Appendix 4:

Drivers of Countryside Change

(Work Package 3.3)

Study Review of Key Trends in Agriculture

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TABLE OF CONTENTS

1 INTRODUCTION

Agricultural market and policy trends in Britain for the period between 1992 and 1996 were studied at length in earlier work sponsored by DETR (Winter and Gaskell 1998). The aim of this paper is to up-date, as far as possible, our understanding of subsequent trends based on a desk review of sources published between 1996 and 2000.

The paper has four main aims:

- To examine the key trends in agricultural policy in the 1990s. (As the paper assumes knowledge of the 1992 MacSharry reforms discussed at length in Winter and Gaskell (1998), this section is necessarily quite short.)

- To examine agricultural market trends, with particular reference to the post-1997 crisis.

- To examine the responses of farmers to policy and market changes with particular reference to the period since 1995 .

- To provide a brief commentary on the Agenda 2000 reforms and their likely implications.

2 TRENDS IN AGRICULTURAL POLICY IN THE 1990s

2.1 THE MACSHARRY REFORMS

The 1992 reforms are now seen as relatively modest. However in several respects they fundamentally shifted the balance of the CAP from a system of price support to direct payments weakly decoupled from production, and when they were first introduced there was considerable expectation that they would lead to environmental benefits. The background to the 1992 CAP reform has been widely discussed (Fennell 1997, Grant 1997, Johnson 1995, Kay 1998, Ockenden and Franklin 1995, Swinbank and Tanner 1996, Winter and Gaskell 1998). The main factors in the reform were:

- a substantial reduction in commodity support prices, to bring them nearer to world market prices and to make agricultural products more competitive on the Community and world markets;
- the introduction of direct payments to compensate for the effect of lower prices on farmers' incomes;
- the introduction of measures to place limits on production levels and entitlements to payments (arable set-aside, quotas in the sheep and beef sectors, eligibility rules and limitations); and
- a number of accompanying measures, including those concerned with the environment.

In budgetary terms the reform shifted the burden of support to taxpayers from consumers, who had long paid the price of the CAP through higher food prices resulting from the protection given to European products from foreign competition[i]. Thus, direct payments have made the cost of the CAP more transparent, though more so in some sectors than others, and this helps to explain the growing expectations from environmental groups that continued CAP payments should be deliver tangible environmental results. The reforms were potentially more far-reaching in the arable sector than for sheepmeat or beef. The dairy sector was scarcely touched at all, having already experienced its own upheaval with the imposition of milk quotas in 1984 (Burell 1989, Cox *et al* 1990), nor were pigs and poultry affected. It is sometimes mistakenly assumed that pigs and poultry are not covered by the CAP. In fact both sectors, and poultry meat especially, gain some benefits from trade barriers and/or export refunds. These measures are designed to compensate poultry and pig producers for the higher prices they have to pay for cereals under the CAP.

A number of factors lay behind the reform and, indeed, the continuing reform process. First, a major issue was that of the European Union’s Agricultural Budget. Intensive pressure on policy makers in the agricultural sector to reduce the amount of money spent has come from finance ministers of the European Union and representative sof consumers and taxpayers. However, whilst the 1992 reforms were aimed at restricting spending in some areas, particularly the high costs of storing and disposing of surpluses, the 1992 agreement represented a compromise among European Union members. Consequently the pruning of the budget was not as drastic as might have been expected. Indeed direct costs increased.

Secondly, pressure was being exerted at the GATT meetings, for the EU to cut agricultural support to farmers. In particular this came from the United States and the Cairns Group of countries. As growth took place in the global economy, and the Uruguay Round reached an impasse, the reforms of 1992, were forced on the European Union, by the need for it to demonstrate to its trading partners a willingness to bring in farm policy reform and reduce financial support in the farm sector.

Thirdly, by the end of the 1980s the CAP was commonly cited as a major contributory factor to all kinds of wider ills, including environmental degradation, poor farm animal welfare and rural social and economic problems. These concerns contributed greatly to the debate surrounding the MacSharry proposals.

The implementation and impact of the reform has been discussed in detail in publications arising from the CAP and the Countryside Project (Winter and Gaskell 1998a, 1998b,; Winter *et al* 1998; Winter 2000a). Subsequent modifcations to the schemes are set our in Winter (2000b).

