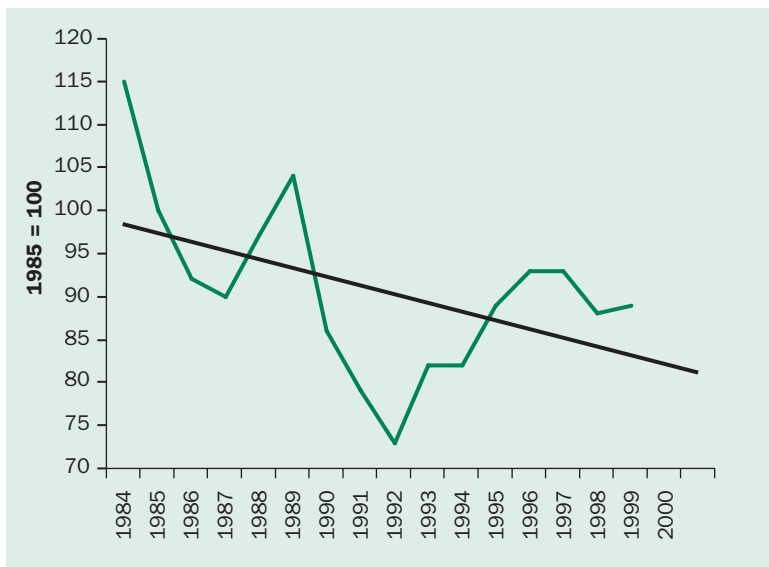
Although prosperous years encourage investment they do not generate all the resources needed. For new farmers and for farmers wishing to acquire additional land, borrowing is essential. Banks have been a major source of funds but sources such as merchant businesses also provide credit, usually on a short-term basis. In some situations capital may be injected by companies who wish to secure supplies from a particular farm. Diagram 1.11 shows how banks reduced their lending to farms in the early nineties but saw it gradually increase again in the more prosperous middle years. It also shows that the proportion of borrowing from other sources than banks increased during the final two decades of the twentieth century.

**Diagram 1.11**  
**Banks and other lending to Farms**



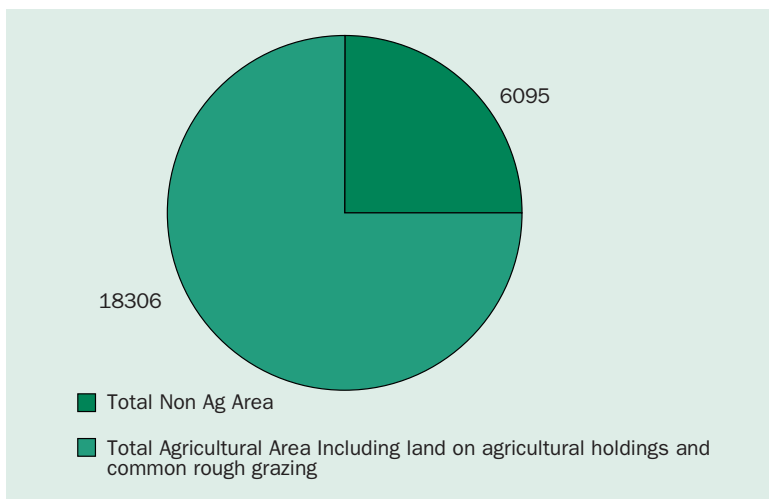
Despite the investment that took place in the mid-nineteen nineties, the real value of farming assets remained in long term decline over this period. Diagram 1.12 shows the Net Worth of the industry in real terms, that is when liabilities are deducted from assets and the figures corrected to allow for inflation. It is important to stress that the industry still has a very positive capital situation, with assets far in excess of liabilities. However, the signs of pressure are clear. In terms of its share of the nation's capital agriculture is in decline. Measured in money terms it has become less important. As will become clear in the next chapter this decline in share of GDP, of employment and of national capital has implications for policy.

**Diagram 1.12**  
Net Worth in Real Terms



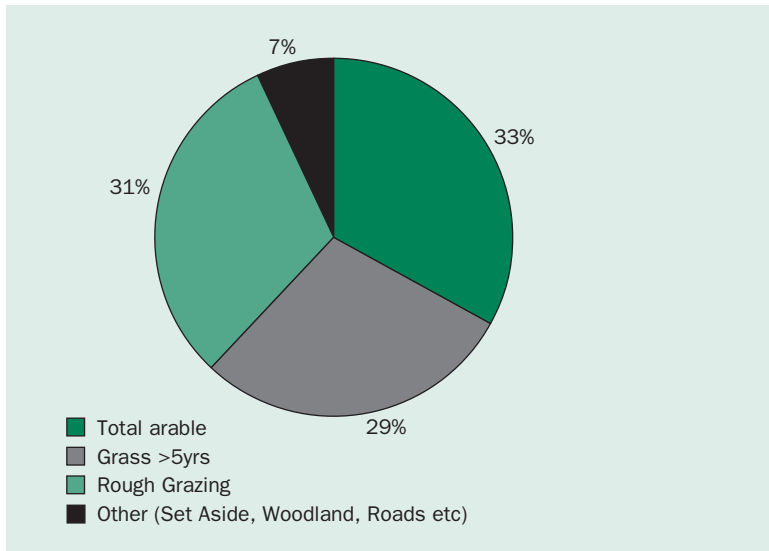
This decline in financial terms is not matched by a decline in agriculture's role in land use. It uses more land in the UK than any other activity. Diagram 1.13 makes this clear.

**Diagram 1.13**  
The use of land in the UK 000 ha



Most of this area is under grass. Only the tillage area, which includes arable crops and temporary grass, is cultivated. The remaining area is predominantly grass or rough grazing.

**Diagram 1.14**  
**Agricultural Land Use**



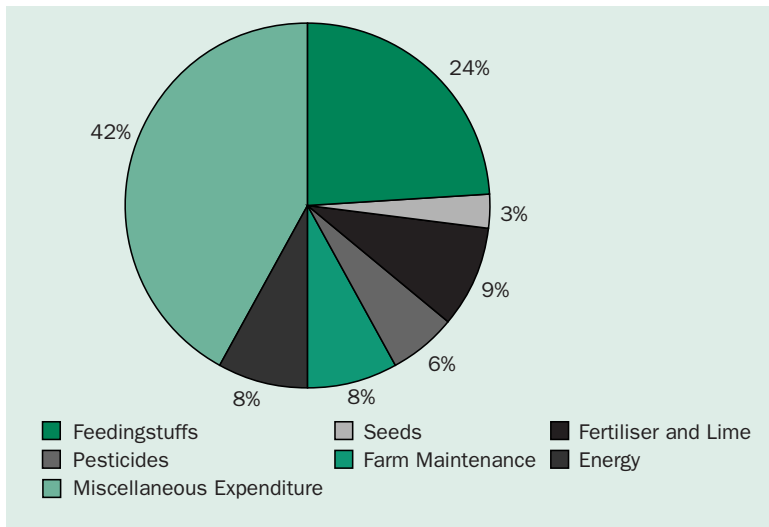
Quite clearly any suggestion that modern UK agriculture is simply an area of featureless crop production is most misleading. Most of the area is under grass and a substantial proportion of this unimproved rough grazing. However, farming activity dominates the appearance of the landscape. This raises a number of issues beyond food production and the financial costs of production that will be discussed in the next chapter.

## **Agriculture in the Food Chain**

Modern communities have moved a long way from self-sufficiency. The days when farms produced their own energy, seed and fertiliser and consumed the bulk of their output within the farm household are long past. Farming has become one link in a complex chain of businesses that supply farm inputs, transport, process and distribute farm outputs and manufacture a vast variety of edible products. This chain reaches abroad for some of its requirements and markets. It extends to consumers not only simply through retail food outlets but also through a wide range of catering businesses. The farm business is an essential part of this chain and, as such, is dependent upon the functioning of the whole system.

Diagram 1.15 shows how farming depends upon its input industries. The inputs these businesses supply are an important avenue through which new technology feeds into agricultural production. The businesses involved include chemical companies, specialist seed breeders, machinery manufacturers and the providers of fuel.

**Diagram 1.15**  
**Supply Industry Inputs**



**Diagram 1.16**  
**Miscellaneous Inputs Percentage**

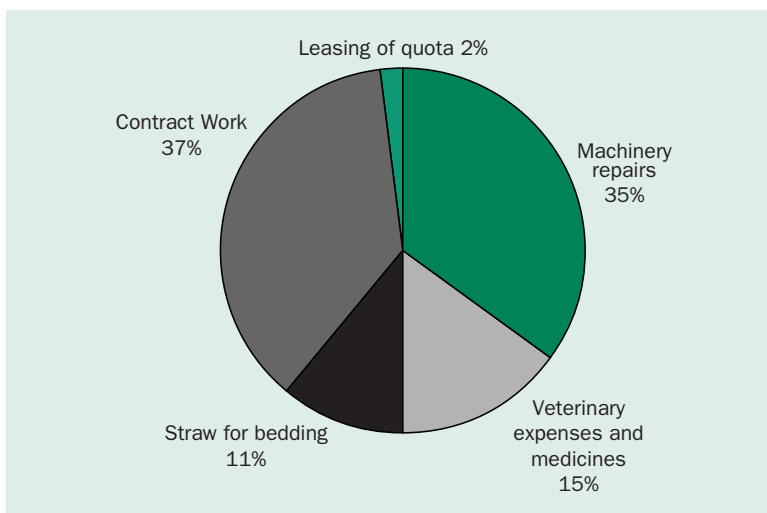
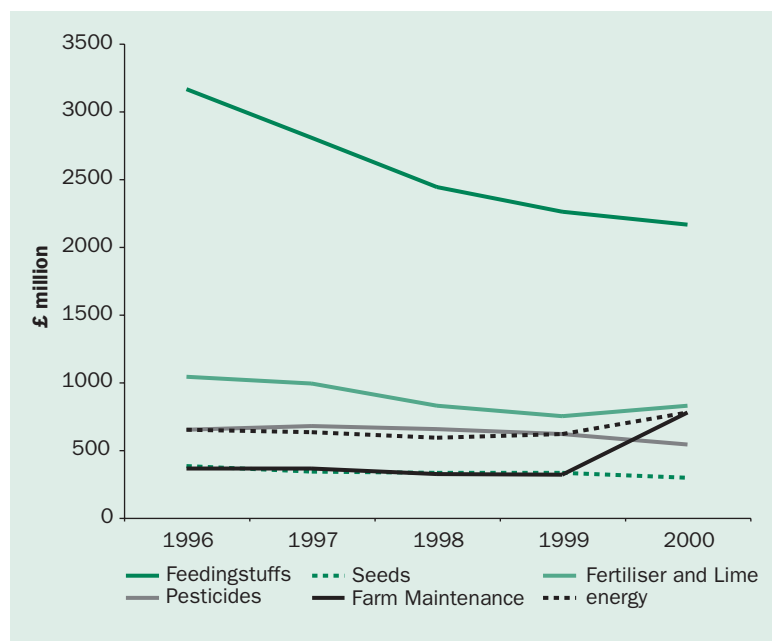


Diagram 1.16 splits out some of the major elements in the large miscellaneous category.

Part of these inputs represent transactions within the agricultural sector - straw for bedding, leasing of quota and the multiplication of seed for example. Others are produced by businesses for which farming is only one of the clients they serve, machinery and veterinary services, for example. For many of these businesses revenues from farming remain critical. When they fail the consequences are likely to be a reduction in employment in remoter areas and increased costs in supplying farmers requirements from greater distances. In recent years there has been a considerable retrenchment in the number of farm machinery dealers, a cut in the number of veterinary practices catering for farm animals, a reduction in the number of agricultural merchants and further consolidation in the fertiliser-manufacturing sector.

Diagram 1.17 illustrates the generally downward trend in farmers' purchases from major suppliers since the mid- nineties. The cut in feedingstuffs reflects declines in livestock numbers. Elsewhere, apart from energy, demand has drifted downwards. For energy the apparent increase is due to rising prices for fuel rather than increases in the amount used.

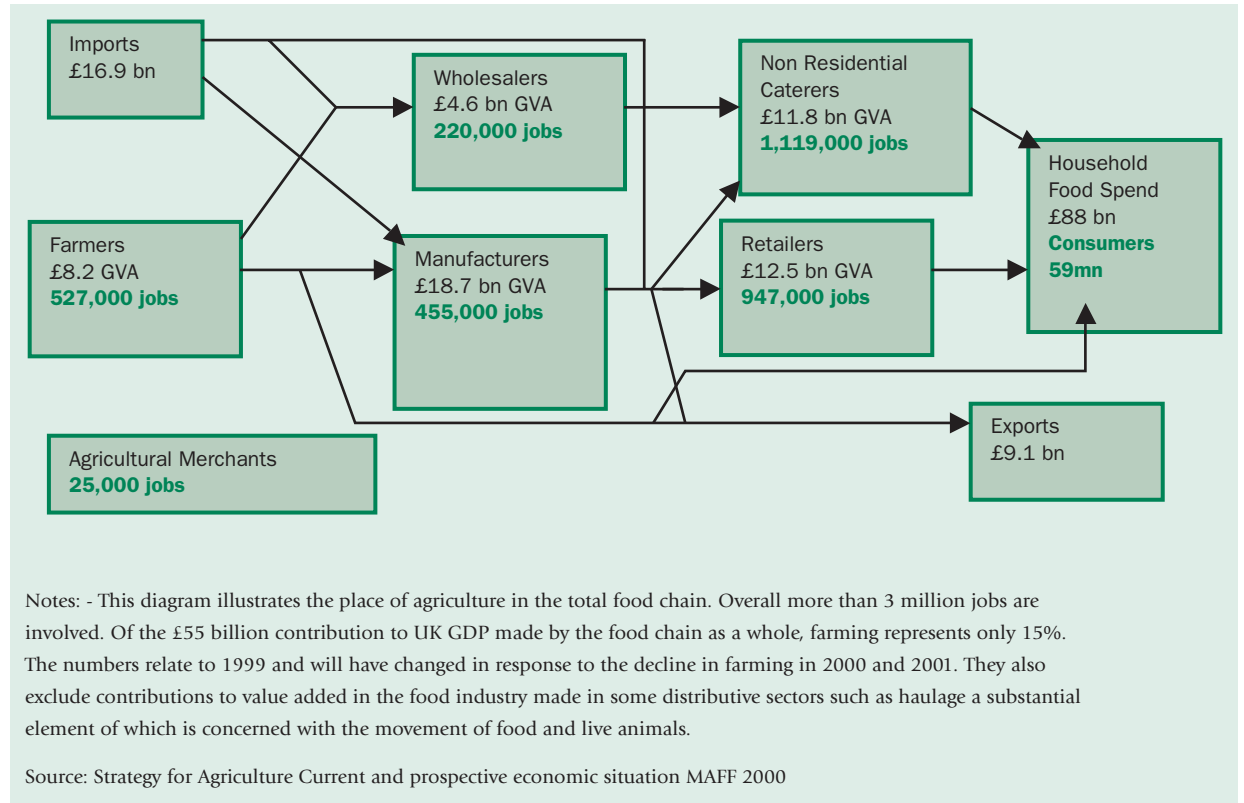
**Diagram 1.17**  
**Changes in input Purchases**



Products as they leave the farm have generally only begun their journey to the consumer. That journey involves transport, processing and distribution via wholesalers, supermarkets and a range of catering establishments. It is in these areas that most of the value created in the food chain is added. In a rich community which is prepared to pay for variety, convenience and round the year availability, most food is processed and much of it presented in forms which demand little more work in the domestic kitchen.

Diagram 1.18 illustrates this in a schematic form. Farm production is a small proportion of the total activity involved.

**Diagram 1.18**  
**The UK Food Chain**



The food industry experienced rapid and radical change in the second half of the 20th Century. Retail shopping, conventionally a small scale, neighbourhood activity, has become concentrated so that a small number of national multiples sell a very high proportion of all domestic food purchases. The catering sector has exhibited a similar tendency; international fast food organisations such as MacDonalDs or Burger King have become common place. Hotels and public houses increasingly are dominated by national and sometimes international businesses whose purchasing policies are centrally controlled.

These changes have altered competitive relationships within the food sector. Manufacturers come under competition from own-brand products that offer close substitutes to their own national brands. Traditional wholesalers have lost much of their role, replaced by depots through which the major retailers move supplies into their own stores. Farmers find themselves relatively weak sellers. In many product areas auction markets have tended to be replaced by direct purchasing policies. Manufacturers and retailers preferring to be assured of the quality, timing and type of farm product they are to buy. In response some farmers have sought to establish their own direct sales either through farm shops or by using farmers markets.

Farmers have traditionally been weak sellers but the extent of the asymmetry has led to accusations that supermarkets have exploited farmers, driving down their prices whilst not passing on any saving to consumers. These suggestions are strongly rebutted by the supermarkets who stress that they too face intense competition in the market place. A number of official enquiries have failed to prove the accusations although critical of some of the purchasing practices of some supermarkets. What has been shown is that most consumers now have a much wider choice of food of high quality than ever before. Whilst the loss of personal relationships embodied in the traditional shopping experience may be regretted, and small out of hours shops may provide an excellent top up service, very few customers choose them for their main source of supply.

The growth of the catering sector reflects changes in lifestyles. A combination of factors is involved. There are an increasing number of single-person households, both amongst the elderly and among younger unmarried people. The participation of married women in paid employment not only leaves less time and changing gender roles for food preparation in the kitchen but also encourages eating out. Within the catering sector the emergence of nationally available branded suppliers catering for distinct markets - from burgers to steak houses has improved the probability that meals bought out will be of predictable standard and safety. The relegation of more mealtimes, especially lunchtime, to refuelling stops has led to the expansion of the sandwich business, creating a basis for a much more sophisticated level of provision. The growth of ethnic restaurants specialising in the cuisine of more exotic countries offers eating opportunities which may not be attempted in most domestic kitchens.

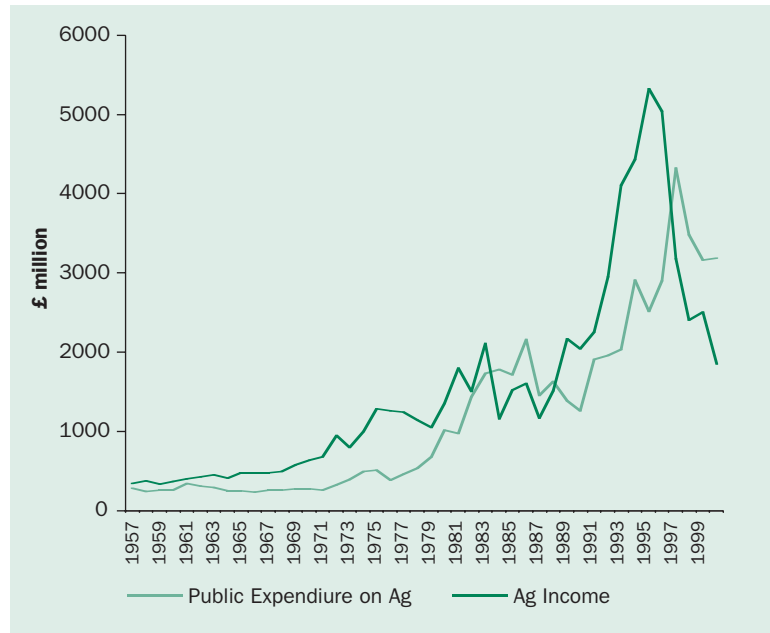
Some parts of the catering industry specialise in locally produced fresh food. In the UK, unlike France there is no strong regional market tradition in cuisine. However, there are opportunities to develop such specialities as people become more affluent and seek new eating experiences. These markets can represent a premium market for farmers who meet their needs. Other caterers are more concerned with consistency in all their outlets and seek large-scale supplies that may often be easier to secure from imports. Yet others need specific inputs of foreign origin as ingredients to produce dishes characteristic of their cuisine.