Milk Marketing

One area of policy not covered by the MacSharry and Agenda 2000 reforms is milk marketing and this has been subject to considerable policy pressure in recent months. In July 1999 the Monopolies and Mergers Commission (MMC) published its report on the supply of raw cow's milk and found that Milk Marque to be a scale monopolist by virtue of its 49.6% share of the supply of milk in Great Britain in 1997/98. The MMC found that Milk Marque had exploited its position by using its selling system to price discriminate and to control the supply of milk made available to the market in order to raise the average price of milk above levels that would otherwise have been reached by engaging in the following practices:

- It has increased the required tolerances of its supply-led contracts to a degree greater than was necessary if its objective was to balance overall supply, and widened the price differentials between its different contract types more than was justified.
- It has forced its smaller processor customers to pay a higher average price for their milk than its larger customers to an unjustified extent.
- By imposing restrictions on the use of milk bought in its lowest priced contracts in the summer 1998 selling process, it has obliged some processors to purchase milk at higher prices than they would otherwise have had to pay.
- It has entered into individually negotiated contracts with certain large processors on terms that were neither disclosed nor made available to the generality of its customers.
- It has been able to exploit the particular aversion of some of its customers to the risk of obtaining inadequate supplies of milk or supplies obtained on adverse terms.
- It has been able to facilitate its price discrimination strategies by inhibiting the secondary trade in milk between processors.
- It has arranged for milk to be contract processed outside the market in Great Britain. Milk Marque has been able to constrain the volumes of milk offered to its usual customers in the face of largely unchanged demand, thereby raising the marginal price of milk.
- The MMC also considers that an increase by Milk Marque in its milk processing capacity may be expected to operate against the public interest, by enabling it to divert milk into processing, reducing the milk available to others and thereby raising its price.
- Milk Marque effectively sets the floor price of milk for producers in Great Britain, because of its membership policy and its high market share. Since purchasers of milk must offer producers a higher price than that offered by Milk Marque if they are to attract and retain those producers, milk prices throughout Great Britain are higher than they would otherwise have been.

  (DTI Press Notice P/99/587)

Under pressure from the DTI, in September 1999 Milk Marque announced plans to break itself into three roughly equal sized companies. Stephen Byers Secretary of State for Trade and Industry made the following announcement::

> If the plans announced by Milk Marque for its break-up are approved by its members then I will withdraw my request of 6 July 1999 to the Director General of Fair Trading that he seek undertakings from Milk Marque on the various interim measures recommended by the MMC, and advise on changes to the system for sale of milk by Milk Marque. In the meantime I am extending the deadline for receipt of those undertakings by a further month, to November 8; that is, until after the members of Milk Marque have had an opportunity to vote on the proposals of Milk Marque's Board.
> (DTI Press Notice P/99/756)

However, on the 29th November 1999**,** the NFU and the MMB were granted leave to apply for a judicial review to overturn the recommendations of the Monopolies and Mergers Commission report.

2.2 AGENDA 2000

It soon became apparent that support cost for the 1992 reform from the budget would need to increase. As originally proposed, costs from the European Union Agricultural budget would have increased by 1.9 billion euro in the dairy sector and 2 billion euro for beef by 2006. As Agenda 2000 discussions continued the costs of the Common Agricultural Policy assumed greater importance in the scheme, as the funding of the European Union and the financial transfers generated between states were examined. Two plans were proposed and rejected:

- Payment of some cost by the member state (reducing CAP spending, and redressing the budgetary imbalance between member states, to benefit those with small-farm sectors);

- Reducing headage and acreage payments, e.g. by 3 per cent per annum.

To meet a budget figure, and to reduce EU support needed, price cuts for milk were delayed till the later stages of the period, and the cuts in beef prices were reduced. This compromise package exceeded the figure originally intended by almost seven billion euro. At the request of the French Minister, the package was modified at the Berlin meeting and the limited CAP reforms, that had been introduced into Agenda 2000, were further diluted.

To obtain agreement on policy, a number of pay-offs were included to satisfy individual countries, e.g. increased milk quota, increases in cereal reference yields and drying subsidies etc. Milk quotas were left in place, area and livestock headage and crop area payments will also continue to be paid in full indefinitely. This package was planned to stretch to 2006, allowing for the next reform plan to be produced in 2005.

With prospects of disagreements between the WTO and the EU likely, it is probable that the EU will be forced to modify this watered down Agenda 2000 policy before the 2005 date stated. The other major issue, not yet fully addressed is the eastern European enlargement and how the EU will deal with this expansion of agricultural policy.

The statements of commitment for the EU agricultural policy, in ‘the European Model for Agriculture, follow the same objectives enshrined in the original European Commission agricultural policy objectives of 1957, with additional emphasis on, “a competitive agricultural sector”, and “production methods which are safe”. Agenda 2000 continues, “a simpler more comprehensive policy which establishes clear dividing lines between collective decisions at Community level and those taken at Member State Governmental level,” and “agricultural policy that establishes a clear connection between public support and the range of services which society as a whole receives from the farming community.”

It seeks to promote:

- a competitive agricultural sector which is capable of exploiting the opportunities existing on world markets without excessive subsidy, while at the same time ensuring a fair standard of living for the agricultural community;

- production methods which are safe, capable of supplying quality products that meet consumer demand;

- diversity, reflecting the rich tradition of European food production;

- the maintenance of vibrant rural communities, capable of generating employment opportunities for the rural population;

- an agricultural sector that is sustainable in environmental terms, contributes to the preservation of natural resources and the natural heritage and maintains the visual amenity of the countryside.

- a simpler and more comprehensive policy which establishes clear dividing lines between the decisions that have to be taken jointly at Community level and those which should remain in the hands of the Member States;

- an agricultural policy that establishes a clear connection between public support and the range of services which society as a whole receives from the farming community.

KEY FEATURES

The key features of the Agenda 2000, reforms, as described in the Council of the European Union document, 'Agenda 2000' (1999), in Agra Europe, 12 March (1999) and 1 April (1999) are as follows (see also Swinbank 1999):

Cereals

The intervention price for cereals will be reduced by 15 per cent in two tranches for 2000 and 2001 (rather than by 20 per cent as proposed by the Commission and agreed by the Agricultural Council). Arable area payments will be increased to compensate for half this price cut. The arable area payments on oilseeds and linseed will be reduced over a three year period to equate with that of cereals, from 2002.

Beef

Support prices are to be reduced by 20 per cent by 2002, (rather than the 30 per cent as originally proposed by the Commission), and a 'safety net' intervention system is to be retained. The beef special premium and the suckler cow premium are enhanced; but the proposed dairy cow premium was not adopted. Instead, all animals become eligible for a new slaughter premium, of 80 euro per head(which is subject to normal exchange rate conversion) for animals over eight months old; Member States are entitled to pay a slaughter premium on young calves from their own budgets, at the discretion of their own governments.

Milk

The Agricultural Council had been sharply divided over milk, with some Member States seeking more fundamental reforms than those proposed by the Commission, and France and Ireland taking the view that the milk regime should be simply rolled forward unchanged. In the event the, quota regime was renewed until 2006, but with a mid term review in 2003. The 15 per cent cut in intervention prices proposed by the Commission was adopted. However the programme of price reductions will not begin in 2000 as proposed, nor even 2003 as agreed by the Agricultural Council, but instead in 2005 through three annual 5 per cent steps. In parallel with the price cuts, milk quotas will be increased by 1.5 per cent pro-rata in most Member States, Mediterranean States and Ireland will receive more than this with effect from 2000.

Support Prices

Although support prices for cereals, beef and milk have been reduced, the Commission neither proposed, nor did the council adopt any concomitant reductions in import tariffs.

Cross-compliance, Modulation and Ceilings

Member States have to determine appropriate environmental measures which must be followed by farmers if they are to receive their area and headage payments in full. The practical application of this raises questions of a bureaucratic and judicial nature.

Under modulation Member States can if they wish introduce measures to modulate the area and headage payments a farm can receive, on the basis of overall employment on the farm, overall prosperity of the holding, or the total amount of aid paid to the holding. Such funds would be used by the Member State in support to agri-environmental measures, less favoured areas, areas with environmental restrictions, early retirement, afforestation and rural development.

The Commission had proposed ceilings that, if adopted, could have made budget savings on the amount payable to any single holding.

BUDGET COST

Originally the budget was put at 307.1 billion euro over 2000-2006. In order to reduce this, and also to get a final agreement, some of the measures for reform were adjusted or dropped. The budget ended up over this figure at 314 billion euro.

- The specific proposals suggested a continuation of existing mechanisms with a further shift towards direct payments,
- the introduction of an individual ceiling covering all direct income payments (modulation),
- further expansion of agri-environmental measures under Regulation 2078/92
- possible transformation of the support schemes in Less Favoured Areas (LFA) into a basic instrument to maintain and promote low-input farming system.
- It was these proposals which provided the basis for the lengthy discussions and debates that took place during the period.

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Key details extracted from the detailed policy statement giving additional information are as follows:

MARKET PRICE REDUCTIONS

Reductions in market support prices ranging between 15% for cereals and 20% for beef will be introduced. A cut of 15% will apply to the milk sector from the year 2005/2006. The cuts will be introduced gradually with the objective of bringing Europe's farmers into closer touch with world market prices, thus helping improve the competitiveness of agricultural products on domestic and world markets with positive impacts on both internal demand and export levels. Equally important, the changes will contribute to the progressive integration of the new Member States from Central and Eastern Europe.

The institutional price reductions will be partially offset by an increase in direct aid payments, thus contributing to the aim of providing farmers with a fair standard of living. The move away from price support towards direct income support for farmers means a further decoupling of aid from production.

FACTORS OUTSIDE THE EUROPEAN UNION

Greater market orientation will help to prepare the way for the integration of new Member States and reinforce the European Union's position in World Trade Negotiations. As stated in the conclusions to the European Council in Berlin on Agenda 2000: 'the decisions adopted regarding the reform of the Common Agricultural Policy within the framework of Agenda 2000 will constitute essential elements in defining the Commission's negotiating mandate for future global trade negotiations.'