Farmers, faced with the decline in their share of the consumer expenditure on food have sought to fight back. To do so they may add value in a number of ways. Farm shops can generate strong links with local communities and attract a premium trade. Farmers Markets may bring fresh produce to town and so attract a share of the retail spend directly. Farmers may enter food processing, for example making cheese and dairy products. This can enable them to penetrate more distant markets, sending parcels to customers who may order by 'phone or via the Internet.

Such developments represent robust and often successful responses by individual farmers to the economic pressures they face. As such they can be the basis of higher profitability and greater income stability. However, they will not resolve the problem for the mass of farm output that has to reach an urban population who wish to minimise time spent shopping as well as time in the kitchen. For that market access has to be via the major organisations of food manufacturers, supermarkets and caterers. These relationships become critical for the future of UK agriculture.

To a degree uncommon in any other trading industry, agriculture has been the recipient of payments from the public purse. As Diagram 1.19 shows expenditure has risen considerably since the 1950s and especially since 1980s.

**Diagram 1.19**  
**Public Expenditure & Farm Income**



In two periods, in the late 1980s and since the late 1990s, public expenditure on agriculture has exceeded the income of the industry. Even more alarming, this does not measure the full extent of public transfers to farming. The effect of the Common Agricultural Policy has been to maintain the internal prices of key agricultural products at levels higher than those that normally prevail in world markets. This has the effect of

creating a transfer directly from consumers to farmers. The extent of this transfer is disputed; partly because it is suggested that world prices are the outcome of marginal oversupply and do not represent a price at which a substantial supply of food could be reliably purchased. However, estimates made by OECD, which seek to measure the Producer Subsidy Equivalent, PSE, of this support suggest that in the late 1990s, total transfers to farming in the EU were of the order of 42% of its revenue. A measure of the consumer contribution, Consumer Subsidy Equivalent, CSE, suggested that at the same time consumers were paying something like 22% more for food than would be necessary in the absence of the protection provided to producers by the CAP.

The recent increase in the cost to public budget's of farm support stems from the decision in 1992 to reform the CAP by allowing internal prices to come nearer to world prices and to provide compensation for farmers in the form of direct payments. This approach has been taken further in the Berlin settlement of 1999. At the same time a modest redistribution of support has been made from commodity based payments to payments for social and environmental purposes. The direct payments for sheep and cattle have been modified to base them on area rather than stock numbers.

These remain very substantial payments. Their rationale is the subject of the next chapter. However, at this stage it is worth noting that they have conditioned the existing pattern of farming in the UK, as in the rest of Europe. As a result they have become built into the costs of farming. This is not the fault of the existing farmers but the outcome of a series of judgements of the public interest made by past governments.

## **Agriculture in the rural economy**

Overall agriculture accounts for less than 1% of GDP and 2% of the employed labour force. As earlier diagrams have shown its share of both is continuing to decline. In some rural areas however, it remains of far greater importance. Material produced by the Performance and Innovation Unit in their 1999 report, Rural Economies, showed that in East Anglia almost 5% of GDP came from farming, whilst in the South West its contribution to GDP approached 4%. In employment terms the variation is even more marked. In Cumbria and Northumberland, the Eastern parts of Yorkshire and Humberside, East Anglia, the Welsh border counties and the South West more than 10% of the employed workforce was in farming.

In employment terms such data can underestimate the importance of continued farming activity. The supply and first stage processing industries - feed, fertilisers, pesticide producers and distributors, abattoirs, and packing factories - can only exist if farming continues. Still more, there is a multiplier effect as income generated by this activity is spent in the rural economy on goods and services provided locally. These numbers are extremely difficult to measure. We know that much traditional shopping activity has moved away from the village into adjacent towns. However, in considering the social impact of changes in the level of farming activity, these effects are clearly important. Their significance is increased as it is recognised that many of these jobs are not highly skilled, that their holders have few other opportunities for local work and are not well placed to travel to new jobs. Those who are able may move away, hastening the shift in the character of the community. Those who cannot move, because of age or infirmity may remain, a pocket of poverty, isolated in villages which no longer have the social structure to support them.

It is characteristic of much low paid rural employment that it is seasonal or casual. Individuals, especially those who are in middle or later years, contrive to secure sufficient to live on by working sometimes on farms, at other times in the tourist sector and by picking up short term, low or unskilled jobs as gardeners, handymen etc. The stability of this system depends upon all the parts fitting together. If one important source of income ceases, the others may be insufficient to sustain an acceptable lifestyle and so the search for income may take more people away from the countryside.

Although the data available is inadequate to provide a truly reliable account of this process of rural change its importance is generally recognised. The loss of local population often results in the need to substitute formal aid for that which would have been provided unpaid and informally by families and friends in the village. Where the official mechanisms fail, or where they become too expensive to sustain, then there is a real hazard of hardship being unrelieved and people living in isolation and poverty.

The decline in farm and agriculturally related employment is inevitable. However, rural economies as a whole are growing and creating new sorts of job, many of them highly skilled and managed from national or even international centres. The sorts of employment generated are infrequently accessible to those displaced from traditional countryside jobs. The effects may easily be masked in aggregate statistics that show rural populations increasing, rural incomes on average higher than those of many urban areas and rural unemployment at levels below those in towns. There is thus a need in assessing the changing role of agriculture to ensure these hidden economic consequences are fully recognised. For some vulnerable individuals, outside farming, the result of agricultural decline may well be poverty.

## **Agriculture and the environment**

The function of farming is to modify the natural environment in ways that increase the productivity of plants and animals of economic importance. Without such deliberate intervention food supplies would be dependent upon hunting and gathering and would occupy most of the time and effort of most people.

Modern farming methods have had such success that it now requires only a small fraction of the labour force to ensure an adequate food supply for a world population larger than has ever existed before. In the process of development mistakes have sometimes been made. These are not always the result of modern methods. For example the erosion of soils in some mountainous areas of the third world comes about through the use of traditional methods in inappropriate circumstances in an attempt to cater for the needs of a growing population. However, the misuse of modern methods can cause problems. Mechanised farming, drainage and irrigation can, if used wrongly result in problems ranging from erosion to salination which prevent continuing productive use of the area. Where this happens agricultural production may cease to be possible. Fortunately such events are rare and where they occur not so much a fault of the methods but of the social and economic framework which leads to their misuse.

Concern to avoid such disasters has led some to question the sustainability of farming. However, the critique goes much further. Modern farming, in common with other industries, depends upon the use of inputs of energy, chemicals and machinery derived from sources which are finite. This raises the spectre associated with the writings of Thomas Malthus, that eventually populations will require more food than can be produced. The outcomes, that seem likely to include hunger and conflict, are potentially catastrophic. Such arguments are compelling viewed on an infinite timescale and especially if technology does not change. In practical terms, however, the application of new technologies and the exploitation of newly discovered resources has meant that far from food becoming more scarce, it has tended to be more plentiful. Food prices have tended to fall and popular anxiety about future supplies to diminish.

However, the underlying conflict between ever increasing consumption and finite resources remains. In practical terms the issue become not to seek permanent sustainability but to devise more sustainable systems. In that context the evolution of methods that use finite resources more productively, dependent upon research and its application in technology, plays a critical role. It is an area in which governments and international agencies have a particular responsibility. At the same time society has to determine how it values benefits for future generations, against any limitation of current consumption.

The concern about future food supplies is fundamental but it is not at the top of the agenda of current debate about sustainability. This is more concerned with the failure of market mechanisms to fully represent the total costs and benefits of farming to society. There are a number of specific examples that have become prominent in this debate. These include climate change, biodiversity and the impact of farming practices on wildlife and landscapes.

Agriculture uses fossil fuels and farm animals release methane into the atmosphere. Thus they contribute to the greenhouse gases that are believed to be responsible for a rise in global temperature. Agriculture may also fix carbon in its plants and offer renewable alternative sources of fuel and raw materials, thus diminishing the impact of economic activity on the environment.

Agriculture displaces existing living organisms in order to give priority to those of commercial importance. The use of pesticides and herbicides has enabled modern farming to do this more effectively than before. The result is a diminution in the number and variety of species on farmland. Even beyond the farmed land the use of farm inputs may result in unintended damage to species in watercourses. Quite apart from the direct casualties other species may find it hard to survive as a result of loss of habitat.

Modern farming also makes use of seeds and breeds of animals that have been bred to give maximum commercial advantage to the farmer. Their superiority over traditional breeds is such that a relatively small number dominate agriculture. In market terms this makes sense but it means a reduction in the genetic diversity of commercial agriculture. Such species loss, whether of wild or farmed organisms, is increasingly seen as a cause for concern. Not only may there be risks associated with dependence on too small a range of genetic types, should they become subject to some disease or predator, but the loss of genetic variety may deprive society of the opportunity to make full use of developments in genetic science. These relate not only to production but also to the development of pharmaceuticals and health related products.

Possible threats to human welfare are not confined to the impact on consumption; they also reach into issues relating to the quality of life. The existence of an attractive landscape of thriving populations of wildlife and areas for recreation contributes to the sense of wellbeing of many people. These are real values even though they have no price tag attached to them. Farming practice results in changes in traditional patterns of countryside. Some of these may be beneficial, for example land may be released for recreational use or be cultivated in ways which are more hospitable for wildlife. Others can have the reverse effect. Still more complication arises because the same change may be perceived as a gain by one group and a loss by another.

Although these costs and benefits are not part of a commercial system they are certainly of economic significance. They represent part of the total value society derives from the use of the resources it possesses. Since they are not represented in the market they have to be given weight in the political process. How this is done and how competing claims are evaluated has become an issue of critical importance in determining the future role of agriculture in the United Kingdom.

Within England two agencies have particular responsibility for shaping and administering policy in relation to these non-market aspects of the economic value of agriculture, The Countryside Agency and the Environment Agency. Both have recently produced consultative documents relating to their work.<sup>3</sup> Each of these propose radical shifts in agricultural activity which would have major consequences in terms of the ability of many existing farm businesses to survive in a competitive market place.

No attempt is made in this paper to evaluate either paper. In each case there are serious grounds for concern about the analysis presented which should surface through the consultative process. Here we are mainly concerned with the strategies farmers may be able to adopt as agriculture discovers its new role within the UK. What seems to be the message from both reports is that, in the future, policy is more likely to be concerned with what it perceives as the non-markets benefits and costs of farming than with the industries contribution - or even survival within the market place.

<sup>3</sup> A strategy for sustainable land management in England - the Countryside Agency June 2001 and Agriculture and the Environment - the Environment Agency - October 2000

## Chapter 3

# The changing relationship between the State and the Farmer

### From support to restriction

At the end of the Second World War the economies of most of the European belligerents were in severe disarray. Thus although military action against food imports had ceased food shortages remained and could not be offset by imports. In many European countries food shortage in the immediate post war years were more severe than during the war itself.

Whilst the position in the UK was less difficult than in some other countries, in particular than in Germany, rationing continued and some products were rationed for the first time. This challenged the comfortable British assumption, which had dominated the thinking during the early years of the century and recurred again in the 1920s, that domestic agriculture was of secondary concern. There was an urgent need to produce more food at home. To do this the co-operation of farmers was essential. That co-operation had been damaged in the inter-war years, when promises made after a period of food shortage during the First World War, were broken. To restore confidence the government of the day needed to provide incentives for farmers and credible assurance that these would survive the end of scarcity. They did so in the form of the 1947 Agriculture Act which carried forward the process of consultation with the leaders of the industry that had developed during the war years.

Elsewhere in Europe similar arrangements were put in place. These reflected the differing traditions and circumstances of each country's agriculture. They had in common that farmers were offered a degree of protection from external competition and some assurance that their receipts from the domestic market would be sustained. The outcome was a signal success. Production recovered shortages eased and the miseries of rationing disappeared.

In the UK a free National Agricultural Advisory Service encouraged agricultural improvement. This not only led to better management but also facilitated the introduction of new and more productive methods of farming. It was in this period that technical progress began to change the face of farming. Mechanisation enabled cultivation to be completed under conditions that would have defeated earlier methods. The use of fertilisers led to higher yields of crops, whilst crop protection chemicals offered new means of preventing pests and diseases destroying crops. Within an industry that was deeply committed to traditional, labour intensive methods of farming, a new more innovative and technically sophisticated breed of farmers emerged. This has remained of continued importance in the years that followed.

In the UK it was a relatively short period before the success in raising output began to cause problems. At the end of rationing the British government had adopted a system of deficiency payments which paid farmers the difference between an average market price and a guaranteed price for their most important products. As global supplies began to outstrip global demand prices fell and within the UK consumers benefited. However, the cost of subsidies to the taxpayer rose and became increasingly a matter of concern. Attention switched from policies, which fostered extra production of all products, to selective expansion and standard quantities - designed to limit the Exchequer's liability to support the industry. Farmers were encouraged not so much to produce more but to farm more efficiently.

For British farmers entry to the European Economic Community, (EEC) finally achieved in 1973, brought some relief from these pressures. They were further eased by a commodity boom in the mid 1970s when world prices for some key commodities rose rapidly and domestic production became relatively more attractive.

Membership of the EEC involved acceptance of the *acquis communautaire*. This included the arrangements made by existing members to implement the commitment in the Rome Treaty to replace national agricultural policies by a Common Agricultural Policy (CAP). The Common Policy was designed to allow agricultural goods to flow freely across EEC frontiers and to provide a common level of protection for Community farmers *Vis a Vis* the rest of the world. It comprised both a market policy and a structural policy. The market policy dominated the debate. It fixed support prices within the Community at levels substantially in excess of those normally operating in world markets. The immediate effect was to place the burden of farm support on consumers rather than taxpayers and to ensure that countries who were net importers would contribute to the cost of supporting production in those member countries who were net exporters. A secondary consequence, which arose because prices were fixed at too high a level, was to stimulate production. This resulted in heavy budgetary costs either to export surpluses to the rest of the world, or to buy and store (and possibly ultimately to destroy) products in order to maintain the level of the price farmers received close to the level fixed by the Council of Agricultural Ministers.

For the United Kingdom this was a wholly unsatisfactory policy. It meant that consumers would pay higher prices for food, politically unattractive and socially regressive. It meant that there would be a net transfer of resources from the UK to the agriculture of other member countries in order to protect producers who were, by world standards, high cost. The immediate effects were diluted because of the world price boom but the implications for farm policy in the UK were clear. Given that the supply price of food was now higher increased production at home reduced imports and the amount paid as duties to the common resources of the EEC or to producers in other member countries. Thus there was a considerable incentive to foster more production, especially where new technology offered opportunities to do this at lower cost. A White Paper, *Food from our own*

Resources, represented this approach and set the scene for higher levels of farm production in the UK.

Unfortunately for the UK farmer and the EEC taxpayer, similar pressures operated in other member countries. In effect each country knew that if its farmers increased their output the cost would be divided amongst the Community as a whole but the benefit would accumulate among their own farmers. Despite many warnings from independent experts and ultimately from the Commission itself, the Council of Ministers failed to cut prices to curtail the expansion of production beyond the capacity of the Community to absorb it. The result was growing surpluses, caricatured in the language of 'Grain Mountains' and 'Wine Lakes'.

Several factors spelt the doom of this system of unrestrained support. Milk production had increased to a level at which the Commission's attempts to support exports led to severe disruption of the world market and a need for ever increasing subsidies per unit exported. In general the dumping of farm products on the world market, an action in which the EEC was not the only offender, caused great resentment amongst traditional agricultural exporters. Within the EU the rising budget cost caused resentment, especially in those countries which bore the largest net share of the cost. For the Community as a whole the importance of maintaining open world markets for its industrial products and services was of far greater significance than protecting farming which represented an ever decreasing share of the employment and income of the EEC.

In 1984 the Community broke with its own principles of competitive internal free trade to impose a system of milk quotas on the Dairy Industry. Although this was initially resented by farmers it succeeded in limiting supply and containing the cost of the Dairy support system. By the end of the 1980s attention had shifted to the cost of the Cereals policy. A variety of devices were attempted to control production, voluntary set aside, co-responsibility and a commitment to reduce prices should production exceed agreed levels. In 1988 the Council of Heads of Government (The European Council) established budgetary guidelines which were not to be exceeded. In effect potential spending on the CAP was capped.

None of these changes were sufficient to allow the Community to negotiate a settlement in the Uruguay Round of GATT negotiations. These began in 1986 and were supposed to be completed in 1990. A condition of the round was that it should include agriculture. However, the Community failed to make any offer on agriculture which was acceptable to other GATT members and, as a result, the talks broke down at what was intended to be the final session in 1990.

The end of the Cold War in 1989 brought a new pressure to bear on the CAP. Many of the countries of Central and Eastern Europe which had formerly been under the tutelage of the USSR wished to become members of the European Communities. Within their

economies agriculture was of much greater proportional importance than amongst existing members. They possessed substantial agricultural resources, which were operating at lower levels of productivity than those within most of the EC. If they were admitted to a Community in which the CAP remained unchanged the potential consequences in terms both of budgetary cost and disruption of world markets would be unacceptable.

Faced by these pressures the then Commissioner for Agriculture, Mr Ray MacSharry introduced radical changes in the CAP regimes for major arable crops. For Cereals a package that involved lower price, a requirement that all but the smallest farmers should set aside part of their land and the payment of compensation for the loss of revenue was introduced. Accompanying it were measures to assist farmers to retire, to promote farming methods that were less intensive and to encourage environmentally sound farming practice. Changes on the livestock side were equally radical. Prices were reduced, compensation was offered in the form of premium payments but these were limited to a maximum number of animals. Dairy quotas were continued with some modest cuts in price.

Perhaps the biggest prize from this reform was the successful conclusion of the Uruguay Round. Based on a proposal of the GATT Chief Executive, Art Dunkel, and following negotiations with the United States, the EU signed up to an agricultural package which included commitments to reduce protection, allow greater access to its markets and curtail subsidised exports. A key element in this success was the undertaking to review the progress of the agreement in 1999 and embark upon further negotiations with a view to reducing still more the remaining level of protection. The agreement relating to agriculture was important in its own right but it also was crucial to enable the rest of the GATT negotiation to be completed. This included the establishment of the World Trade Organisation as a successor to GATT and extension of trade agreements into a much wider remit of services and intellectual property.

Although no precise date can be determined, it was clear by the end of the MacSharry and GATT negotiation that within the European Union the attitude of the public to agriculture had changed radically compared with the early post war period. In effect a new agenda for farm policy was emerging although it was not yet wholly articulated. There were several reasons for this.