QUALITY

The reform takes account of increased consumer concerns over food quality and safety, environmental protection and animal welfare in farming. Both in market support and in the new rural development policy, compliance with minimum standards in the fields of environment, hygiene and animal welfare is a requirement.

ENVIRONMENTAL MEASURES

Member States have to undertake environmental measures they consider appropriate. In fulfilling this obligation, Member States would have three options at their disposal. In the first place, implementation of appropriate agri-environmental measures applied under rural development programmes may be sufficient. Secondly, Member States may also make direct payments under the market organisations conditional on the observance of generally applicable environmental requirements. Thirdly, they may attach specific environmental conditions to the granting of such payments. In the latter two cases, a proportionate reduction or cancellation of payments would be applied in cases of non-compliance.

RURAL DEVELOPMENT

The new policy for rural development seeks to establish a coherent and sustainable framework for the future of Europe's rural areas. It will complement the reforms introduced into the market sectors by promoting a competitive, multi-functional agricultural sector in the context of a comprehensive, integrated strategy for rural development.

The guiding principles of the new policy are those of decentralisation of responsibilities - thus strengthening subsidiarity and partnership - and flexibility of programming based on a 'menu' of actions to be targeted and implemented according to Member States' specific needs. As a coherent package of measures it has three main objectives:

- to create a stronger agricultural and forestry sector, the latter recognised for the first time as an integral part of the rural development policy;
- to improve the competitiveness of rural areas;
- to maintain the environment and preserve Europe's rural heritage.

The agri-environmental measures are the only compulsory element of the new generation of rural development programmes and hence represent a decisive step towards the recognition of the role of agriculture in preserving and improving Europe's natural heritage. The agri-environmental aid scheme will encourage farmers to introduce, or continue to use, farming practices compatible with environmental protection and natural resource conservation.

DECENTRALISING MANAGEMENT

Direct payments to producers have been organised in a different way compared with 1992. Part of the direct payments for the beef and dairy sectors will take the form of a national financial envelope from the EAGGF budget which Member States can distribute, thus allowing them to target specific national or regional priorities. Each Member State will be able to allocate resources freely, subject to certain Community criteria designed to prevent distortions of competition.

FURTHER SIMPLIFICATION

The Common Agricultural Policy reform contains important elements of simplification in various sectors. In the wine sector, for instance, there is now one regulation where previously there were twenty three. In rural development, again, there is now one regulation where before there were nine. But the Commission has aimed to contribute to simplification by decentralising, streamlining and simplifying programming procedures.

Following the political agreement reached during the Berlin European Council on 24 and 25 March 1999, and the approval by the European Parliament on 6 May 1999, the Council formally adopted the new regulations for the period 2000-2006 in May and June 1999.

IMPACT OF AGENDA 2000

OVERALL IMPACT

The seven main policy statements in Agenda 2000, providing the "European Model for Agriculture," are at best vague. Certainly with the devolution of some discretionary power to individual Member States, there is good reason to be aware of issues for both farmers and the environment, in relation to the UK Government's interpretation of central CAP, and what action in favour of the various sectors, that they are, or are not prepared to take.

Most of the analysis on Agenda 2000 impacts so far, has been broad based with relatively little detailed analysis. This is much to be expected, so early in the process. Babcock et al (1999) modelled the commodity policy changes arising from the Berlin Agreement to simulate their impact up until the year 2008/09. The main conclusions drawn are given below.

Impacts on Crops.

With a set-aside rate of 10% for 2000/01 and 2001/02, the Berlin agreement is not projected to have any significant impact on crop production. Total crop area declines slightly, due to an increase in voluntary set-aside area in response to lower intervention price. After 2001, the total area devoted to cereals and oilseeds increases as the set-aside rate declines. Most of the rise in area is likely to go into wheat production. The projections show the decline in the intervention price enables the EU to export wheat without subsidy from 2001/02, and commercial exports to expand above the baseline levels. The increase in wheat exports, results in a steady reduction of cereal intervention stocks. By equalising the direct payments for both cereals and oilseeds, the Berlin Agreement puts an end to restrictions on oilseed plantings contained in the GATT Uruguay Round Agreement; thus, planting decisions should be driven by market factors. Based on relative returns, oilseed area is projected to decline.

Impact on Livestock

Projections show the phased reduction in the beef intervention price prompts the release of beef intervention stocks, reducing domestic beef prices. By 2002, the intervention price reductions are complete, and intervention stocks are eliminated. In 2002, EU beef prices are 5 percent below the U.S. price. Although U.S. and European beef are not perfect substitutes on international markets, it is assumed that with the 5 percent price discount, the EU can export beef without subsidy. Beef producers in the EU respond to lower prices by decreasing beef production. The downward pressures on beef production are offset partially by producer payments, changes in dairy cow inventories, and reductions in feed costs.