Improvements in productivity had been achieved by techniques which favoured crops against their competitors, whether weeds, pests or diseases. This meant that within the farmed area there was a decreasing variety of wildlife and a loss of biodiversity. It also involved some change in the pattern of the landscape as modern methods favoured larger field sizes. For both plants and animals systematic breeding resulted in types which were so superior to most traditional farm crops and livestock, that they replaced them on an

increasing number of farms. This resulted in less visual variety and anxieties about the risks of depending too heavily on a small number of genotypes. Some critics were hostile to the techniques used to bring about these improvements. Thus the fertilisers and crop protection chemicals which gave advantage to economic crops were presented as dangerous to health or damaging to the environment. One result has been an increasingly restrictive set of rules about the use of fertiliser and stringent regulations concerning the production and sale of pesticides and herbicides. The use of growth hormones in cattle was attacked and despite the balance of scientific evidence suggesting that there was no risk to human health, they were banned. More recently the use of genetic modification to provide protection for crop plants has led to outcry from some lobby groups and measures which effectively prevent the application of this important technology in farming in the EU.

Diffuse pollution represents a pressing environmental problem. Essentially it arises when materials escape from use on the farm into the atmosphere, watercourses or ground water. Crises can arise as a result of slurry from animals or the effluent from a silage clamp leaking into streams and rivers with devastating consequences for wild life. Less obvious but more pervasive are fertilisers and plant protection chemicals that escape from the field in which they are intended to contribute to production and pollute water. To a farmer these represent a loss. To the water company they may be a cost which has to be borne to restore the water to drinking standards. Within the environment they may damage plant and animal life. Whilst the benefits of such chemicals can easily be ignored when food is plentiful the problems they create form the basis for emotional as well as practical anxieties concerning farm practice. For the farmer approaches that avoid the problem by improved precision and appropriate farming systems can create 'win-win' solutions. Approaches that apply blanket bans or simply impose taxes can raise costs without necessarily leading to solutions.

Apart from the environmental critique there have been a series of crises relating to food safety. The most dramatic of these relates to the outbreak of BSE and the fear that this may lead to nvCJD in humans. However, salmonella, e-coli 147 and concerns about listeria and campylobacter contributed to a loss of confidence in the agencies responsible for the safety of food. Perception and reality are often well separated in these discussions. Many of the problems arise well away from the farm, in the food chain and in kitchens. They can arise as much from changes in lifestyle as from increased infections originating on the farm. Despite this increasing numbers of reported food related illness have led to demands for more stringent controls at the place of production. Although not human diseases, recent outbreaks of swine fever and foot and mouth disease have lent credibility to the idea that there is something fundamentally wrong with contemporary systems of farming. In terms of farming practice the imposition of more stringent rules about what can be fed to animals and what animals can be sold have adverse effects on costs and revenue.

This chapter makes no attempt to evaluate these anxieties. However, it needs to refer to them to explain the further development of policy that has emerged from the debates about Agenda 2000. In the 1970s, the power of farm lobby groups led farm ministers to take a view that the budget would have to expand to meet whatever costs their decisions involved. Today we have reached a point at which consent to spending on farming, where it is provided, is increasingly likely to be subject to conditions that are imposed by other interest groups than farmers.

The Agenda 2000 debate, which preceded the latest round of CAP reforms, took place within this changed political environment. It was part of a much larger and still incomplete policy discussion embracing the future of the Community, its governance and the way in which it can incorporate a large number of applicant countries. The agricultural element was also concerned to improve the Community's negotiating stance in relation to the WTO review, due to start in 1999 at Seattle.

In practice what emerged so far as production agriculture was concerned was more of the same. Prices were to be reduced further. Direct payments (no longer called compensation) were to be applied but the settlement involved a requirement to shift at least some of this money away from commodity production to environmental and rural development programmes. New language was introduced to defend these continuing payments. Farming was described as multifunctional. The outputs society wanted were not simply food as a marketable commodity but environmental. If the prices available for food production were insufficient to generate such non-market outputs, then the purpose of payments to farmers was to add sufficient to ensure that the combined return from the market and non-market values reached the highest value possible. This strategy makes it easier to defend support in the context of WTO. It also provides some comfort to the critics who can now believe that they get something they want for their money. From the farming perspective they offer what may be seen as a lifeline - revenues which enable the business to continue in an environment in which in market terms alone it has become non-competitive.

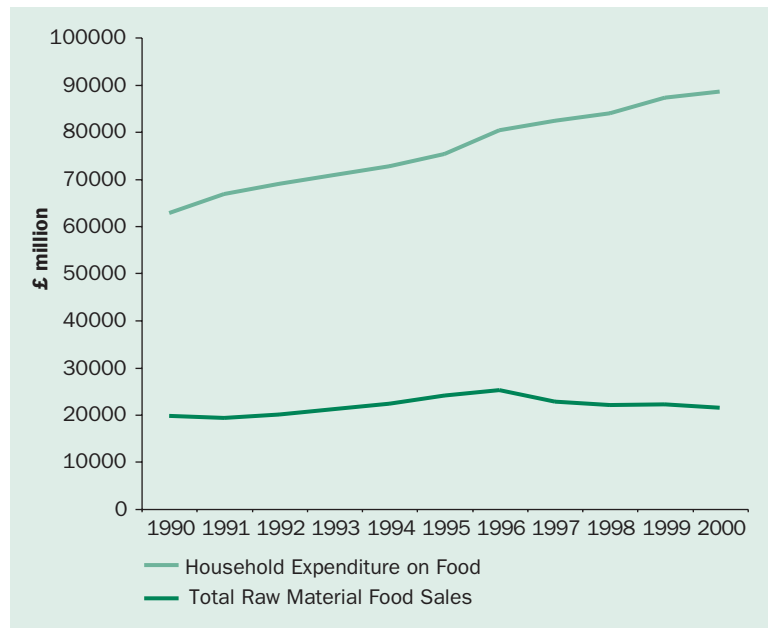
Continued support on these grounds can only be assured if it does deliver the non-market goods and services required. However, this cannot be satisfactorily achieved simply by sending money. It involves site specific programmes of action and therefore real costs in delivery. It requires surveillance to ensure that the outputs are being delivered. It will set limits to the freedom of farmers to respond to changing market forces and therefore from time to time appear to conflict with their interests. It is clear that a new relationship is developing between the state and the farmer. Whilst the direction of change is clear how far it will go is much less certain. In exploring that issue it is necessary to take on board changes taking place in the commercial market in which farmers operate and issues associated with the definition and delivery of public goods.

## From supply driven to market led

The transformation in incomes and lifestyles, which has taken place since the Second World War, has been manifest in the whole of the agri-food chain. Beyond the farm gate developments in food processing and manufacture, in the transport of foodstuffs around the world and in the retail sector have transformed economic relationships. Many of these changes facilitate and reflect new lifestyles. There are now many more single person households. Traditional eating patterns, where families ate together the same sorts of food prepared in the domestic kitchen have increasingly given way to different provision for individual members. Time spent in preparation is minimised by the use of frozen foods, of microwave ovens and the increasing availability of fresh convenience foods such as ready prepared salads. There is a growing market in meals delivered to the doorstep and a larger proportion of food is supplied through the catering sector.

Diagram 3.1 illustrates the growing proportion of household food expenditure that relates to value added after the farm gate. It shows household expenditure and the sum of domestic farm output measured at market prices and of net food and drink imports. This understates the tendency because it does not show changes in the catering sector, which has been growing through this decade and it includes in food imports some element of food that is already processed. Despite this it is clear that the gap between consumer food purchases and the revenues of farmers and suppliers of raw material food is growing.

**Diagram 3.1**  
**Household Food Purchases and Raw Material Food Sales in the UK**



This growing distance between the producer and the final food consumer makes the way in which the intermediate businesses function of increasing importance. Here there have been dramatic changes. Food retailing has become a large-scale activity with most of the sales going through five multiple supermarket chains. The traditional small family grocer, butcher and greengrocer have disappeared from most high streets. Shopping once done daily with baskets is now done weekly using the car boot. The process changes rapidly and a small but significant portion of the trade is now conducted via electronic systems resulting in direct delivery to households.

This revolution has changed the balance of power within the agri-food sector. Not only are the large retail enterprises responsible for a high proportion of business but they have unrivalled information about consumer preferences. This can be translated into their purchases whether from food manufacturers and processors or directly from farmers. For these enterprises brand image is of major importance. As a result they have a profound interest in the safety of the products they sell, in their quality and consistency. Although the number of businesses may be small, they are intensely competitive with each other.

Competition takes a diversity of forms. Site is critical; offering the most accessible outlet with adequate car-parking space is a primary means of attracting business. The shopping experience created by the way the store is fitted out, the behaviour of the staff and the ease with which the process of payment and checking out is secured are all opportunities to compete. Differing stores may target differing market segments but profit lies in attracting larger numbers of high spending customers. Apart from such structural characteristics of competition, all stores must compete in the food they sell. Here, too, there are a diversity of ways in which competition operates. Variety, availability throughout the year, presentation and packaging are all-important. The store has to reassure customers that high standards of food safety are observed within its own premises and, by implication, amongst those from whom it buys. Price is only one of the instruments of competition. It is nevertheless critical. As many supermarket advertisements make clear consumers are attracted by the promise of lower prices.

This creates relationships with suppliers that are both complementary and conflicting. By careful management of supplies, right back to production on the farm, retailers may help to ensure safety, availability and quality which matches the profile of the market in which they sell. This requires a co-operative approach. At the same time, retailers and mass caterers seek to secure the supplies they need at lower cost in order to defend themselves against competitors and maintain their margins. If they fail to do so the value of their shares may fall sharply. Complementary relationships have to be long term and based on mutual trust. Price determination tends to be short term and opportunistic.

Many suppliers feel themselves to be extremely vulnerable. They have a relatively small number of outlets, each of which is very large in relation to their own business. Their products are fragile and deteriorate over time. Characteristically they operate

independently, although some farmer co-operatives and groups seek to develop good marketing strategies for their members. Such strategies often rely on building longer term links to customers, operating to protocols agreed in advance and ensuring a high standard of traceability for the goods sold. This process results in a market discipline that is shifting farmers from simply selling commodities in an anonymous market into producers with particular customers in mind.

Even within this framework relations are not always good. Perishable products may be returned to the supplier with no possibility of independent verification that they were below the agreed standard. Suppliers may be asked to make contributions to the retailer to have their products stocked on his shelves. This asymmetrical relationship has led to enquiries by the OFT and the Competition Commission and proposals for a code of conduct.

A relatively small proportion of food moves unchanged from the farm to the retail shop. Most is processed to a greater or lesser degree. Even fresh products such as fruit and vegetables are generally sorted and packed before display. In the processing sector, too, there has been significant concentration. Major international companies such as Nestlé and Unilever not only produce a substantial share of highly processed products but also are in the forefront of technical development and innovation. Their raw material purchasing policy may determine the fortunes of farmers who supply them. Their requirements in terms of specification and timing of delivery are often critical. Their products move across frontiers and can be produced in countries distant from ultimate markets. As a result raw material price differences play a large part in determining where new processing factories are located and their inputs sourced. Again there is a mixture of joint and conflicting interest between farmers and processors. Processors may enter into contractual relationships with farmers, sometimes involving rigorous conditions about methods of production and timing of delivery. However, in an international market they cannot afford to pay more than competitors located elsewhere. Thus there is likely to be continuing pressure on farmers to improve quality and lower costs. If they cannot, factories may close and farmers who have specialised in supplying their requirements be left without appropriate markets for their product.

The catering sector includes a great variety of businesses that sell meals to consumers. The largest of these are international brands that may offer essentially the same package to their customers in many countries. Within the UK there has been concentration in both the hotel and pub trade and in the fast food sector. A single business organisation may own several brands of catering outlet, aimed at distinctive market segments. These organisations buy substantial volumes of food. They have a requirement for uniformity, for assurance about food safety and for availability to match the profile of their business. They will import products where the quality and price conditions, including the cost of procurement, compare favourable with domestic supplies. At the other end of the spectrum are specialised restaurants with a reputation for gourmet foods that may insist on buying fresh products and will acquire these from local farmers by preference. For such

businesses price may be a secondary consideration compared with quality, image and availability.

These changes in the mainstream systems by which food reaches ultimate consumers have brought pressure to bear on traditional businesses within the agri-food sector. There has been significant reduction in the numbers of merchants, of wholesale businesses and small-scale abattoirs. Many that remain have become more specialised, notably in activities relating to export markets. The relationship with farmers has changed. Whereas traditionally a farmer tended to deal with one merchant to supply his inputs and market his outputs, these are now treated as separate activities. Groups of farmers, or even some very large producers, may dispense with traditional merchants dealing directly with manufacturers or customers. Electronic trading is likely to take this process further as both merchants and farmers can consider deals over a much wider range of market opportunities.

Some farmers and some consumers have rebelled against this process of concentration and increased sophistication. Recognising that the growing areas are in value added rather than production related activities farmers have established farm shops, marketing not only their own goods but products bought in from outside. In some regions farmers' markets have developed allowing farmers to sell their products to consumers directly on one or more days a week in a local town. Such outlets are of major importance to those involved but overall represent a very small part of the total consumer expenditure on foodstuffs. If, as some environmental pressure groups advocate, consumers actively seek local supplies in order to avoid 'food miles', this sector of the market may grow. However, at this stage the major sources of supply for the majority of UK citizens remain the large-scale processors, retailers and caterers.

These developments have fundamentally changed the relationship between farmers at the market. When food was scarce and production encouraged by support, the farmer saw it as his job to produce and the responsibility of others to find a profitable outlet for what left his farm. The system was essentially supply driven. Attention focused on how to improve productivity on the farm rather than how to meet the requirements of a diverse and exacting market. So long as the support system was willing to underpin this approach, by purchasing for intervention when prices fell below agreed levels and disposing of surplus via export subsidies, this approach made sense and farmers were able to make money. As prices have fallen and the support for production become both less and more conditional this is no longer the case.

As farmers make investments for future production, the prime consideration has to be where there is a market that will offer sufficient return to justify the risks to be undertaken. This suggests not simply changes in what is produced and in production methods but of a more fundamental nature in the structure of the industry. These issues will be further discussed later in this paper.

## From food production to public goods - a shift in the logic of support

The shift away from support for production described earlier in this report is incomplete and seems likely to go further. This implies that production must be much more closely related to the market and develop a capacity to recognise and respond to its changing demands. However, there remains a continued public concern about the impact of agricultural changes on the environment and rural communities. This suggests that intervention in the industry is likely to continue. Part of this is reflected in the move to increased regulation described earlier in this chapter. Part of it is reflected in payments intended to secure the delivery of public goods. This may well appear as continued support for the industry but in reality, it is not support but a means by which the community can buy outputs that would not otherwise be available.

Public goods have the characteristic of being non-rival and not capable of being bought or sold. The attractiveness of a landscape, the smell of new mown hay, the sound of the dawn chorus all fall into this category. Their existence depends upon the way in which resources are used. Resource use is driven by the rewards offered to the owners and controllers of the resources concerned. Most of these rewards come via the market and as markets change the pattern of rewards shifts. This is not a voluntary decision. For example, as labour costs rise in an increasingly affluent economy, the use of labour that is not able to generate an increase in revenue, to match higher wages, becomes impractical. The implication of changed resource use is changed production of public goods as well as of marketable output. This need not represent a deterioration. However, people who feel that the changes are adverse are more likely to be articulate than those who may perceive some benefit.

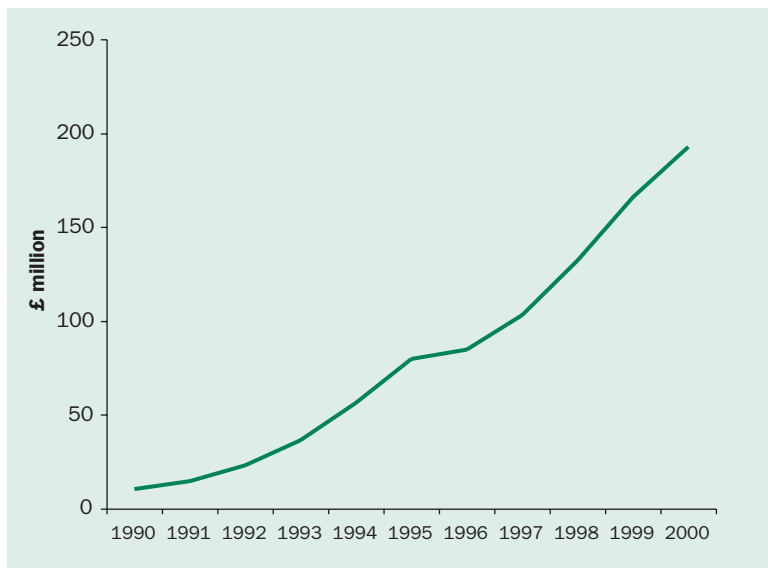
The public goods of farming are externalities. That is that they affect the value of the farming activity to society but do not appear in the farmer's accounts. Thus a loss of public goods will be perceived as a cost to the community but not to the farmer from whose actions it results. This is a particularly difficult area in which to attribute costs and benefits. The public goods may flow from the whole of a region, not just from the action of individual businesses within it. Whilst there is no doubt that many people attach some value to these goods, it is never clear how many or how much they would be prepared to pay to retain them. Essentially these goods are valued through a political process in which the farming interest is a very weak player. From the perspective of the proprietor of a farm business, which has known no cost in the past supply of public goods, the conventional argument, that policy should ensure that his business is made to bear the cost of any change of practice, seems both arbitrary and unfair. He has provided a valued output freely and now his blamed because the survival of his business means that he can no longer provide it.<sup>4</sup>

<sup>4</sup> It should be noted that this is not the same situation as arises where a farmer's actions result in accountable costs or benefits in another business but no cost in his own. These are also externalities and the appropriate course is to make the person who imposes the cost on another enterprise pay compensation. Equally, those who confer a benefit should be able to reward the farmer so that he receives some reward from continuing that course of action.

If we assume that we wish to enjoy a continued flow of past public goods then means have to be found of providing their owners with rewards which make it possible for them to continue practices which are unprofitable within the current economy. On the basis of this argument it is suggested that in future payments for the supply of public goods should become an explicit responsibility of government. Most of these public goods associated with farming fall into the broad area of environmental gains. However, there are others that could qualify. Sustaining rural communities can preserve social capital and minimise problems of social exclusion and the need for public funding of services previously provided by informal voluntary action. Maintaining a higher level of business activity in the countryside may make it more difficult for criminals to escape detection and so reduce the costs of policing.

Although it is relatively easy to identify a number of benefits which can be described as public goods it is much less straightforward to evaluate them in terms which lead to clear indications of how much should be paid to preserve them. The situation is complicated because for some sorts of public good there are powerful representative pressure groups whilst others may be largely inarticulate. Economists have made attempts to devise measures that might be used to guide policy. However, although such estimates are of great interest, they do not have the credibility of prices established in a competitive market. It is not the function of this paper to go into the methodology used or to retail the results they reach. Their importance lies in their ability to provide a readily communicated form of apparent justification for one type of expenditure rather than another.