Lower beef prices encourage consumers in the EU to increase their consumption of beef. Substitution effects away from pork and poultry consumption are fully compensated by lower pork and poultry prices. Lower cereal and oilseed prices prompt small increases in EU pork and poultry production, inducing an average decline in EU pork and poultry prices.

Impact on Dairy sector

The projected impacts of the Berlin Accord on the dairy sector are modest during the first five years of the simulation period. The increase in the milk quota in 2000 and 2001 raises milk production by less than 1 percent, depressing the milk price an average of 2.5 percent. The larger increase in the dairy quota beginning in 2005 raises milk production 1.6 percent above the baseline in 2008. Dairy cow numbers are expected to decline throughout the projection period in response to greater output per cow. Butter and SMP intervention prices are reduced concurrently with the second increase in the milk quota. The combination of lower market support and increased production pushes the milk price 9.5 percent below the baseline in 2007.

Another modelling exercise in the United States, carried out by the United States Department of Agriculture, Economic Research Service in 1999 indicates in its projections that many European Union agricultural commodities will continue to be uncompetitive on world markets (Agra Europe No. 1872). It was predicted that the price cuts will allow exports of some wheat, pork, poultry and eggs without subsidy in 2000. Particular problems with the WTO may be expected in the dairy sector due to modest price reductions, i.e. exports will be difficult without subsidy. As the Agra Europe report summarised, “while the EU has given itself adequate advantage to face the World Trade Organisation round with equanimity on domestic support and imports access, it remains highly vulnerable on the export subsidy front”. Konandreas (1999) of the Food and Agriculture Organisation confirms this analysis with regard to the dairy sector which accounts for 29% of all EU export subsidies and which is largely unaffected by the Agenda 2000 reforms.

The United Kingdom, Ministry of Agriculture’s own analysis suggests a decline in producer returns by 2008 of 7% for the arable sector and 2% in dairying but an increase in beef returns of 5%. Considering the decline shown in the period 1997-1999 in market trends, and the deteriorating levels of return over 2000, little optimism is to be found in the estimates of future farm performance.

ENVIRONMENTAL IMPACTS

Turning to possible environmental impacts, ADAS and CSL (1999) were commissioned by the Ministry of Agriculture to examine the impact of Agenda 2000 reform proposals on pesticides and fertiliser use. This concluded that the impact of Agenda 2000 reforms, as drafted in March 1998, would be to return cropping patterns to a level close to pre set-aside levels, (based on the proposal in the initial Agenda 2000 proposals that set aside would be reduced to zero). Compared with 1996 it is predicted that set-aside will reduce by about 80 per cent, linseed would cease to be grown and peas and beans reduced by 20 per cent. These reductions would be replaced by increases in oilseed rape (78%), wheat (3%) winter barley (11%) and spring barley (20%). The areas of non-food crops are predicted to reduce significantly. The implications for pesticide and fertilise use result from the changes in crop area. The overall increases in weight of pesticide use are predicted to be insecticides 1.3 per cent, fungicides 6.0 per cent, herbicides 2.3 per cent, growth regulators 4.8 per cent and molluscicides 16.6 per cent. The increased area of wheat will lead to more isoproturon (herbicide) being used. More of the insecticide gamma-HCH will be used on oilseed rape and an increased use of pyrethroids would also be expected. Total annual tonnage of fertiliser nitrogen applied is predicted to increase by about 11 per cent and with the changed balance of cropping may increase rates from 139kg N/ha to 153 kg N/ha. The calculated impact on potential nitrate leaching of this is an increase of up to 3per cent.

A recently published study by the Utrecht Centre for Agriculture and Environment (1999) suggests that the Agenda 2000 reforms will provide minimal environmental benefits and describes the environmental rhetoric surrounding the reforms as little more than "window dressing". In the three main sectors of cereal, dairy and beef, there is no real shift towards greener policy:

> "The changes in the arable regime may have some positive effects, but these cannot be seen as a significant step towards the integration of environmental concerns into the CAP. Set-aside can lead to reduced pollution and have positive effects on biodiversity," the report concedes, but adds that the 15 per cent support price cut for cereals will do little to discourage fertilizer and pesticide use. In addition, maintaining the area payment for silage maize "has aroused concerns about loss of biodiversity, increased soil erosion, pesticide use and nutrient leaching in many regions," as farmers turn grassland to maize planting.
>
> In the dairy sector, increasing quotas for a handful of countries while the sector remains unreformed until 2005 "may lead to some further intensification and increased emissions". However, the outlook for Agenda 2000 beef reform is marginally brighter. In contrast to the arable regime, the payment system for beef "does not favour intensive beef farmers," in the EEB's view. The responsibility to allocate part of the funding in this sector (from 'national envelopes') is a "potentially important improvement, " as it offers scope to impose environmental criteria as conditions for payment (Agra Europe 1874).