**Diagram 3.2**  
**Expenditure on Environmental Schemes**



Ultimately, however, payment for public goods is a political decision. If the attempts at measurement prove misleading, then the political costs of actions based on them will be considerable. Currently, within the agricultural budget, environmental spending has grown considerably during the 1990s (Diagram 3.2), but it still represents only 6% of the total. If the whole of the remaining 94% were to be redirected to environmental this would raise very serious questions about its political acceptability. Payments on this scale would involve spending an additional £3 million on public goods. Such expenditure is likely to be the subject of fierce competition in public spending rounds, where expenditure on hospitals, education and pensions could readily absorb funding on this scale.

## Chapter 4

# What are the opportunities for British Farming?

This paper is written at a time of profound depression amongst British farmers and scepticism among other sections of society about the role of farming in this country. Such views are understandably conditioned by the remorseless series of misfortunes which have afflicted the industry and which damaged other sectors of the economy. It has set these events in the context of a changing economy and political consensus. Many of these adverse factors are temporary rather than permanent. Their lasting impact may be more significant in hastening changes in policy rather than in affecting underlying market developments.

The impact of BSE will diminish as the disease is brought under control and confidence returns. Once access to international markets is allowed, this sector may expect to recover. However, it will still have to contend for a share in the market which is highly competitive as consumer tastes change and other meats offer low cost alternatives. Foot and mouth disease has wrought havoc on the economy of some parts of the UK. It may further have damaged consumer confidence in meat. If we assume that the policy of eradication works and disease free status is restored, it will take some time for production to recover and the immediate impact on consumption to diminish. The longer run effects may be to hasten further the tendency for some people to use alternatives to red meat. Again, much will depend upon the ability to recover and retain export markets. This will take time, there is a substantial physical and psychological overhang affecting both the beef and sheep markets, but is not impossible.

Some other recent afflictions are more clearly 'one off' events. Floods, late, cold, wet springs have afflicted the industry periodically. They are damaging but it would be unreasonably pessimistic to expect, even if climate change is underway, their recurrence in a short period. The strength of the pound sterling in terms of the Euro has been amongst the most damaging problems affecting farming. Its output prices are much more immediately affected than its input costs. However, it is widely expected that eventually the UK will join the Euro but this seems unlikely until the Euro strengthens in relation to the pound. If that is the case farmers within the UK will be better placed to compete. International markets are depressed. This is not helped by the weakness of the US economy. However, it is characteristic of these markets that low prices are followed by surges as markets recover.

This paper is concerned to consider the long term changes to which farming will have to adjust. In the short term the survival of individual farm businesses will be affected by their management skills and state of indebtedness. The opportunities for UK farming as a whole to adjust to the long term pressures. In this process most existing farm businesses

will have to change, some will go and others enter the industry but ultimately it will comprise those businesses which, in the economic conditions that prevail, are profitable. This does not require that they should be the lowest cost producers in the world. What matters for these farmers is the price that reflects the overall interaction of supply and demand in the market within which British farmers sell their products. Traditionally this has been a protected market, insulated by the CAP or by UK agricultural policy from competition with the rest of the world. These barriers are being reduced. Gradually, both for sales within the EU and for exports beyond it, the equilibrium price that is critical will be determined by international markets not by the EU Council of Ministers.

**Diagram 4.1**  
**Real Price of Final Production**

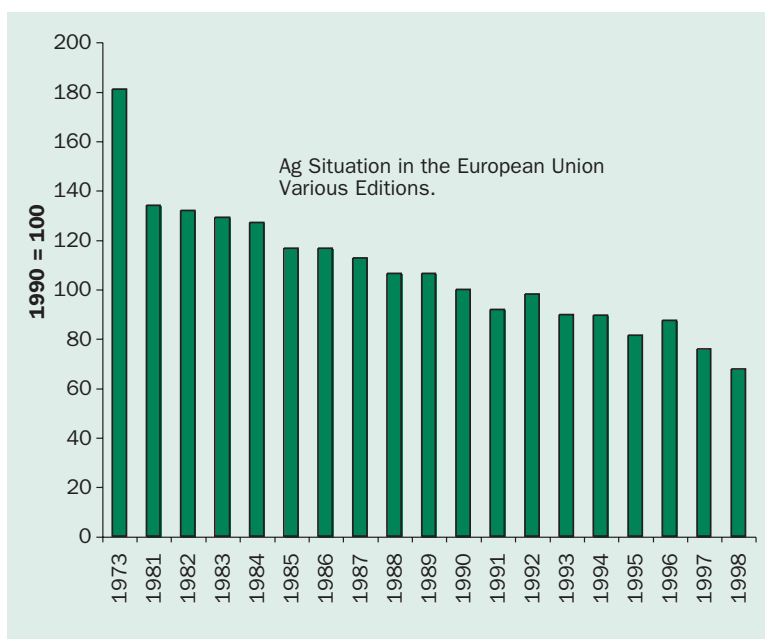


Diagram 4.1 show how the real price of farm products has been falling in the long term. Despite occasional upturns the direction of price has been downwards. Fundamental to the opportunities facing British farmers is whether this trend will continue. In the long run, given finite resources, rising real incomes in some low-income economies and rising population, demand will tend to outstrip demand. When that long run appears will depend upon the capacity of innovative technology to increase output and the degree to which new resources can be brought into the industry. In the period for which investment decisions have to be made now the prospect of a reversal in the trend may seem remote. More realistically farmers in Europe seem likely to come under pressure from more competition both in the internal market, as the EU is enlarged and from the world market as WTO negotiations lead to further reductions in barriers to trade.

## **The growing importance of the international market**

The Uruguay Round paved the way for trade in agricultural goods to be subjected to the same disciplines as trade in other products. There is still a long way to go before that state is reached and, as the slow progress of the Seattle round demonstrates, some powerful obstacles in its path. There are strong pressures seeking to impose more rules relating to the environment, to food safety and to the impact of labour practices on competitiveness. There are powerful voices, not least that of the EU, emphasising that farm businesses are about more than the production of food. Despite this it seems likely that there will be further reductions in subsidies which enable food products to be dumped in the world market and increased requirements to allow access to markets which have been protected.

It is probable that changes of this nature will form part of a wider international trade settlement designed to prevent all signatories subsidising exports or closing markets to imports. This is a radically different situation than has prevailed in recent decades. There, when international markets are overloaded, continuing low prices have depended on the willingness of rich countries to continue to subsidise production and the export of surpluses to the world market. An agreement to outlaw such forms of subsidy would not prevent the world market being volatile, but it should tend to lead to shorter periods of very low prices as farmers in all countries were forced adjust their production plans to the realities of market demand. It is also improbable that governments of rich countries would allow production to decline to a point at which there was anxiety about food security. Thus, within a more liberal market, some floor level of intervention may well be retained.

For European farmers, including those in the UK, this implies that the prices they receive will be increasingly affected by world prices. Payments from governments are likely to become increasingly de-coupled. This means that they must have minimal impact on the quantity produced. Continuing payments are likely to be tied to conditions that add to the cost of production. They are also more likely to be transparent, so they will need to be justified in competition with other calls on public funds. There can be no comfortable assumption that all that is involved is a re-labelling of support. The total amount of transfers to farming must be expected to decline. The timing of such a move from production related to de-coupled payments is impossible to predict, however, past experience suggests that it will be introduced gradually rather than abruptly. This provides opportunity for adjustment.

A first step to identifying the appropriate direction and scale of adjustment has to be to explore the underlying fundamentals that influence the long run level of prices for farm commodities. Here there are a number of positive factors.

The world market is growing both in size and, for some people, in affluence. As more countries pass through the early stages of industrialisation, demand for food will grow both in volume and in value. Part of this is a tendency for larger quantities of meat products to be included in diets which have been predominantly vegetarian. Part is related to improvements in quality, convenience and diversity. There are more people able to afford higher priced food provided it meets their preferences. In countries that are already affluent, continued growth may not lead to additional demand for the quantity of goods produced on farms - although it will create opportunities for more niche type products. However, the population of the countries now moving through the early stages of industrialisation is much larger than of the already affluent countries. This creates a situation in which a significant overall growth in the world demand for food must be expected<sup>5</sup>.

Most of this demand will be met by local production. However, some increased demand will spill over into international markets. Much of the growth in populations is likely to be concentrated in cities rather than in the countryside. This requires that an increasing proportion of the food provided would have to be in easily tradable forms, rather than the traditional bulky vegetables traditionally produced in rural communities. Within such a market there are more possibilities for exports, particularly for products which appeal to the affluent sectors of these cities. There is also likely to be a growing demand for food aid to cope with crises of supply among some of the weaker developing economies. Political factors in developed countries will determine how much food may be made available for such purposes. The reform of agricultural policy will make such costs more visible but in many of the richer countries television pictures of starving children and the activities of development NGOs provide persuasive arguments for continuing support for food aid.

Despite rising population the amount of food available per capita continued to increase in the world as a whole during the latter part to the twentieth century. The picture was not uniform. Sub-Saharan Africa experienced poorer availability; the result of a mixture of production problems and conflict. However, overall the tendency for supplies to outstrip demand led to lower real prices of food in international trade. Periodically shortages led to bursts of high price but these tended to be followed by lower price levels sustained over a number of years.

Looking ahead it is possible to identify several factors that will influence future supply levels.

- (i) The switch of government support in developed countries away from production and any agreements not to provide subsidies for agricultural exports will tend to restrain investment. This will tend to firm world prices.

<sup>5</sup> One Estimate suggests that demand for grains will rise from 1.9 billion tonnes to some 3.8 billion tonnes as a result of population growth. A F M C Calla Agriculture and Food Needs to 2025: Why should we be concerned. Sir John Crawford Memorial Lecture, Consultative Group on International Agricultural Research, Washington, D.C October 1994

- (ii) Policies imposed on farmers to reduce the impact of farming on the environment will tend to have at least a short run negative impact on the amount produced. In the long term they may enable a higher level of production to be sustained than would otherwise have been the case. However, the prospect over the next decade is that these will tend towards higher world prices. They may also result in a redistribution of production between countries.
- (iii) In some developing countries, notably China, income growth has been proceeding at a rate that exceeds the capacity of domestic agriculture to meet local demand. If this is sustained it will spill over into world markets and tend towards higher prices.
- (iv) There are concerns that existing technologies may not be able to sustain yields in some populous developing countries where problems of erosion and falling production may reduce supplies. Again this points to higher rather than lower prices in world markets.
- (v) There are considerable areas of the world, including parts of Eastern Europe and South America, in which existing farming practices lag behind existing farming technology. The prospect of higher prices may lead to more investment and a significant increase in output, in excess of that likely to be absorbed by the home market. The effect of such expansion will tend to hold prices down.
- (vi) The potential for new, more productive technologies seems to be substantial. Developments in biology suggest that it will be possible to overcome some of the constraints that affect current production in ways that are more sustainable than the present technologies. This can affect international food prices in both a positive and a negative direction. If new technologies open up new markets for farmed products, for example as improved sources of industrial raw materials or fuel, they will compete with food production tending to push prices up. In contrast prices may be affected negatively if new technologies improve plants and animal so that they produce higher yields or improve the usefulness of existing products by tailoring them better for existing purposes.
- (vii) As populations and income rise there will be increased competition for the resources farmers' use. This affects not only land, but also inputs bought from other sectors and labour. Rising costs will tend to discourage supply.
- (viii) The development of policies in low-income countries. This includes moves to allow the price of food in urban areas to rise, thus allowing market forces to stimulate domestic production. Experience in China demonstrates what a potent influence this can be. This will tend to diminish demands for imports, add to exports and so lower international prices.
- (ix) The impact of climate change. Here there is a balance to be struck between areas that are expected to become less productive and regions where productivity might improve. In such an analysis much will depend upon the geographical distribution

of investment. At this stage uncertainties associated with climate change itself and the capacity of the economic system to respond make it impossible to give any definitive indication of the impact on global supplies. The balance of contemporary comment is pessimistic but over the planning time period currently in view, it is more likely that policies designed to slow down climate change will have an impact rather than climate change itself. Such policies may make it more expensive to move food around the world leading to greater inter-regional price disparities. From a UK perspective they would tend to reduce competition facing domestic agriculture. Further, measures to encourage carbon fixing in forests may remove some land from food production, again with a positive impact on food prices.

The range of factors influencing food prices described here make it clear that confident statements about their future direction cannot be justified. Ultimately the long run downward trend in real food prices will come to an end. Competition for resources as incomes and populations grow will catch up with the increases in productivity technology makes possible. However, there is no immediate sign that this will be the case. More realistically, a successful outcome to international trade negotiations, especially if this incorporates some agreements relating to animal welfare and environmental impact, may cause higher prices as it is implemented. However, research into improved methods compatible with the new constraints will tend to encourage higher levels of production and a resumption of the downward long-term trend.

This need not be bad news for agriculture in the UK nor in Europe provided it has access to the new technologies and sufficient flexibility to apply them. However, the process of adaptation will be painful as high cost resources are shed and new competitive structures replace those that have continued only because of protection. Politicians are likely to face alliances of groups anxious to prevent change including a substantial body of new rural residents who wish to preserve the existing backcloth to their lives. In the more open world market that is generally expected to prevail, this will result either in increasing costs to protect an obsolete farming system via de-coupled payments or a sharply declining proportion of food supplies being generated within Europe or the UK.

Whilst it was acceptable for the UK to allow domestic agriculture to decline to a point at which it supplied a relatively small proportion of the country's food supply in the early years of the last century, such an option is not open to the EU. As a rich and relatively small part of the global system the UK could rely on the power of its purse and its navy to assure supplies, even if world shortages arose. The scale of the EU, especially after enlargement, makes such a scenario incredible. In effect, whilst the policy makers in Europe may face discomfort in agricultural adaptation and anger from the privileged affluent rural community, they will not allow these considerations to generate a situation in which there is a real danger of insecurity in food supplies. Those anxieties are likely to be vigorously voiced by member countries that have a substantial capacity to increase production at low cost.

The implication of this analysis is that within the European Union there will continue to be a substantial role for those parts of British agriculture, which are competitive. Two factors are likely to be decisive in determining how large an agricultural industry will exist. First its ability to devise and apply new technologies. Second, its capacity to articulate non-market values in a form which will justify public expenditure in competition with such activities as the health, education, roads and law and order. The remainder of this chapter looks in a little more detail at each of these and then attempts to draw the discussion together in the form of scenarios which embody differing ways in which competitive farming systems might evolve.

## **The potential of new technology**

Given a set of agricultural resources and a specific state of input and output markets, the ability to compete depends on the application of knowledge. Traditionally this has been handed down as a craft from generation to generation. In the modern world scientific analysis has provided a much better understanding of plant and animal growth and performance. This understanding is subject to continuing revision as existing accounts are displaced by more informed analysis. Differences in the flow of these ideas into practice have been one of the distinguishing factors between more and less successful agricultures.

The range of technologies involved is substantial. Developments in chemistry, in botany, in mechanisation have played a major role in the last century. Today information technology and biotechnology place the industry at the threshold of even more radical changes.

Information technology raises the level of control that can be exercised from a central point. By the automatic collection and processing of data changes can be detected in much greater detail and at much greater speed than ever before. The new technology penetrates every aspect of the food chain. It provides retailers and caterers with much more rapid and objective assessments of changes in consumer behaviour. Historical data can provide a more reliable basis for research into the determinants of behaviour, whilst the rapid processing of survey work can enable specific predictions to be checked more satisfactorily than ever before. Such information provides a basis for the businesses concerned to seek supplies that meet demand more precisely in volume and kind. As a result wastage is avoided and least cost methods of procurement can be put in place. In seeking supplies buyers can examine markets over a much wider area simultaneously. In effect information technology is enhancing competition.

For the retail sector exploiting such methods is not voluntary. Customers will choose to buy not only on price but because a retailer who is better informed will be able to offer a better service. Some part of this may be by direct electronic ordering for delivery by the retailer or his agent. Some part will be to enable the customer to identify opportunities of

interest to him at low cost and whilst they are still available. The chore of routine shopping can be minimised and the relationship between the customer and his supplier strengthened.

Greater accuracy at the retail level can be translated into lower cost in the supply system. Processing runs can be geared up to meet demands in volume and kind more precisely. They can be planned to optimise on the availability of raw materials in terms of specific market outlets. This helps to cope with the inherent variability of a production system open to the weather. The ability to differentiate markets in terms of their preference for differing types of farm product or differing cuts of meat can enable more to be earned from the same bundle of goods leaving the farm gate. Haulage can be organised to minimise empty loads and to use plant and machinery of appropriate scale. Within the processing activity itself better sensors can provide information that can be rapidly processed so as to ensure that quality standards are maintained and hazardous circumstances avoided.

Within affluent markets both retailers and processors need a stream of new products to offer their customers. Here information technology joins with food technology to provide a basis for attractive new packs designed to meet the changing life styles of the population. This is an area of relatively high risk. Most new products have a relatively short life but those that succeed provide a basis for success of even large businesses. In the most successful instances the market for such products is global and brands created which become household words.

Production on the farm is equally subject to transformation via information technology. Developments already outlined suggest an ever-closer linkage between the decision to produce at the farm level and the ultimate requirements of the market. Within the farm production system electronic control systems lie at the heart of what is called 'precision farming'. This is as yet in its infancy but as methods of collecting and analysing data improve, the opportunity to minimise cost and to minimise environmental impact at the same time will increase. Chemicals will be used when needed for plants or animals that actually benefit from them. Pesticides and herbicides will be applied in ways that are effective but do not attack non-target species or leak into the soil water system. Harvesting techniques will reduce waste and post harvest treatments avoid damage to the crop.

This brief discussion has pointed to a number of new technological impacts resulting from information technology. It by no means exhausts the list but it does draw attention to some key characteristics of development in the decision taking processes used in the agri-food sector. The first of these is the shift of influence into the hands of those who can accurately measure their market. This includes both retailers and processors; each focused on their own market. Less obviously it may create wider opportunities for farmers to sell directly to a clientele which they create and service. A second implication is that the cost of collecting and processing data per unit of output declines as scale increases.

This suggests that businesses, which form relationships that ensure a degree of continuity and confidence in each other, may be stronger competitors than those that rely only on the keenest deal at each transaction. Third, the capacity to monitor and collect information enables real flesh to be put on the bones of traceability. The monitoring system can be open to inspection by all those to whom guarantees regarding production systems have been given. The prospect is of a food system capable of providing a much higher degree of assurance to its customers than has been possible in the past.

Advances in molecular biology have given birth to biotechnology - the application of biology to productive activities. New insights into the determinants of the characteristics of living organisms and increasing ability to modify these offers the prospect of radical change in the way we value and use the living resources of the planet.

The exploitation of this new science is in its infancy but an area in which it is inescapably relevant is agriculture. Part of this is improving the functionality of existing plants and animals. Thus breeders can develop disease resistance. Herbicide and pest resistant varieties of plants can minimise the use of chemical plant protection products. Through the use of biotechnology a more systematic approach to breeding improvements becomes possible. This will accelerate the rate of growth of productivity for both plants and animals.

Plants have long been used as the basis of medicines but biotechnology offers the opportunity to produce new medicines, which can make a major contribution to improving the quality of life for both humans and animals. Developments in biotechnology have made it possible to use animals to produce medicines and may offer a new route to supplying organs for transplant into humans. They also offer prospects of new, more effective treatments of disease through the early identification of critical symptoms.