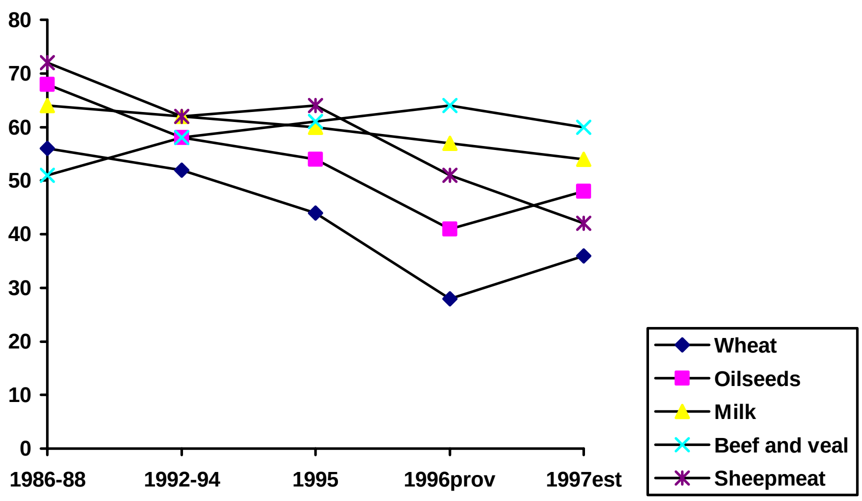
3 MARKET TRENDS

3.1 AGRICULTURAL TRENDS 1996-1999[1]

Some of the key trends in British agriculture during the period 1996-1999, with particular reference to the 1997/98 year, demonstrate the fall in the economic returns to agriculture, which is especially significant in some market prices. The drop in farming incomes is clear, especially in small farms and in the livestock areas which are in a loss making situation, a feature that is likely to continue as the new policies bite. Four re-valuations of the green rate during 1997/98 reduced the sterling value of CAP support payments by 14% (MAFF 1998), and this in particular reduced support payments.

Figure 3.1 shows the trends in Producer Subsidy Equivalents (PSEs)[2] for the period as calculated on an annual basis by the Organisation for Economic Co-operation and Development (OECD). It illustrates just how modest has been the move towards liberalisation as a result of the Uruguay Round reforms. In the case of the UK, it is interesting to note that the proportional share of total CAP spending has risen steadily over the period since 1992. In 1992, the UK accounted for 7.7% of total European Agricultural Guidance and Guarantee Fund (EAGGF) expenditure in the EU. This rose slowly to 8.9% in 1996 and dramatically to 10.8% in 1997. Initial increases in share were due to the large farm structure in the UK and the high proportion of arable farmers entering the main Arable Area Payments Scheme (AAPS). The sharp increase between 1996 and 1997 was due to BSE induced expenditure.

Figure 3.1 PSEs in Key Commodity Sectors of GB Agriculture



Source: OECD.

With the increasing value of sterling during the period between 1996 and 1998 many of the early gains experienced by the UK as a result of the implementation of the Uruguay Round agreement during a period of low sterling value have been wiped out. Both CAP support

[1] This section draws heavily on Winter 2000.

[2] PSEs represent an attempt to aggregate hidden and direct cash support for farmers through market support measures, direct payments, reductions in input costs and general services. For a full discussion of PSEs see Buckwell 1997.

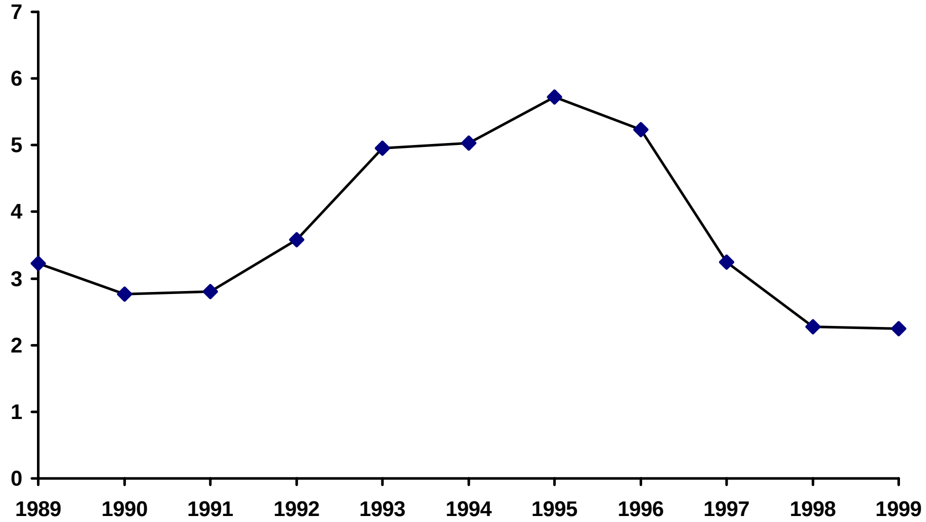
prices and direct payments have fallen in real terms and by the autumn of 1998 the aggregate support level was down by 21% from November 1995[3]. In real terms Total Income From Farming (TIFF)[4] doubled between 1990 and 1995, before falling back by over 60% between 1995 and 1999. (Table 3.1, Figure 3.2)

Table 3.1 Total Income from Farming in UK

	89	90	91	92	93	94	95	96	97	98	99 est
TIFF £billion	3.23	2.77	2.80	3.58	4.95	5.03	5.72	5.23	3.25	2.28	2.25
TIFF/head £'000	12.4	10.9	11.1	14.3	19.8	20.5	23.7	22.0	13.8	9.8	9.9

Source: MAFF Press Release

Figure 3.2 Total Income from Farming in UK (£billion – real terms)



Source: MAFF Press Release

3.2 FACTUAL EVIDENCE OF FARMINGS ECONOMIC PROBLEMS

The changes caused in UK agriculture , which are mentioned in the opening section and that have had so much publicity in the media, (i.e. Uruguay Round Agreements and subsequent CAP adjustments, BSE, and regulations concerning animal welfare) have had an effect that is seen in the movement of prices. It must also be realised that prices will move still lower as Agenda 2000 and measures in support of WTO agreements are implemented.

3.2.1 Arable Sector Economics

Market prices in the arable sector have undergone a significant downturn since 1996/97 (e.g. Fig 3.2). Following a period of high world prices and correspondingly high profits in the cereal sector, 1997 saw a fall in prices and a corresponding decline in profitability within the sector. By 1997/98, UK farmers had sustained a drop in cereal prices of about one-third from pre

[3] Agra Europe 1813. 28.08.98.
[4] Total Income From Farming is business profits plus income to workers with an entrepreneurial interest (farmers, partners, family workers).

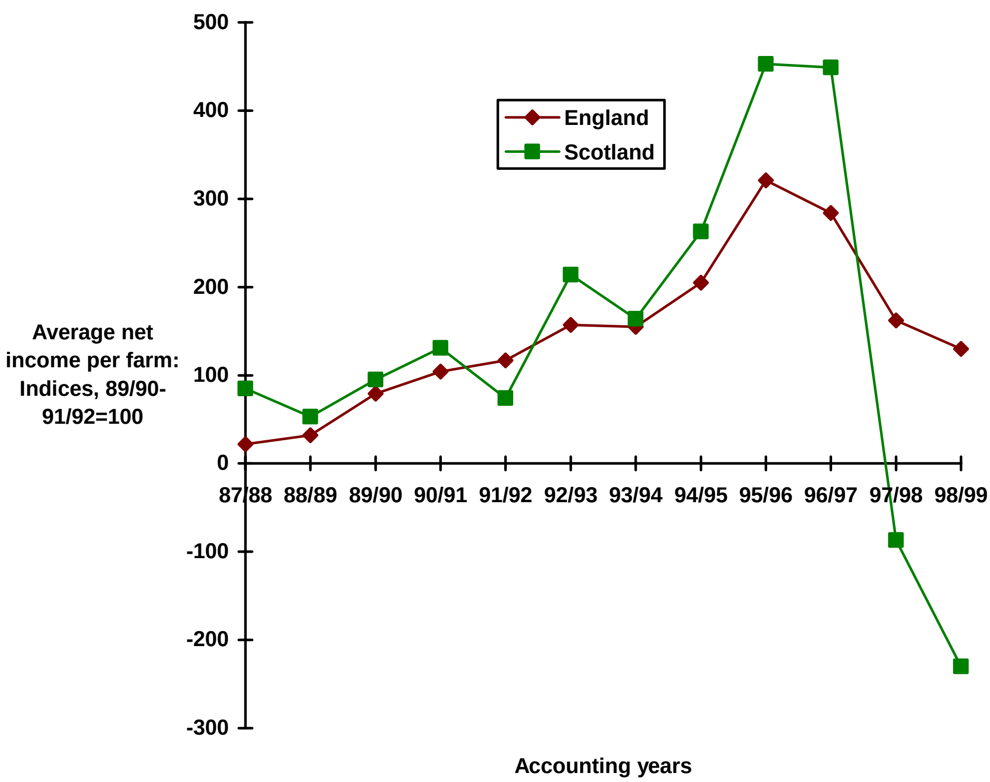
1995/96 levels (Hill and Cook 1999). Moreover, the strong pound hampered British exports. EU export levies were re-introduced for wheat and flour on two occasions and UK intervention stocks remained low throughout 1997, peaking at 15,800 tonnes, which compares to 6 million tonnes in 1986 (MAFF 1998).