Biotechnology also offers prospects of developing industrial raw materials that have high value for manufacturers. The range of possibilities is enormous from new plastics, new fibres through to sources of affordable renewable energy for transport or electricity generation. Biotechnology can have major environmental benefits, not only reducing the pressure on non-renewable resources but also contributing to the removal of past pollution.

At this stage these possibilities have only begun to be explored. However, the evidence so far is that they will represent a transformation in the way we use natural resources quite as profound as that resulting from the application of chemistry, engineering and electronics. In economic terms these impacts collectively continue to lower the resource cost of producing existing outputs. They may also result in powerful new demands on these resources to match the need of growing industrial sectors of the economy. The extent to which non-food demand grows will be dependent on the costs of conventional non-renewable inputs. It is characteristic of many of these that they require very high levels of

fixed investment to commission but once in place the variable costs of continued production may be relatively small. Thus there may be a threshold, when major investments have to be replaced, at which biologically based substitutes become competitive.

In cultural and political terms the development and application of biotechnology is controversial. Some possibilities such as human cloning are widely regarded as unacceptable. Others, like genetic testing for predisposition for disease, raise acute questions for traditional ways of handling risk via insurance principles. For some groups the whole idea of manipulating genetic material by anything other than traditional means of plant and animal breeding is regarded as an immoral intervention in the processes of life. More generally there is caution about the potential but unproven negative impacts of using a new technology. These are commonly voiced in terms of environmental impacts but can extend into anxieties about the transfer of political and economic power to the large corporations who alone can afford the costly research from which new products emerge.

Communities vary in their reaction to these issues. In affluent and traditional societies including much of the EU negative voices tend to dominate the debate. There is a persistent questioning of the integrity of the scientist, of the objectivity of scientific committees that advise governments and a strong emphasis on possible but improbable catastrophic outcomes. Allied to a sense that 'things are alright as they' are governments are reluctant to confront such anxieties and readily succumb to the convenience of the precautionary principle. This avoids the need for decision now but does not take account of the long-term damage that may result from such inertia.

In competitive terms this can be considerable. Other communities, which feel more keenly the need to increase output or which are more ready to explore new technologies, will seek to make use of the new science. As they do so the real costs of production within their communities will tend to fall. The problems encountered will be assessed and appropriate response made and the biologically based industries move into a new era as different from contemporary production as today's methods are from those of the eighteenth century. For the UK and the EU this is a cumulative disadvantage. Ultimately it may prove so large that a major 'catching up' programme will be needed. However, that could prove structurally disruptive, costly and painful for the businesses that prove to be obsolete.

The implication of this brief exploration of emerging technology is that the size of a competitive UK agriculture will depend critically upon the responsibility with which governments approach its development, application and monitoring requirements.

## **The importance of non-market values**

The use made of resources is governed mainly by what people are prepared to pay for their products. Each use, however, generates a secondary set of costs and benefits that are not recorded in the market price. These will not figure in the accounts of a producer whose decisions must be taken in ways that respect what the market is prepared to offer. Many of these costs and benefits do figure in the accounts of other businesses. Thus an activity which makes water dirty will result in higher costs for other businesses which have to clean it before it can be used for their purposes. Equally, a tourist business built around the attractiveness of the countryside pays nothing towards the costs farmers incur in sustaining the economic activity that underpins such a landscape.

Where resource use is constant such costs and benefits tend to be taken for granted. As new technologies and new patterns of cost and return emerge the use of resources has to change. This reveals the hidden non-market values and tends to cause those who lose to seek political remedies. For agriculture in the UK, as the user of some 80% of the land area, these non-market values have become of central importance. Not only have they been under pressure as a result of the industry's response to market signals but also from increasingly articulate non-farming interests that have secured substantial political power. In the UK such interests tend to focus on environmental anxieties. In some other European countries there is an equal concern about the cultural impact of rapid changes in farming activity. This debate now forms an inescapable part of policies that will shape the future of agriculture.

Rising real incomes lead to increased concern about these non-market values. Rich people do not fear food shortages nor are they worried if food prices rise. However, they tend to be more mobile, to want to use rural resources for recreation rather than productive purposes, to be more informed and more articulate than those who are less wealthy. In the market place they can exert their preferences by offering prices for rural houses well beyond the means of most local residents. In relation to non-market values they are well organised, operate successfully in the political arena, drawing resources to the concerns they share either by regulatory intervention or through public expenditure.

All these arguments have to be resolved within an economic context. If the market no longer will support a flow of benefits that it is wished to retain, they will have to be purchased directly. The price paid will have to cover at least the difference between the profitability of the business when it makes full adjustment to the market and its profitability in a competitive market in which these adjustments are not permitted. If an attempt is made to secure the benefits simply by enforcing regulations that prohibit change, the effect initially will be to force the cost of this benefit to society into the private accounts of the farmer. In effect public goods are bought at private cost. If the difference is to be covered by payments from a public purse problems arise about determining just how much difference in profitability results and what value to attach to

the benefits and to compare these rationally with other uses for such public funding. The answers will not be the same in all regions of the UK or for all sorts of farm. None of these calculations are straightforward and all are subject to the influence of lobby groups.

In the converse situation where the change in resource use imposes a cost on other people. Where this can be directly related to the activities of another business, the farmer concerned should be required to pay compensation equivalent to the additional costs involved. If this is greater than the value of the new resource use within the farm business then it is clearly uneconomic. However, some of the costs of change in resource use cannot be attributed to specific other businesses, they fall upon the community as a whole. In such a situation a tax equivalent to the loss of value would be appropriate - but again the calculation of such a loss is problematical and the determination of which farm resource use change is responsible not always easy to establish. A particular problem arises where new methods may only result in social losses when they exceed a certain level of application. Here elegant solutions like allowing farmers to bid for the right to use the technology involved but retaining the aggregate rights issued below the damaging level can be explored. In practice such mechanisms may prove politically sensitive and administratively costly.

Within the UK there are three areas in which non-market values seem likely to play a major role in policy formation, land use, biodiversity and animal welfare. Within the European Union this list needs to be supplemented by a more specific concern about rural culture and traditional rural communities. Each of these needs some further explanation.

Land use issues have grown in significance as a result of additional demands placed on the land area in densely populated parts of the country. Increased mobility, greater affluence and the need to build more houses, roads and social infrastructure mean that in some locations land farmed often has much higher value in other uses. Planning legislation limits the areas that can be used for development and may also restrict alternative uses of farming buildings, which have become redundant to contemporary farming practice.

A number of consequences flow for agriculture. Security can become a problem as crops may be damaged, animals stolen or allowed to roam, machinery stolen and buildings vandalised. Relationships with the community can be soured as farming operations may result in noise, dust and dirty roads. In some cases new residents may object to animal noises long regarded as an inevitable feature of life in the country. Intensive units can come under attack, because of noise, smell or pollution. Those who simply want to get on with their ordinary lives see farm traffic, which can be slow, bulky and leave residues on the road during period of intensive farm work, as unacceptable. The outcome is often a resort to regulation by authorities dominated by members with no practical knowledge of farming. Such regulatory procedures can add to uncertainty both because they may depend upon the accidents of who comes to live in a particular village and variations in the rigidity with which regulations are applied.

Such local impacts on land use are of importance but national concerns tend to be with more general anxieties. Modern farming techniques do not need the fixed equipment of former methods of farming. Farm hedges, stone walls, traditional buildings all add character to a landscape and help to define it for the rest of the community. As they become irrelevant they may impede more productive systems and involve considerable cost to maintain. Their removal or gradual disintegration is seen as damaging by those who value traditional landscapes and who recognise that as they go, so the habitat for wild plants and animals changes and much of the variety and colour of the countryside may be sacrificed. Modern farming practice has also made it possible to drain land areas that have formerly been wetland. Again the loss of habitat impinges on the appearance and diversity of the landscape in ways which are regarded as damaging. Anxieties concerning the loss of hedges and wet lands have resulted in policy changes to protect what remains and to encourage replanting and the re-establishment of some areas of wet land.

The UK comprises a diversity of landscape types. How they are valued depends on personal perception rather than objective measurement but in terms of land use, society is tending to impose ever-increasing requirements on farmers. As it does so it affects the capacity of farm businesses to compete in the market place.

Land use and biodiversity are closely inter-related but the arguments which cause them to be of concern are rather different. The maintenance of a large genetic pool is increasingly recognised as a crucial economic resource. The tendency of farming methods is to concentrate on those plant and animal types that are most profitable. This leads to a narrowing of the genetic base of farmed livestock. Still more, the prosecution of successful farming means giving priority to economically valuable plants and animals at the expense of competitors. Thus 'weeds' and 'pests' are destroyed in order to foster higher yields of the desired species. Not only does the control of the competitor species remove them but it also affects a broad range of non-target species. Thus the insects upon which some species of birds feed may disappear and the bird population decline. Changes from spring to winter cropping regimes may make economic sense but remove essential habitat for some wild species.

Biotechnology has increased awareness of the importance of maintaining as diverse a biological system as possible. This has led to the creation of seed banks. It has also provided a new justification for the work of agencies that seek to establish breeding groups of endangered species. In terms of farm animals the work of the Rare Breeds Survival Trust maintains groups of animals which could not compete in terms of the contemporary market place. Such measures are clearly of importance for farmed stock. There is, too, a growing wish to ensure that farm land is used in ways which are more hospitable to declining wildlife species and that such areas should not be in isolated pockets but interconnected across the country.

Quite apart from its economic and scientific value, a countryside within which there are a diversity of plants and animals is itself regarded as a positive benefit by many people. Some may wish to see these creatures for themselves, many more to know that the fascinating animals they see on television are actually surviving in their own country. This amenity consideration goes beyond the strictly economic values of biodiversity. That might reasonably be met in terms of variety within the world system rather than in any particular place. The amenity approach requires that the non-profitable species are present in this country on the land farmed here.

This is a classical situation in which farmers, who may well be at the forefront of recognising the value of biodiversity and who actually enjoy it on their own farms, find themselves under competitive pressures to adopt practices which may conflict with this goal. Their awareness of these concerns is evident in the support they give for organisations like LEAF, who seek to promote integrated systems of farming which pay attention to environmental values and to FWAG which offers advice on how to farm both profitably and in ways which are helpful to wildlife. If, as the analysis presented in this paper suggests, competition is likely to increase, then it may be necessary to provide some additional payment for these non-market goods which are seen to be of longer run importance for society.

Meat and livestock products are generally bought in supermarkets, well separated from the live animals from which they originated. The animals that are most familiar to most consumers are pets and the images they have of farm animals a composite of early nursery rhymes and modern television presentations. The concept of farm animals as economic assets, dependent upon being produced at a profit for their existence, is alien to this rather detached world. To its credit there is a genuine concern for the welfare of animals and a wish to ensure that methods of production which impose stress on them are prohibited. The result is a growing body of legislation controlling the methods of livestock husbandry, which are allowed, extending to rules about the transport of live animals and the management of slaughter.

Farmers, too, are concerned that animals should be treated well. They often have a different perspective on what constitutes good and bad treatment. They also have to come to grips with the reality that the animals for which they are responsible have to pay their way. Thus culling male dairy calves for which there is no market demand is a routine practice. Cows whose yield falls or who develop diseases that are too costly to treat are sent for slaughter. Pigs are fattened in conditions that maximise the conversion of feed to flesh and hens produced in cages where lighting, food and water are regulated to ensure high productivity. Regulations that require changes in farming practice are often costly to introduce and enforce. They may also result in changes to systems that have different but possibly no less damaging implications for welfare.

There can be little doubt that more regulations intended to improve the welfare of farm animals will feature in the agriculture of Europe in the future. This stresses the need for more understanding of what constitutes animal welfare. It also has to come to grips with the realisation that in an open market rules which simply divert supplies from the farms which can be controlled to those that cannot, because they are in other jurisdictions, may have a negative impact on welfare overall.

In many parts of Europe there is a close association between farming activity and local culture. Within the UK hill farming and crofting play a central part within their own localities. For many people preserving such cultures, their language and traditions is an important goal. In an urban community which tends to become more and more uniform in dress, in the entertainment it shares, in the food it eats and in the family lifestyles which result, traditional rural communities can be seen as custodians of national values.

Critics may argue that these differences are unlikely to survive as more young people opt for a modern lifestyle and jobs that provide more rewards than traditional farming. The situation is far from uniform across geographical regions within the EU. In the European Parliament and among EU ministers there is a strong pressure to protect the family farm. Within the UK there are marked differences of circumstance and attitude. Thus in the discharge of their devolved responsibilities both the Scottish Executive and the Welsh Assembly have paid especial attention to the development of rural and environmental policy.

This discussion of non-market values recognises that UK farmers will face a growing degree of regulatory intervention. This may be accompanied by payments that enable the farm business to survive but it may also represent a real constraint in terms of competition within the market. A major difficulty in assessing the true cost of such intervention stems from the need to evaluate not what is lost from using existing technology but what might be the cost of preventing the introduction of new technologies. This will become an increasingly costly constraint if the regulatory procedures in this country bite more seriously than in countries with which UK farmers will have to compete.

Within the EU farmers face open competition in product markets. However, regulatory procedures imposed by member states create economic frontiers. Where these regulations differ, through their impact on the cost of inputs or the techniques that may be employed, they will affect the capacity of farmers to survive in the single market. From the perspective of the regulator, they may also be ineffective; open markets allow production to move towards those places in which regulations are least restrictive. This suggests that if many of the non-market goals are to be secured via regulation they will have to be determined and applied on an EU wide basis. The alternative is that they should be funded via the national public purse. However, given the varying strength of farm lobbies within the member countries of the Union there is no guarantee that such funding will not in effect become a means of competitive subsidisation.

The perspective of a more open world trading system may still be remote but raises many of these issues in an even more pressing form. There is a danger that environmental protection policies in rich countries may simply hasten the degradation of the environment in countries that desperately need to secure export markets. These matters are likely to form part of any negotiated trade settlement. However, as has been made clear by the incoming US government, where perceived national interest conflicts with the consensus view of a responsible environmental policy, they are likely to prevail. In such a situation the environmental policies that conflict with competitiveness may have an important influence on the viable size of the UK agricultural industry.

## **The opportunities for UK farming**

This chapter has explored the opportunities for UK farming as they affect both its revenues from the market and the impact of changing agricultural policies. To pull this together and prepare for the scenarios to be discussed in the final chapter it is helpful to outline three sorts of option for continued viable farming activity. These are not exclusive categories but treating them as separate helps to shed light on the key features likely to be relevant to their future.

The first group consists of farming activities which continue because the owners of the business enjoy farming and are prepared, and able, to make transfers of income earned in other activities to maintain the sort of farm and lifestyle they seek. There are already large numbers of such farms, many but not all are small. They include two categories, the first comprising farmers who are in effect trapped in farming by their age, their past investment commitments and for whom the perceived costs of ceasing to farm and working elsewhere seem unacceptable. Such farming activities will continue so long as the existing proprietors survive but when forced out by death or bankruptcy will not be replaced by family members. The second group consists of traditional hobby farms but also continuing family farms where members of the family are content to use earnings in other activity to underwrite the continued farming activity. Bluntly, the proprietors of such farming operations would be financially better off if they ceased to farm. Where they continue to do so it is clear that the values they attach to farming exceed such costs. Some of this may be easy to identify; for example a facility to keep horses, a degree of insulation from neighbours, the opportunity to fish or to shoot. Much of it is more intangible: a sense of family responsibility, a feeling for the countryside a delight in caring for animals. In economic terms this is a consumption activity. It is competitive in the sense that the combined revenue from what is sold together with the transfers willingly made by the owner are sufficient to retain the resources in their current use. In a growing economy there may be increasing numbers of people willing to buy farms on this basis, retaining land close to the residence for personal use and arranging for the remaining farmland to be used by neighbouring farmers.

The second group of farmers are competitive because they add to income from their traditional markets revenues earned in other activities. This diversifies the business so that even if the traditional farming activity alone does not yield a sufficient income, the total revenue from all sources is sufficient to retain the resources. There are many examples of such joint businesses already. The development of bed and breakfast activities, the provision of camp sites, the opening up of nature walks and the development of facilities for outdoor sports are all means of supplementing farm income. Farm shops may enable a farmer to add value to his own products and develop a retail business alongside farming activities. It is amongst this group of farmers that payments to farm in environmentally preferred ways may prove most attractive. At the moment explicit payments for such 'public goods' are on a relatively small scale but the commercial activities of some of these farmers offer a means of translating them into an income earning activity. Already we have schemes of this nature within the UK. ESA's, Tir Cymen and Countryside Premium payments have offered such an approach. New models of such relationships between the state and the farmer are likely to evolve in the light of experience. For example, such payments might be regionally determined; seeking environmental gains on a scale that exceeds the individual farm. Essentially among this group of farmers the farm business remains central but is part of a wider range of economic activities that generate revenue and some of which will be paid for by the state.

The third group of farms is currently responsible for most of the output of UK farming. It is essentially commercial, responding to market signals and using technologies that will maximise the difference between the costs incurred and the prices received. For this group of farms substantial adjustments lie ahead. Policy is shifting from supporting commodity prices to imposing conditions, and therefore costs, on input use. New technologies are open to competitors in the market. Those who fail to adapt will ultimately fail to survive. Precision in both the farming operation and the identification and matching of production to market need will grow in importance. Whilst some part of this sector will remain classical commodity producers, an increasing element will be looking for differentiated markets appropriate to the resources they command. Some of these may be niche local markets. Others may be distinguished in terms of the production techniques employed; organic farming is a clear example. Still others will see themselves as part of a larger chain of activity supplying inputs to major retailers and processors which meet their requirements in terms of type, quality and time.

## Types of farming strategy

Businesses remain competitive as long as the revenues they receive enable them to pay for the resources they use. The source of such revenue is a secondary issue. Conventionally it tends to be thought about as payments from the market. In agriculture market receipts have been supplemented by payments from the state through a variety of mechanisms. These can be seen as payments to farmers for benefits the state recognises but which are not paid for in the market. There is too, a hidden source of real income for many farmers. For them the farm itself can be a source of real satisfaction. In effect they are willing to pay to retain such satisfactions. They may stem from the farm work itself, its open-air character, its independence and the clear relevance of food production to human need. It may also happen because the farm provides a pleasant residence, as an area to accommodate the family's horses or to entertain one's sporting friends.

These three main sources have been categorised as Markets, Public Goods Providers and External Income.

Markets include but are not limited to traditional commodities. They also embody other activities that can add value, whether by direct sales to consumers, processing or meeting the needs of defined niches. All farm businesses are dependent to a greater or lesser degree on markets. However, the group categorised here as 'Commercial', see their sales of produce as their principal activity. Most will also receive payments from the government and have at least some external income. However, their driving force is the capacity to earn by selling conventional farm outputs at a profit. Both subsidies and non-farm income are subsidiary to profits from the farm.

In the UK most farms receive revenue from both the market and the state. These represent a substantial share of total farm income. They relate mainly to the production of commodities. However, it is clearly the policy of both the European Commissioner for Agriculture and the UK Government that support should shift towards other targets, the environment, the rural economy and the hardship faced by socially excluded groups in rural communities. Farmers may then have to consider how far they will focus on delivering the explicit 'social' outputs such payments are intended to provide. In some situations it may be more important to qualify for these continuing payments, even if it means adapting farming systems in ways which diminish returns from the market.

The range of targets for this type of payment is considerable. Some focus on habitat protection, the maintenance of wet land, flower rich meadows, hedgerows and forest. Others are concerned with the upkeep of the landscape, maintaining field boundaries, farm buildings and following patterns of cultivation or grassland husbandry which retain the characteristics valued by the public. Maintaining scientific assets, SSSIs, rare breeds of plants or animals and experimental sites is also seen as needing support. Some payments may be justified because of their contribution to sustaining local communities. In this

paper the term 'public good providers' is used to describe farmers who see their main source of revenue coming from the delivery of such goods and services.

A majority of farms have some income from outside the business. Here, however, the 'External Income' category is used to define farmers whose activities would not continue in the absence of such income. The group ranges from wealthy city dwellers who seek a country place for their families to people who seek to contract out of the commercial world and wish to be as self-sufficient as possible. Importantly it includes many part time farmers and households in which a major share of income is earned off the farm. Income from markets and the state matters but the decision to remain in farming is not based on this alone. As long as other sources of income permit they will not leave the industry. In effect because they can retain the resources they use in farming, such farms must be classed as competitive.

It is obvious that these categories overlap and that an individual farm may move from one group to another. However, they enable us to distinguish three groups who may adopt rather different strategies in planning their future. This provides a convenient starting point to explore how differing farm businesses might respond to the sorts policy scenario to be explored in the next chapter.

## Chapter 5

# Scenarios for a Competitive Agriculture

This chapter explores the prospects for a competitive agriculture within the UK its starting point is to set out some policy scenarios. Essentially these involve assumptions which can be explored in terms of the implications for farms that adopt different strategies outlined in the previous chapter.

As in all scenario approaches, the assumptions impose a defined pattern on potential options, which in reality vary in infinite degrees. Scenarios do not attempt to model reality or to make predictions. Rather they help to explore the significance of some key variables for alternative types of strategic approach.

This chapter discusses three sorts of approach to the development of the Common Agricultural Policy. It then examines each of these in terms of the opportunities and threats they present for farmers adopting any of the strategies discussed above. The results of this include a great deal of detailed speculation. They are presented as tables in an appendix to the chapter. They are no more than a starting point but can be useful, if they are thought through by each decision taker in terms of his own assumptions about policy.

### **Policy assumptions.**

Within the EU all member countries must apply a Common Agricultural Policy. This has been the principal, but not the only, means by which the state has influenced the development of agriculture within the Community. As indicated in Chapter 3 the CAP has had to adapt to changing political and economic circumstances. Looking ahead it is evident that existing policy will have to adapt further to meet the circumstances that lie ahead.

It is thus necessary to consider not so much the current CAP as the directions in which it might be reshaped. There are a large number of policy instruments, which can be combined in many different ways. Here, this complexity is reduced to four contrasting routes for the development of the policy.

- (i) A fully liberalised CAP in which prices are determined within an open international market and public support provided in a wholly decoupled manner. This being restricted to a small list of public goods and social needs. This is labelled the CAP Lib scenario.
- (ii) A CAP based on maintaining the multi-functional nature of farming. Prices for commodities fall but public money is used to maintain the non-market benefits of

farming. Policy mechanisms are designed to reward farmers for benefits society receives other than food. Many more farm businesses are protected than under scenario CAP Lib but the emphasis shifts from commodities to public goods. In Community jargon this represents a move from the first to the second pillar. Here this is referred to as the CAP MF scenario.

- (iii) The third scenario envisages a CAP that sets rules defining the purposes for which member governments may assist farming. It leaves the ways in which they are implemented to national authorities, subject to their monitoring by the Commission. This is called here the CAP Repat scenario.
- (iv) The final scenario consists of a CAP that remains primarily a commodity policy. Environmental and public good concerns may be represented by cross compliance conditions and discrimination in favour of small farms but the share of direct expenditure on environmental policies in total CAP expenditure does not increase. This is called the CAP Stat Quo scenario.

These scenarios are set against the context of the current debate about the CAP and the constraints with which policy makers have to deal.

First, there is a need to reassure WTO membership that there will be a greater degree of agricultural trade liberalisation between the Union and the rest of the world. This is a major goal for many WTO participants and without some concessions little progress can be expected on the areas of international trade of greater importance to the EU,

The impact of the Uruguay Round has been progressive and partial. Internal price support has been reduced and some constraint placed on production through set aside. Compensation payments for price cuts, now extended and known as direct payments under Agenda 2000, have minimised the immediate effect of this on farm incomes. The restrictions on the volume and amount that could be spent on subsidised exports have become more significant as output creeps up and world price levels declined. Despite this it is clear that producers within the EU still enjoy a substantial measure of protection in relation to third country suppliers. Further liberalisation as agriculture is brought more fully into line with accepted rules for international trade will call into question these direct payments, because they are still related to production. It will also scrutinise other forms of payment for their impact on costs and returns. The WTO rules are designed to remove barriers to trade, whether by tariffs, quantitative restrictions or any other devices that frustrate international competition.

This continues to be the situation despite the fact that the decline in world agricultural prices has muted the enthusiasm for liberalised trade. Faced by crises, governments, not least in the United States, have continued to support farmers, using devices that they claim to be consistent with open markets. Nevertheless there remains a broad acceptance

that remaining barriers to trade in agriculture must be dismantled and, if governments wish to preserve some aspect of existing farming practice, they must do so by methods which are transparent and decoupled. Precisely what policies fulfil these requirements is not fully understood but some negotiated code of practice may well emerge dividing the acceptable from the unacceptable forms of internal support. In the current climate such a code seems likely to embody criteria relating to environmental and animal welfare concerns as well as traditional social and cultural considerations. If progress is made in this direction a gradual approximation of internal and external prices is likely to take place within the EU. It is to this scenario that the CAP lib category would apply.

Second, since the initiation of the Agenda 2000 debate, the multi-functionality of EU agriculture has become a focus of EU policy and the subject of debate within the WTO. It stresses the well-known characteristic of farming that its impact on the community cannot be fully expressed in terms of food production alone. Farming practice has determined the landscapes and habitats of the Community. In social terms farming, until recently the dominant rural economic activity, has played a major role in sustaining rural communities. It has provided employment on the farm and in related businesses. It has sustained local traditions and supported activities such as hunting, fishing, village fetes and the local sports teams.

Changes, whether as a result of new technology or of competition from lower cost suppliers, lead to different land use and landscape patterns. In the past few decades some radical changes have already taken place. Farming is designed to give preference to plants and animals of economic value over those that cannot be eaten or sold. The more effectively it does this the more it removes competitive species. This diminishes biodiversity, it has an impact on the amenity value of the countryside and it may also reduce the options open for future generations, both in terms of lost physical heritage and as the outcome of a narrowing of the genetic basis of farming. The pace of these changes, their dependence upon inputs of fossil fuels and their capacity to make radical changes in water tables, soil characteristics and wildlife have brought to the centre of debate the issue of sustainability.

This has led to pressures for change in the CAP, quite apart from those originating in the international market. If the CAP has to change, one approach is to use public funding to make up the gap between what a competitive market will pay for food and the revenues needed to maintain a diverse multi-functional agriculture. Defining these non-market streams of benefit and determining what is the most efficient means of securing them is difficult. If these payments are to be consistent with WTO commitments it will be necessary to make certain that they are accepted as decoupled. This is hard to prove. International critics are concerned that multifunctionality does not become simply a new formula to prevent change and obstruct genuine competition. Multifunctionality remains the preferred strategy of influential forces within the EU including both farming and green lobby groups. Just how it is delivered will have to be negotiated but here it is used as a second scenario for the future and referred to as CAP MF.

The third CAP scenario, CAP Repat, is based on the conjunction of two considerations. If CAP policy is to move from protecting commodity production to supporting environmental and social goals, then the detail of its application cannot be uniform across a community as diverse as that of the EU. Within the Union not only do the physical characteristics of the farming environment vary but also the consensus view of local populations about what is important differs. Secondly, if the EU is enlarged to the East, the budget and trade implications of applying the existing CAP to all members of the enlarged Union are unacceptable. To avoid this it is suggested that within rules set by Community, the implementation of agricultural policy should revert to the Member State.

Each state would bear the costs of the decisions it made. Where these represented benefits to the whole EU co-financing would apply. Additionally EU funding would be used to help economic development in the poorest agricultural regions of the enlarged Community. The Agenda 2000 settlement already envisages some steps in this direction. Countries are responsible for implementing agricultural environmental policy and for the applications of funds modulated from commodity based direct payments. The scenario developed here, as CAP Repat, takes this further so that implementation of common rules which constitute the CAP becomes the responsibility by the member state.

Within several member countries there is resistance to the idea that internal should be exposed to any increased competition from world markets. Maintaining such a policy in the context of the expectations of WTO negotiations seems likely to require minimally that steps are taken to ensure that they do not generate subsidised exports and to increase the accessibility of the EU market to imports. This implies some form of extended quantitative limitation on production via quotas, set aside or restrictions on the number of hectares cultivated or animals kept. Administrative convenience and social priorities would be most likely lead to discrimination against larger scale producers.

The final scenario, CAP Stat Quo, embodies the notion that ministers take the view that the fundamental commodity based nature of the CAP cannot be changed.

The funding of such a policy would present problems, not least in an enlarged EU. However, if internal prices are maintained by limiting supplies reaching the market, an important part of the cost will be borne by consumers rather than taxpayers. It may be difficult to attain political acceptability for this in some applicant countries where food accounts for a larger share of consumer expenditure

The examination of strategies which follows is presented in three tables, one each for farms whose driving forces are described as Commercial, Public Good Providers and External Income. The tables and discussion of each of the cells is presented in the appendix at the end of the report. However, at this stage it is helpful to discuss a blank table.

Each table attempts to set out the opportunities and threats for farms pursuing the strategy indicated under the various scenarios for the development of policy.

## Scenarios for Farming in the UK

### Farming Goal (commercial, public goods, external income) Opportunities and Threats

| a 1 Farming Strategy     | 2            | Sources of Revenue |                            |                   | Sources of Risk |                            |                   |
|--------------------------|--------------|--------------------|----------------------------|-------------------|-----------------|----------------------------|-------------------|
| b                        |              | 3 Markets          | 4 Payment for Public Goods | 5 External Income | 6 Markets       | 7 Payment for Public Goods | 8 External Income |
| c Commercial Farm Sector | CAP Lib      |                    |                            |                   |                 |                            |                   |
| d                        | CAP M F      |                    |                            |                   |                 |                            |                   |
| e                        | CAP Repat    |                    |                            |                   |                 |                            |                   |
| f                        | CAP Stat Quo |                    |                            |                   |                 |                            |                   |

In this table + means greater, either more revenue or more risk - means less, either less return or less risk

= Means neutral or incapable of deciding in which direction the variable points ± means the outcome could be positive or negative but will not be neutral.

Column 1 indicates which farming strategy is considered, Column 2 the CAP Scenario under consideration. Row b indicates that the sources of revenue and the risks facing farming under each CAP scenario. It looks at each of the revenue sources for farms under each strategy. It then examines the sources of risk associated with each revenue source. This is important because whilst the main revenue target of different strategies vary, all will expect to receive some benefit from markets, public goods or external income. Rows c, d, e and f then look at each CAP scenario in turn. The footnote indicates that a subdivision of each cell has been used to indicate the general direction of the impact under the scenario considered. This is accompanied by a short verbal entry and a rather longer note in the text.

It must be stressed that this device is more important in inviting the reader to reach his own conclusion about the issues raised rather than in providing ready made solutions. The cell entries are serious but they are not predictions. As policy unfolds different sorts of entry will become appropriate but the same sets of question will still have to be addressed.

## Chapter 6

# Agriculture in the UK its role and its Challenge

Chapter 5 attempted to explore scenarios for UK farming under a number of scenarios relating to the development of the CAP. It has simplified the discussion by separating out commercial, public good providers and farmers who rely on external income. This should make it clear that what is presented is not any sort of a forecast but rather a set of considerations which any farm business facing the uncertainties of farming in the coming decade needs to assess for itself.

However, there are a number of issues which recur and it is worth while to draw these together in thinking about the future of farming in the UK.

First, the prospects for all farms depend heavily on the future state of the UK economy. The conventional assumption is that it will continue to grow and that the UK will remain part of the EU. Should either of these prove false then a complete re-thinking of strategies for farms would be needed.

Second, the development of the CAP is critical. It remains an important means of isolating farmers within the EU from the full impact of external changes. It is assumed here that the degree of isolation will be reduced but is not likely to be wholly eliminated over the next decade. This means that the farmers will face more price uncertainty internally. It also implies that the overall trend of world prices will become of greater importance as the EU agricultural economy becomes less protected.

- (i) The impact on the role of UK farming depends heavily on the balance at a global level of the growth of demand and supply. Both seem certain to increase and although there are some signs that it may be difficult to sustain the rates of growth in productivity achieved in the final quarter of the 20th Century, it still seems that there is sufficient unused technology to meet prospective demand in the medium term.
- (ii) In the longer run resource constraints will outstrip productivity increases. However, this is not the assumption that underlies these scenarios, which relate to only two decades ahead. Should that prove false then a very major revision of the analysis would be essential.

Third, a key determinant of the capacity of the agricultural sector of the UK to compete will be its ability to discover and apply appropriate new technologies. Several elements are involved.

- (i) The extent and direction of research effort. In the UK this is currently under pressure in both the public and private sectors and there is a significant movement of research capacity out of this country. The combination of lukewarm governmental support for production related support and the toleration of activist groups prepared to threaten and disrupt research of which they disapprove has created a negative climate for agricultural research.
- (ii) Public attitudes to new technologies. It is clear that there exist techniques that could improve productivity, which are either not used or less used than would be profitable. One reason for this is the sustained opposition to established techniques such as the use of pesticides. Here there is abundant evidence that residues in food, where they can be detected, are at such a low level as to pose no threat to human health. However, the hostility to the technique impedes the development and use of pesticides which could be applied effectively in smaller volumes and would have less unintended environmental impact. Similar attitudes have prevented food irradiation making the contribution it promises to the reduction of food borne diseases and is frustrating experiments to test the environmental safety of genetically modified foods.
- (iii) The transmission of research into practice. Although substantial concentration has taken place in the farming sector, farms remain relatively small businesses. This means that a single manager has to take decisions over a wide range of issues. In most of these he cannot be expert. To overcome this extension services have operated in most countries, bridging the gap between research and application and feeding back to researchers information about the practical use of their products. This system has largely disappeared in the UK. Technology transfer still takes place, much of it embodied in products the farmer buys. However, the motive is commercial and the farmer may lack objective guidance about what product to use and what quantity he requires. As a result the misuse and in some cases the under use of technologies continues.
- (iv) The existence of a trusted system of monitoring new technologies. One of the enduring costs of BSE has been a loss of faith in the monitoring processes within the UK. This not only undermines public confidence and strengthens opposition to innovation but it adds to the real risks society faces. The outbreak of Foot and Mouth Disease in 2001 has shown again how the lack of sufficient trained and publicly paid experts on the ground has contributed to the problems of control.

If these issues remain unaddressed then the implication has to be that the gap between the levels of productivity of UK farming and that in other countries will grow. Fewer farms will be able to make a profit in this country and the industry will contract.

Fourth, there is a considerable interest in seeking to reward the non-market benefits which traditionally farming has provided, directly. In its negotiating stance for the WTO the EU has made much of multifunctionality. In the CAP reform process much is made of the second pillar. Within the UK the conventional wisdom is that funding should be redirected to environmental objectives. These are significant moves but it is critical to have a realistic understanding of the dimensions involved. Currently some 80% of farm revenues are derived directly from the market. Of the remaining 20% some 18% is paid by the state in respect of commodities, only two percent is currently received for what has been called 'public good' production. Whilst there are no great difficulties in doubling this 2%, there would be real problems in seeking to replace lower prices and the entire commodity related subsidies by such payments. What is implied is a major loss of revenue to the sector. In turn that makes a radical restructuring of much of farming inevitable.

Fifth, the markets for farm outputs are primarily to large-scale organisations in processing, retailing and catering. For these concerns safety, quality and reliability in supply are critical. In competition with each other they must also seek to secure supplies at least cost. Dealing with large numbers of small-scale producers is expensive and adds to their costs. Buying from traditional markets does not provide the assurance about provenance that they need. There is thus pressure to source supplies from larger organisations that can deliver, whether these are in the UK or abroad. UK farmers who wish to compete in this market have to accept the disciplines and loss of independence this implies. They may do so either by acting together through groups or co-operatives or as a result of contractual links to customers who set the terms on which they do business. This amounts to a radical change in business structure rather than in the ownership and operation of farmland. Already some farm groups have responded to this. Those who have not face the probability of becoming marginalised in the future.

Sixth, each of the scenarios is based on the assumption that CAP reform will lead to greater price volatility. This may prove to be only one of the ways in which the state is diminishing its willingness to underwrite the risks involved in farming. Critics of current policies suggest that the industry itself should cope with the hazards that are an inherent part of farming activity, weather and disease. How far the state pulls back from its current commitments is far from clear but this is a direction in which policy is moving. The implication is that farmers will have to explore new risk bearing strategies in the future. Some of these may be met by using futures markets. Some may represent a redistribution of risk between the farmer and his customer and suppliers. In some cases the risks may be offset by investments in businesses which are outside farming or involve producing a different mix of products or spreading investment into different countries. For commercial farms an explicit risk bearing strategy seems likely to become a pre-condition of funding.

The object of Foresight is to help those who have to make decisions to anticipate the future. At the outset of this paper the very difficult situation currently facing many UK farmers was stressed. Whilst some improvement may be anticipated as some of the immediate pressures ease, this paper has stressed that UK farming has to confront a long run process of adjustment. Part of this stems from policy changes. Much of it is the result of the autonomous development of markets. However, this does not mean that there will not remain a very substantial UK farming sector, meeting the real needs of this community and doing so in a competitive manner. The process of adjustment will be painful but it is one from which the whole society gains and to which appropriate policies can make a significant contribution.

# Appendix

## Scenarios for farms adopting differing strategies

### Scenarios for Farming in the UK

#### Commercial Farm Sector Opportunities and Threats

| a 1                      | 2            | Sources of Revenue  |   |   | Sources of Risk   |   |   |
|--------------------------|--------------|---|---|---|---|---|---|
| b                        |              | 3 Markets   | 4 Payment for Public Goods                            | 5 External Income   | 6 Markets   | 7 Payment for Public Goods  | 8 External Income   |
| c Commercial Farm Sector | CAP Lib      | EU Market –<br>Food Manufacturer +<br>Food Distributor +                | Some Revenue =<br>but some Restrictions               | Possible source of added income +<br>Land price may be raised – | More volatile Markets +<br>Trade risks ±<br>Technology lag +<br>Regulatory hazard + | Changes in Policy +<br>Public Funds cut +<br>Loss of flexibility +  | Failure of external business +<br>Failure of diversified income +                       |
| d                        | CAP M F      | Quota Restrictions –<br>Structural Reform Impeded –<br>Smaller Market – | More importance as source of revenue ±                | Diversify +<br>Flexibility –                                    | Volatile markets but less so than +<br>fully commercial farms Quota limits +        | Greater risk from policy changes +<br>More exposed to budget cuts + | Failure of external business +<br>Greater hazard from failure of diversified business + |
| e                        | CAP Repat    | Level Playing field –   | Less support than competitors –                       | Becomes of more importance +                                    | Competitors treated more generously +   | Regulation rather than subsidy +                                    | Greater exposure to disturbances elsewhere in economy +                                 |
| f                        | CAP Stat Quo | Supply control –<br>Environmental conditions –                          | Support for smaller farms +<br>Environment Emphasis – | Growth in importance +  | Sht run price stability +<br>£/€ rate. –<br>Environment –                           | Eligibility for support ? –<br>Constraints on production –          | External disturbance –<br>Diversified income +  |

In this table + means greater, either more revenue or more risk - means less, either less return or less risk

= Means neutral or incapable of deciding in which direction the variable points ± means the outcome could be positive or negative but will not be neutral.

## Opportunities for Commercial farms in Markets (Column 3)

### CAP Lib scenario (c3)

By definition Commercial farms derive their revenue from the market. Within the EU the real price of commodities is likely to decline. It is not likely to fall to the lowest world price levels seen in recent years but it cannot be sustained at the sorts of level currently underpinned by the CAP. Still more, the markets are likely to become considerably more volatile. UK farmers face a double hazard on this score. Not only is the price within the EU Euro countries likely to fluctuate more widely but as long as the UK remains outside the Euro system, farmers here will encounter additional shocks as the currency values shift. Overall those who seek to compete in this market must set their sights on securing lower unit costs. That can be achieved through structural reform and new technology but the clear implication is that fewer farm businesses will remain viable under these circumstances.

Commercial farms will be the main source of raw material for who will source their requirements where the quality and delivery terms they require are available at least cost. For a CAP lib scenario this implies that EU producers will have to offer a bundle of quality and price which is more attractive than that available elsewhere in the world. This is not unthinkable. For processors certainty of quality, hygiene, availability and the ability to add to commodity products distinctive 'regional' or 'own brand' labels are important. There is no reason why a well-organised agriculture within the EU should not offer this. It can do so within a secure political climate, using a sophisticated infrastructure of communications and transport facilities and operating in a single currency and to a common set of laws. This is a battle still to be fought but for commercial farmers it should be seen as an opportunity.

Large scale food retailing and catering will remain the principal route through which consumers access their food purchases. The pattern of their business will change in response to new lifestyles and to new technologies, not least electronic markets. However, they will remain overwhelmingly the dominant buyers of raw material and processed foodstuffs. Competition between these major organisations will mean that each will seek the best terms it can achieve in its procurement policies. Inescapably this must include price. However, price is not the only characteristic that is critical. Food safety is a pre-requisite, not just in terms of legal obligation but even more in relation to maintaining the image of the brand. In an affluent market the discrimination of particular niches prepared to pay more for some characteristic of a product is one means of securing customer loyalty as well as premium prices. In such a market assurance about safety, certainty about quality and an ability to show that the 'niche' product fully meets the expectations of the 'niche' customer is of commercial significance. UK farmers because they have a major EU market on their doorstep are in a position to provide such added value. In competitive terms this is an opportunity rather than a threat. Thus in the table Fd Dist has been given a plus.

### **CAP MF scenario (d3)**

Markets for Commercial Farms given a CAP MF approach would be changed in a number of ways. First, as a price for accepting the subsidies paid to EU farmers under the multi-functional label, other countries are likely to require some additional measures to constrain the volume of farm output within the Union. This offers a safeguard against indirectly subsidised export competition and can allow an increased proportion of EU markets to be open for imports. Commercial farms would not escape such constraints. In effect the opportunity to expand would be diminished. Second, in some countries at least the approach to multi-functionality is closely linked with retaining the existing structure of small family farms. If policies are implemented to secure this, they will obstruct the structural reform needed to enable Commercial farms to compete in the market. Third, the continued existence of a high proportion of traditional farms will make it more difficult to secure on a national basis the standards of quality, safety and certainty of supply that the market needs. As a result this is a scenario likely to offer fewer opportunities for commercial farms.

### **CAP Repat scenario (d4)**

The impact on Commercial farms of the repatriation of CAP responsibilities depends heavily on the relative willingness of treasuries in member countries to support their own farm sector. This is a highly political decision but it seems probable that the UK would be less generous and more inclined to make any aid highly conditional than most of its major EU competitors. If all these supports were genuinely decoupled, i.e. had no impact on the level of output, then the situation for commercial farms would vary from the CAP Lib scene only in so far as national policies in support of environmental or social goals impacted on the price of the inputs. If the opposite were the case, then commercial farms would face subsidised competition from other EU producers and their share of the market would be diminished. It is an indication of the relative friendliness of financial ministers to farming within the member countries of the EU that leads to a negative sign in this part of the table so far as UK farmers are concerned.

### **CAP Stat Quo scenario ( f4)**

The position of commercial farms under a status quo scenario is likely to be dominated by the need to control production within limits consistent with international trade obligations and budgetary constraints. The operation of supply control systems is likely to discriminate in favour of the smaller, family farm. If the UK were allowed to operate controls within a national ceiling, then it is possible that there would be less discrimination against larger farms but there might be a greater emphasis on protecting farms in areas of environmental importance. Compensation might be provided in the form of payments for some public goods but the ability of the more market driven farms to compete on a global market would be reduced.

## **Opportunities for Commercial Farms to supply public goods (Column 4)**

### **CAP Lib (c4)**

Commercial farmers are seeking revenues primarily from the market. This does not exclude them from competing to provide public goods where this is consistent with their overall business strategy and a productive use of the resources they control. In a liberalised CAP policies which sought to reward farmers for public goods would need to pass the test of international scrutiny to ensure they did not distort trade. Subject to this there is no reason why Commercial farms should not benefit from revenues made available in this way. However, such revenue may be tied to conditions that limit the commercial flexibility of the farm business. If that is the case, although the reward offered might be attractive taken in isolation, its longer run cost may prove to be much higher. Thus for this category the relevant sign must be neutral.

### **CAP MF (d4)**

If the shape of CAP follows the multi-functional route, then payments for public goods seem likely to become a much larger source of income. This will clearly change the balance so far as commercial farmers are concerned. Some may decide that they should shift to a 'Public good provider' strategy. Others, that they will accommodate constraints on production by intensifying production in part of their business and releasing resources elsewhere to deliver public goods. It might become rational to divide larger farms so as to capture public good payments on one, whilst pursuing a reduced commercial activity on others. The outcome is unclear because it depends not only on the aggregate sums made available under this heading but the details of the way in which they are applied. The effect will not be neutral. For those farmers who can readily meet the criteria it can be strongly positive. Those who cannot may have to contend with restricted markets and face subsidised competition from other farmers.

Within the CAP MF scenario, rewards for some aspects of traditional agriculture may make it more attractive for some external sources of income to invest. This might strengthen the demand for small farms and underpin some types of part-time farming. Commercial farmers might diversify their own activities into new markets and thus generate sources of additional external revenue for their own business.

#### **CAP Repat (e4)**

CAP repatriation provides a basis for lobby groups to argue for public expenditure to reflect public preferences for land use within the UK. These are not generally associated with commercial farming. Funding is likely to focus on wildlife, especially birds, on landscape and access, on preventing pollution and hill farming. For commercial farms operating in a climate of intensified international competition this is unlikely to offer the same level of support as competitors elsewhere in the Community enjoy.

#### **CAP Stat Quo (f5)**

Payments for public goods represent one device by which the incomes of existing farmers might be increased. There are likely to be difficulties in terms of demonstrating that such payments are decoupled. Budget constraints will also tend to favour the smaller producer and those situated in regions where environmental benefits capture public support.

### **Opportunities for commercial farms to derive revenue from external sources (Column 5)**

#### **CAP Lib (c5)**

In the UK there has been a tradition of money made in other sectors flowing back into farming. This may well continue under any of the scenarios of CAP reform. More important will be the demand for farms and farmland. If a larger number of people securing wealth on a scale which tempts them to buy in to this sort of lifestyle, much of the inflow seems likely to be into relatively small scale activities rather than grand estates. This may provide a source of revenue for some commercial farmers if they are paid to undertake the management of farmland. It may also tend to maintain land prices at a higher level than would otherwise be the case. This could impede structural adjustment.

Some commercial farmers may also seek to diversify their mainstream farming activity by adding a contract service based on existing capital equipment and staff. In some cases buildings may be used to bring in additional income from other sectors such as, cottage lets, leisure activities or crafts. However, these types of revenue will remain secondary to the principal business of earning an income in the market.

#### **CAP MF (d5)**

For Commercial farms some of the grants offered under the multifunctional assumption may provide new opportunities to diversify. However, a major commercial consideration is the extent to which the farms lose flexibility as a result. Given the uncertainty of markets and the potential of new technology to change costs substantially, to be locked into an arrangement under the MF scenario might compromise ability to compete in the commodity market.

**CAP Repat scenario (e5)**

For UK farms the prospect of CAP decisions being implemented by a UK government is not comfortable. There is little political support for farming, compared with that in other EU member countries and there are strong competitors not only for funds but also for the resources farmers' use. Given that background, farmers who rely on markets might well reconsider the distribution of their investment between farming and other activities.

**CAP Stat Quo scenario**

Farmers will be under pressure to invest outside the farm. This may be in other rural activities or simply into stocks and shares. Some farmers may choose to sell up and invest in farming outside the EU.

**Risks facing Commercial Farms in Markets (Column 6)****CAP Lib scenario (c6)**

Commercial farms face both lower and more volatile prices. The extent of such risks will hinge on the extent to which the EU market is opened to global competition. In a CAP Lib scenario trade would ultimately become unrestricted. However, there are intermediate positions at which, by international agreement, market intervention is permitted to avoid internal price collapse as a result of imports.

Trading relationships with large-scale customers such as processors and retailers are also a source of risk. Where long term contractual relationships exist, risks to farmers during a season, or even over a series of seasons may be reduced. However, when such contracts account for a high proportion, if not all a farmer's sales the loss of a contract could be disastrous. These hazards will be even greater if contract trading accounts for large proportion of the market. The open market price, in such a situation becomes little more than a 'clearance' price. This is not likely to cover production costs.

The ability to continue to compete in a market depends upon the capacity to devise and apply improved technologies. There is a risk that farmers within the UK may be denied access to technologies that increase productivity in other countries. This will be of critical importance for commercial farms. The cumulative effect of a failure to match the growth in productivity of competitors would reduce the size of the UK farming sector.

Commercial farms are exposed to risk from regulatory activity designed to protect the environment or ensure animal welfare. The loss of competitiveness occurs whenever other suppliers to the market do not have to observe the same rules. The severity of this effect will hinge upon the extent to which regulations are compensated by payments from the

state designed to offset the higher costs they impose on farmers. If this does not happen the implication is a smaller farming sector in the UK.

Dependence on external incomes opens a farm to risks outside the agricultural sector as such. Commercial farmers rely mainly on the market to sustain their business. External income, whether to the farmer or the household may add a sense of security to the business, but in principle the farm should be able to cope even if this disappears.

### **CAP MF scenario (d6)**

The CAP MF scenario implies that policy focuses explicitly on non-market objectives. The hazard for the commercial farm sector is that it results in pressure from international negotiators to impose quantitative restrictions in order to ensure that the impact of subsidies for allegedly non-market purposes do not limit opportunities for their farmers within the EU or in third country markets. Such restrictions would apply to all farms and impede the structural growth and specialisation that may be essential if EU farms are to match the performance of international competitors. In effect costs are inflated and market outlets restricted. To offset this the receipt of any payments for which commercial farms might qualify under the MF scenario would diminish exposure to market price volatility.

Farms operating under a CAP MF scenario still derive a major part of their income from the market place. However, the existence of a significant component of total income from state subsidies paid for the benefits not remunerated by the market, suggests that they will be less exposed to volatility in market prices. Within a CAPMF scenario funding may also be offered for business diversification, training for non-farm part time jobs and the conversion of some farm assets to non-agricultural uses. This could expose the farm household to greater risks if the assumption that there is an external demand for these resources proves misguided.

### **CAP Repat scenario (e6)**

The dependence upon decisions made in London may expose commercial farms to less sympathetic treatment than their competitors in other countries. The UK approach to environmental policy may focus more on regulatory procedures than on rewards for the delivery of public goods. Such payments as are available are likely to be subject to strict conditions and regular monitoring exercises. This can impose costs in terms of management time and inflexibility to adapt to changes in the market.

If receipts from farming decline as a result of the repatriation of policy decisions, then the number of farms depending on external income must be expected to grow. The impact of this will depend on the sources of these receipts and their vulnerability to changes elsewhere in the economy.

**CAP Stat Quo scenario (f6)**

Maintaining the status quo involves less short run exposure to risk. The commitment to maintain EU commodity prices is retained. However for the UK producer there is an additional risk, that the value of the £ will appreciate relative to the €. In the longer run the dangers arise from ever tightening constraints on supply, on more intervention in terms of permitted technologies and environmental conditionality.

**Risks in the Payment for public goods. (Column 7)****Cap Lib scenario (c7)**

Farmers operating under this scenario see payments for public goods as supplementary to their main business. For them there are two types of risk. First, as indicated above, they may become locked into a system that is less flexible than their competitors. Second, public payments are as durable as the promises of politicians. It is quite conceivable that faced with alternative demands for public expenditure, the government might resort to regulation rather than inducement for the delivery of the goods that the public wants.

**CAP MF scenario (d7)**

In this situation a much higher proportion of the revenue of the industry would be targeted on environmental, social and welfare considerations. As a commercial consideration farmers would need to assess how far this would offer a better opportunity than markets and to what extent the support system underpinned high cost, low quality farming methods which increased their vulnerability to a reputation for poor products and above average disease risks. The answer might be that it is better to join them than to fight them.

**CAP Repat scenario (e7)**

The implication of this approach is that the UK government is probably less reliable in its support for farming than its contemporaries within other member countries. For a commercial farmer, this is the classical tilted playing field situation. It calls in question the rationale of attempting to compete in markets and prompts consideration of moving abroad if the wish is to continue to farm or to shift investment into other sectors if the intention is to remain in the UK.

### **CAP Stat Quo scenario (f7)**

Public good objectives are not the same as those of markets. To the extent that revenues depend upon the delivery of public goods this may impose conditions which are not compatible with competitive strength in an open market. In the short run the EU might be able to defend farmers via environmental grants, however, these may need to be increasingly distanced from production of tradable commodities. If that were the case the commercial farm sector would be more at risk than smaller units. It is less likely to qualify for public good payments and more likely to be impeded by conditions imposed to secure non-market goals.

### **Risks in dependence on external income (Column 8)**

#### **CAP Lib (c8), CAP MF (d8) CAP Repat (e8), CAP Stat Quo (f8)**

The risks of dependence on external income have much in common for all scenarios. The impact of changes in the rest of the economy, in terms of real income levels, changes in taste, demographic shifts and movements in macro-economic variables such as exchange rates, interest rates and inflation will affect differing sources of external income variously. In principle diversifying beyond the farm sector should reduce overall risk, especially where changes in policies diminish the degree of market protection afforded. There is an element of risk involved in distraction from the business of farming. This may be of especial importance for highly managed commercial farms where attention to detail and prompt action in response to signals can be critical for survival.

## Scenarios for Farming in the UK

### Public Goods Providers Opportunities and Threats

| a 1                      | 2            | Sources of Revenue   |   |   | Sources of Risk   |  |   |
|--------------------------|--------------|--|---|---|---|--|---|
| b                        |              | 3 Markets  | 4 Payment for Public Goods  | 5 External Income   | 6 Markets   | 7 Payment for Public Goods   | 8 External Income   |
| c Public Goods Providers | CAP Lib      | Lower and more volatile prices –<br>Sales to Manufacturers and Distributors –<br>Niche markets = | Rewards from adjustment policies +                                  | Off farm work +<br>On farm diversification +                                | Volatile prices +<br>Weak sellers +<br>Inflexibility +<br>Regulatory hazard + | Policy changes +<br>Short run –<br>added stability<br>Rising costs +                     | Impact of macro economic change =   |
| d                        | CAP M F      | Lower and more volatile prices –<br>Sales to Manufacturers and Distributors –<br>Niche markets = | Payments for providing environmental goods +<br>Organic subsidies + | On farm diversification +<br>Private benefit from public support +          | Volatile prices +<br>Rising input costs +                                     | Limits to respond to higher prices +<br>Changed Funding +<br>Short run added stability – | Impact of macro Economic change =<br>Demand for non-food goods and services ± |
| e                        | CAP Repat    | Lower and more volatile prices –<br>Sales to Manufacturers and Distributors –<br>Niche markets = | Payment for defined public goods +                                  | Greater dependence on off farm earnings +<br>Strategies to cut farm costs + | Lower, less secure prices +   | Policy preferences for land use ±  | Impact of Macro economic change +   |
| f                        | CAP Stat quo | Stable price +<br>Quota limits –   | Output Limits –<br>Conditionality ±                                 | Diversify +<br>Invest or work off farm +                                    | Less volatile EU £/€ rate shifts +  | UK implmtn +<br>Regional shift +   | Macro Economy +   |

In this table + means greater, either more revenue or more risk - means less, either less return or less risk = means neutral or incapable of deciding in which direction the variable points ± means the outcome could be positive or negative but will not be neutral.

## **Opportunities for public good providers in the market (Column 3)**

### **CAP Lib scenario (c3)**

The CAP Lib scenario implies lower and more volatile prices. This seems likely to increase the proportion of farmers who seek to add to returns from the market additional income from the provision of public goods. This is likely to be especially the case for farmers who are weak sellers. This includes those who are less attractive as sources of supply for large processors or manufacturers and who cannot develop a niche market selling direct to consumers at premium prices. For hill farms and some small farms in lowland areas, the returns from the provision of public goods may become critical for survival. The market will become of diminished importance.

### **CAP MF scenario (d3)**

Under a CAP MF scenario the returns from markets must still be expected to fall. The policy is concerned primarily with switching support in the direction of the other benefits which farming provides for the community. Revenues from traditional markets will still be available as under the CAP Lib scenario but there will be substantially greater dependence on payments for public goods.

### **CAP Repat scenario (e3)**

For farmers seeking their revenue from the market the CAP Repat situation might be thought to be little different than that of the CAP Lib scenario. The effective withdrawal of EU market price support together with open markets implies competitively determined internal prices. However, it is possible that under a CAP Repat scenario some governments might offer, from their own resources, more generous transitional terms to their farmers. This could be justified in relation to differences in alternative employment opportunities. Such payments would tend to distort internal markets to the disadvantage of farmers who were treated less generously. The UK is not expected to be generous.

### **CAP Stat Quo scenario (f3)**

In the short run this offers more stable prices. In the longer run constraints on quantity may become more important as budget limits and trade agreement requirements lead to supply limitation policies.

## **Opportunities for public good providers through payments for public goods. (Column 4)**

### **CAP Lib scenario (c4)**

A CAP Lib policy is likely to require Community wide measures designed to soften the adjustment process for existing farmers. They may also seek to encourage the production of public goods under rules of cross compliance. These are likely to impose conditions related to environmental and other non-market values. This should provide some help for public good providers. However, the key issues are what sorts of continuing payment will be provided. Against that set of assumptions farmers will need to assess how far such payments may compromise their capacity to respond to the demands of the market. A balance will need to be struck to develop a strategy that maximises total profitability.

### **CAP MF scenario (d4)**

The CAP MF approach is specifically designed to recognise and reward the non-market benefits that flow from farming activity. Payments, in addition to receipts from the market are intended to ensure that these benefits continue. This type of approach to competitiveness is likely to be of greatest importance where farming is relatively high cost but the non-market values are of perceived importance. This is likely to include areas of high amenity value including upland areas, farms on land of special scientific interest, land close to urban regions, where trespass may represent a problem. In addition farmers who are already committed to organic farming seem likely to be offered additional payments, based on the view that this type of production is environmentally superior to current conventional technology.

Payments for multi-functionality cannot be the same in all parts of the EU or for all farmers. Most will be tied to specific locations and defined benefits. Some may extend to activities such as tourist facilities, which help the rural economy. Others may relate to the wish to provide habitat for threatened species develops. Payments are likely to require an in depth analysis of the farm, a farm plan which reconciles market and non-market objectives and a continuing process of monitoring. Thus farmers who seek extra payments on this score may face some additional costs in making an application with no guarantee that funding will be made available.

The key question is how far a UK government would be likely to pay for public goods. The justification for payments will hinge on the extent to which they deliver benefits actually valued by the taxpayer in relation to other demands on public expenditure. This is not an easy sum to compute. A reduction in farming activity might itself be seen as a gain by some people. For others lower farming activity would lead to the loss of some specific benefit, for example, birds, hedgerows or water table management. However, it is difficult to evaluate such claims and they are subject to intense political

lobbying. Even when losses are identified, in the UK the argument could well be about how to restore the benefits at least cost. This may or may not involve payments to existing farmers. Despite this reservation, it seems likely that even within the UK the importance of payments for public goods will grow.

#### **CAP Repat scenario (d4)**

The emphasis here seems likely to be on clearly defined public goods and on monitoring performance. It is likely that environmental pressure groups will play a considerable role both in shaping the way in which policy is implemented and in terms of the weights given to differing policy goals. In other EU countries the greater concern about communities may lead to programmes which are generally more supportive of farmers than those operated in the UK.

#### **Cap Stat quo scenario (f4)**

Farmers adopting an approach, which is directed at the supply of public goods, may find that there is less money available because funds are absorbed in maintaining market prices. Despite this, as quota restrictions are applied and especially if support is made more conditional upon environmental requirements, these farmers might be better placed to survive than those focusing entirely on markets.

### **Opportunities for Public Goods providers from external income sources. (Column 5)**

#### **CAP Lib scenario (c5)**

The CAP Lib scenario implies lower and more volatile prices and little effort by governments to replace lost revenue by payments for non-market benefits. Public good providers are thus more likely to have to seek to create additional external income streams if they are to remain in business. They can do so by seeking work off the farm, possibly for other farmers or by diversifying the business activities of the farm. Such on farm diversification can include added value activities such as first stage processing and direct marketing of fresh products to consumers.

If land prices fall as a result of lower product prices, more may be bought by non-farmers for its speculative or amenity value. Some buyers might well seek to maximise revenue from the production of public goods since this could overlap with private interests and offer a more secure and less demanding commercial environment than selling into a competitive market.

**CAP MF scenario (d5)**

The CAP MF scenario would make it even more attractive for farmers who have other sources of income and who wish to remain in farming to seek to maximise payments for the provision of public goods. This is particularly true if the production of public goods can be made attractive to visitors or coincide with the farmers view of what should be done with the farm. In effect a subsidy granted in the public interest may generate non-market private values as well as compensate for any loss of market revenue as a result of lower prices.

**CAP Repat scenario (e5)**

The CAP Repat scenario implies that the payments in addition to what can be earned from the market will depend on the willingness of the British government to fund them. Assuming that this is unlikely to be generous, more farms may become dependent upon support from income earning activities outside agriculture. Whilst the production of public goods will be one possible source of extra on farm income, the probability is that this will be less than under either of the other CAP scenarios.

**CAP Stat Quo scenario**

External income may grow in importance as opportunities to make incomes grow from farming are frustrated by supply control and conditionality. Farm businesses may move into related non-food production activity but for many the most secure form of additional income will be from investment and work outside farming.

**Risks facing farmers dependent on revenue from public goods.  
(Columns 6 - 8)****CAP Lib scenario (c6)**

Producers who seek to secure a major share of income from the supply of public goods are less likely to be the preferred sources of supply for processors and distributors. In this market they are weak sellers. Thus should markets deteriorate they may have less protection than farmers with longer term contractual links to their customers. However, payments from the state for public goods offer an element of relative security. This may attract more farmers to seek to benefit. If the fund available for such support is limited, this may lead to lower rates of compensation or more exacting requirements to secure them.

The attractiveness of public good packages may change although the arrangements are stable. In an open market, prices will sometimes rise. From the farmer's perspective this means that the opportunity cost of providing public goods would increase. Payments that prevented farmers increasing production for period of years would seem unattractive. Second, it is difficult to judge the 'elasticity of demand' for public goods. At what point will the public conclude they have an adequate supply of such outputs? The cost of subsidies is apparent in public expenditure rounds. At that stage there is a risk that funding will be limited or conditions changed. For the farmer planning his farm activities to supply public goods there is thus a risk that the loss of flexibility in response to markets will become more costly.

### **CAP MF scenario (d6)**

The provision of payments for non-market outputs of farming offer some dilution of the impact of market volatility. The more serious market risk, under a CAP MF scenario is that retaining traditional farming methods may result in a growing gap between farmers who depend on payments for public goods and farmers who make more rapid technical progress elsewhere in the world. There is also a danger that costs may rise as real wages rise in a growing economy. If farming methods were fixed then under the CAP MF scenario margins would narrow in the absence of increased state payments.

### **CAP Repat scenario (e6)**

The situation here is not substantially different from that for commercial farmers. The principal market hazards for public good providers within this scenario are that competitors will be more generously treated by their governments than UK farmers. A UK government might see the decline of farming as an opportunity to allow land to revert to less intensive or no farming practice. It might be persuaded that the additional payments needed to secure biodiversity or other specific public goods could be lower. .

### **CAP Stat Quo scenario (f6)**

The CAP Stat quo scenario is directed at retaining the commodity basis of support for agriculture. Central to this is intervention in the market to maintain prices. As a result there is likely to be a more stable EU price regime. For UK farmers the risks are that the £/€ exchange rate will move adversely. It could also move favourably - but the possibility of movement suggests greater volatility in the UK than among its continental competitors. That in turn will feed through into investment decisions. There may also be differences in regional application of public good payments.

## **Risks in dependence on external income (Column 8)**

### **CAP Lib (c8), CAP MF (d8) CAP Repat (e8), CAP Stat Quo (f8)**

The risks of dependence on external income have much in common for all scenarios. The impact of changes in the rest of the economy, in terms of real income levels, changes in taste, demographic shifts and movements in macro-economic variables such as exchange rates, interest rates and inflation will affect differing sources of external income variously. In principle diversifying beyond the farm sector should reduce overall risk, especially where changes in policies diminish the degree of market protection afforded. There is an element of risk involved in distraction from the business of farming. This may be of especial importance for highly managed commercial farms where attention to detail and prompt action in response to signals can be critical for survival.

## Scenarios for Farming in the UK

### External Income Opportunities and Threats

| a 1               | 2            | Sources of Revenue  |  |   | Sources of Risk   |   |                                   |
|-------------------|--------------|---|--|---|---|---|-----------------------------------|
| b                 |              | 3 Markets   | 4 Payment for Public Goods   | 5 External Income                         | 6 Markets   | 7 Payment for Public Goods  | 8 External Income                 |
| c External Income | CAP Lib      | Lower and more volatile prices -  | Increased availability, less opportunity cost. +                               | Macro economy. +<br>Regional employment + | Lower prices +<br>More uncertainty +<br>Regulatory hazard + | Long run risk of changes in policy. +<br>Short run added stability -                    | Impact of macro economic change = |
| d                 | CAP M F      | Lower and more volatile prices -<br>Owned outlets +                           | Increased availability, less opportunity cost. +<br>Fit farmer's preferences + | Macro economy. +<br>Regional employment + | Lower prices +<br>More uncertainty +<br>Regulatory hazard + | Long run risk of changes in policy. +<br>Short run added stability -<br>Less flexible + | Impact of macro economic change = |
| e                 | CAP Repat    | Lower prices -<br>More volatile prices -<br>Weak sellers -<br>Owned outlets + | Increased availability & lower opportunity cost. +                             | Macro economy. =<br>Regional employment - | Lower prices +<br>More uncertainty +<br>Regulatory hazard + | Less support +<br>Less flexible +<br>Change Policy +<br>Short run stability +           | Impact of macro economic change = |
| f                 | CAP Stat Quo | Stable prices +<br>Supply control -   | Payment levels =   | Need for growth +                         | Price or policy +   | Bureaucratic demands +  | Business failure +                |

In this table + means greater, either more revenue or more risk - means less, either less return or less risk

= Means neutral or incapable of deciding in which direction the variable points

± means the outcome could be positive or negative but will not be neutral.

### Opportunities in the market (Column 3)

The dominant influence in the fortunes of this group is likely to be the development of the economy as a whole. If we assume rising real incomes, then funds from outside may become more available. Further, the number of individuals who will be able to afford to enter farming as a preferred lifestyle, rather than as a means of making a living, will increase. This applies to all CAP scenarios.

#### CAP Lib scenario (c3)

Administrative costs may be a significant deterrent for small farmers. This applies both to sales to the market and the requirements likely to be attached to grants from the state. Farmers whose main source of income is not on the farm are unlikely to be able or willing to tie themselves to exacting protocols about farming methods and delivery times.

Even if they are willing to do so, major buyers will not want the extra costs of procurement and of monitoring for small volumes of purchases. Thus neither side is likely to want to enter into elaborate continuing relations. This implies that such farms may be forced to sell at the bottom end of the market. One exception to this may be where external income is earned from a retail shop or catering establishment, where the farm may be able to supply local, fresh produce that commands a premium.

The CAP Lib scenario envisages lower and more volatile incomes and less readily accessible payments for public goods than under a CAP MF approach. For farmers who rely on external income to enable them to continue to farm, this implies that more will have to be earned outside to maintain overall revenue at its existing level. It may also involve a redistribution of investment between farming and other activities. The ability to do this may be affected by the location of the farm. Where this is close to towns, other types of employment may be accessible. It will also be affected by the communications infrastructure. Better roads and easier access to electronic media will increase the scope for supplementing income from farming by other sources of revenue.

In more remote areas land prices seem more likely to fall. Some, lifestyle investors might see this as an opportunity to adopt minimal cost forms of farming with a high degree of self-sufficiency. At the extreme this might be little different from the 'dog and stick' farming seen in the depressed years of the 1930s.

The situation of farmers within this group can vary dramatically. For some, the farm is a second home. Its amenity value is a strong reason for continued ownership. Responses to lower market prices may be minor and focus on reducing costs. Some may decide that the farm can no longer be afforded and sell up. In contrast, for other farmers external income is regarded as a means of enabling them to continue to farm. In this situation lower market prices may undermine the viability of the enterprise. Unless there are opportunities to secure greater earnings outside, then ceasing to farm may become the only alternative.

An added element of risk under all the scenarios is of tighter regulatory regimes. Particularly if these discriminate against absentee farmers or second homeowners.

### **CAP MF scenario (d3)**

There is no reason, in principle, why farmers who rely on external income to fund their farming should not be eligible for the sorts of reward offered to maintain multi-functional agriculture. For farmers who are concerned mainly with the amenity value of farm ownership, the acceptability of public good payments will hinge on the extent to which they impose constraints on what the owner wishes to do and the administrative hassle of securing such receipts. For farmers seeking every feasible sources of income to remain in farming, there is likely to be greater readiness to modify farming practice and to

tolerate the administrative burden of applying for and making use of such funds. For both groups, however, the overall impact is likely to be positive.

Under the CAP MF scenario the opportunity to secure payments for the provision of public goods is likely to be greater than within a CAP Lib framework. The impact is likely to be positive for farmers who have external income sources, although the costs of securing the funding, observing the conditions imposed and adjusting current farming activity may deter some from making application for such funds. A multi-functional approach may generate some subsidiary spin off opportunities in the local community. For example, the provision of buildings for craft or office type activity. Again these impacts will be site specific and localised in the opportunities they create.

### **CAP Repat scenario (e3)**

This scenario envisages relatively limited support from the UK government. Farmers, who rely on external income, will find a CAP Repat scenario raises the cost of continuing in farming. Since other countries may well be more generous, the implication is that market prices will offer smaller returns.

The attractiveness of farming for this group will vary widely. Some farmers who own catering or retail outlets may in any case sell at premium prices. The CAP Repat scenario will have little effect. Others, who have depended on direct CAP payments for survival, are more likely to suffer real income loss. However, given their reliance on external income, the critical factor will be the development of the economy as a whole.

### **CAP Stat Quo scenario (f4)**

Retaining the present commodity based regime leads to short run assumptions about more stable prices. UK producers will still face the exchange rate risk but within the EU there is less risk of sharp price reductions. However, the condition of maintaining prices is likely to be restraining quantity. This will matter more for commercial farmers than others.

## **Opportunities for farmers who rely on external income through payments for public goods (Column 4)**

### **CAP Lib scenario (c4)**

Given the lower returns from the market, the opportunity to compete to provide public goods will become of greater interest. A range of payments is likely to be available. Their accessibility will vary according to the location of the farm and any special characteristics it may have in terms of scenic or scientific interest. Some payments may focus especially on easing the social problems of adjustment to lower prices. Thus more farmers may opt to become Public Goods Providers rather than remain wholly commercial

A lower level of market prices will also reduce the opportunity cost of accepting the conditions suppliers of public goods may have to accept.

### **CAP MF scenario (d4)**

Within this scenario the importance of payments for non-market outputs is likely to grow. In principle these are payments for benefits that are expected to continue, not simply aids for adjustment. Again site and the natural characteristics of the farm may determine the types of payment for which a farmer may be eligible. Although, under this scenario residual market protection might be greater than with a CAP Lib approach, it would still be the case that the opportunity cost of accepting conditionality attached to public good payments would be lower than under existing circumstances.

### **CAP Repat scenario (e4)**

For farmers who have significant external income, under this as well as under the CAP Lib or CAP MF scenario, are highly dependent on the view governments take of the need to fund public goods, after prices for commodities have fallen to equilibrium levels. The assumption made here is that a UK government is likely to offer some payments but it may do so on a smaller scale than some other countries and subject to more stringent conditions. Even these lower rates of payment may become more attractive if market prices fall and so cut the opportunity cost of accepting limits on production flexibility.

### **CAP Stat Quo scenario (f4)**

The present policy embodies payments for rural development and environmental requirements under the 'second pillar'. Under a status quo assumption there would be fewer opportunities to shift funding from commodities to these other objectives. However, there might be some increased conditionality applied to commodity payments. These might be more accessible for farmers following a 'public goods' strategy.

## **Opportunities for farmers to increase incomes from external sources (Column 5)**

### **CAP Lib scenario (c5)**

The critical condition will be the availability of external income. Here the driving force, overall, must be the macro-economy. However, regional differences will be of great importance. For investors concerned primarily with lifestyle, access to a major conurbation and communication networks will be major considerations. For farmers seeking to survive by finding other income sources, local employment opportunities, and the ability to sell their services to other farmers, the extent to which the family is able and prepared to plough personal incomes into the farm household are more likely to be critical. Implicitly in this scenario is that such incomes are more important than at present.

### **CAP MF scenario (d5)**

The CAP MF scenario envisages a continued availability of funds to pay for multi-functional activities which the market does not reward. This may change the balance of farming activity for farmers with other sources of income; especially if what is required fits into the personal preferences of the farmer. It may do so either because it underwrites a less intensive system of farming or because the amenity for which it pays is valued by the farmer for his own enjoyment.

### **CAP Repat scenario (e5)**

If it is assumed that under a CAP Repat policy market prices and payments for public goods might be lower than under the other scenarios considered, there may be a relative fall in the price of farmland in farming. This would reduce the cost of acquisition. It might attract into farming a larger number of people who were less concerned with profitability than amenity. However, the link between the value of land in farming and the price at which it changes hands in the market is far from simple.

For farmers who do seek external income the dominant influence must be the strength of the economy. This will determine the existence of funds that their owners feel comfortable about committing to farming and the existence of jobs off the farm for farm families.

**CAP Stat Quo scenario (f5)**

External income represents a key route to escaping business stagnation and decay. It may derive from moving investment or labour into non-farming activities. In this scenario the building of businesses based on the exploitation of public goods, tourism, leisure facilities etc. may be critical.

**Risks for farms relying on external income. (Columns 6-8)****CAP Lib scenario (c6 -8)**

The situation facing farmers dependent on external income to support farming is not different in kind than for other farmers. However, the importance of market revenues may be smaller. A characteristic, which will be important where the total revenue from all sources is low, is that the market share of this will be more uncertain. For farm families that are struggling to cope this may become decisive as they consider whether to abandon farming and rely on other sources of income entirely.

Commitment to produce public goods is likely to involve a period of years. This may limit the marketability of the farm and so have some impact on its capital value. Apart from the capital value hazards, all payments of this type imply a policy risk. Funding may not match rising costs. The direction of policy may shift in response to the success of new pressure groups. Support is likely to be site specific so that accidents of which side of a boundary a farm falls may become important.

The major risks, as well as the main opportunities for this group of farmers, whichever CAP scenario is adopted, relate to the performance of the rest of the economy.

**CAP MF scenario (d6-8)**

The situation for this group of farmers is fundamentally similar to that for other groups. Prices may be expected to be lower and more volatile. The price of access to payments for multi-functional purposes is likely to include more regulatory intervention, especially affecting the costs of inputs. There may be added hazards from inflexibility but in other respects the situation of farmers under this scenario is little different than under other assumptions.

**CAP Repat scenario (e6-8)**

It seems possible that under the CAP Repat scenario more UK farmers may find themselves depending upon external income to remain in farming. As income falls, then the options narrow. Those farms that seek to find new 'external' revenue by internal

diversification or by work off the farm may find increased competition in these areas. Some may simply accept a lower standard of living. Others may borrow against asset values to bridge the gap between actual earnings and necessary expenditure. For some the solution may be to sell the farm and invest in other directions.

### **CAP Stat Quo scenario (f6-8)**

For farmers who are dependent upon external income, risks from changes in markets or policies still exist but are less fundamental to the survival of the enterprise. In contrast, even if agricultural markets or policies are favourable, external disturbances may undermine the stability of the system. In such a situation sales of land or of the farm itself may become a means of rescuing the non-farming external activity.

**dti**

Department of Trade and Industry



Printed in the UK on recycled paper with a minimum HMSO score of 75.  
October 2001. Department of Trade and Industry.  
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DTI Pub 5646 2k/10/01/NP. URN 01/1078