The decline in profitability has resulted in a small decline in the area under cereal cultivation in 1998, down 2.5% in the UK between 1997 and 1998, and a further 9.1% between 1998 and 1999. By contrast the area under oilseeds rose by 13.7% between 1997 and 1998, but declined again by 14.9% between 1998 and 1999.

In 1998 there was, for the first time since 1992/93, an overshoot of the EU Maximum Guaranteed Area (MGA) for oilseeds (see 2.4.9) with seven member states liable to penalties. The UK was one of the worst 'offenders', exceeding its MGA by 45%, with a reduction of oilseeds aid of 23% in 1998/99 as a result. There was an overall arable area overshoot in 1998 of 1.4% in England and 7.8% in Scotland. There was also a massive overshoot of the forage maize base area in England, so much so that growers were paid on only 36.4% of their eligible area and associated set-aside, reducing the rate from £241.72 to £88.15.

Agra Europe (1813. 28.08.98), drawing on work at the University of Cambridge (1998), has pondered the significance of declining support levels for crop choice. Comparing gross margins of sugar beet and potatoes over a period from 1980, they show that whilst the sugar support regime has provided stability of returns compared to the cyclical experience of the non-supported potato producer, the balance is swinging in favour of potatoes as sugar beet support declines. They also point to the vigorous and innovative processing industry that is growing up around potato production since the demise of the statutory potato marketing scheme which limited production by quota.

Figure 5.2 Cereals: Net Farm Income in England and Scotland, Current Prices



Source: *Farm Incomes in The United Kingdom*, HMSO, annual.

The operation of the Arable Area Payment Scheme (AAPS) has been examined for MAFF and the Welsh Office Agriculture Department by Andersons (1997) in a survey based on analysis of MAFF data and interviews in 1997 with 575 arable farmers in England and Wales. Amongst those interviewed in the MAFF study, three-quarters felt that the AAPS had increased profits (Andersons 1997). Tables 3.2 to 3.4 provide important evidence on the buoyancy of the cereal sector in the post '92 period.

Table 3.2 Crop Subsidies on Cereal Farms adjusted for Green £ Devaluations since September 1992 (£'000), UK.

	1992	1993	1994	1995
Net farm income £ per farm	24.8	23.0	30.4	46.6
Crop subsidies £ per farm	9.1	26.3	31.0	38.1
CROP SUBSIDIES ADJUSTED TO SEPT 1992 GREEN £ RATE	9.1	22.0	26.4	29.8
Total devaluation effect £ per farm	-	4.3	4.6	8.3
Net farm income excluding devaluation effect £ per farm	24.8	18.7	25.8	38.3
Devaluation of green £ % since Sept 1992	-	19.3	17.2	27.7

Source: MAFF data analysed by Andersons (1997).

Table 3.3 Proportion of arable farmers indicating changes in income (%)

Change in Income	**England**	**Wales**
	%	%
Significant Increase	30	17
Slight Increase	44	59
No Effect	17	19
Slight Decrease	3	4
Significant Decrease	1	-
Don't Know	4	2

SOURCE: ANDERSONS (1997)

Table 3.4 Percentage of 1996 profits from Area Payments – England

% of profit from AAPs		**Farm Type**			**Farm Size (ha)**			
	All	Cereals	Gen crops	Other	1-14.9	15-99.9	100-299.9	300+
Less than 50	60	44	62	72	67	62	46	37
50-74	18	26	17	13	11	18	25	43
75-99	7	13	3	5	5	9	8	9
100+	4	7	3	3	3	3	8	3
Don't know	10	10	15	8	14	8	13	7

SOURCE: ANDERSONS FARMER SURVEY

The Andersons (1997) study found that 15% of farmers in England were growing crops on non-eligible land. The amount of land under cultivation is not given but is almost certainly small. Nonetheless there are likely to be negative rather than positive implications for landscape and wildlife in terms of loss of temporary grassland. This is consistent with the findings reported in Winter and Gaskell (1998) and Wintert (2000). A similar finding emerged in a PhD by Lind (1999), covering the 1995/96 season, reported in Robinson and Lind (1999):

> *There is evidence from the commercial cereal producers in north Hampshire that they have intensified their crop production, with some crops grown on non-eligible land despite the fact that AAPs cannot be claimed on these crops. Some non-eligible land has also been ploughed-up for potatoes as potato prices have been particularly buoyant. .... several of the larger cropping enterprises reported reducing their area of temporary grass in favour of permanent cropping, provided this was part of their entitlement to AAPs. .... This also increases use of agro-chemicals and thereby limits environmental benefits.* (Robinson and Lind 1999: 306)

3.2.2 Beef and Sheep Economics

Figures 3.8 and 3.9 illustrate the downturn in fortunes for the beef and sheep sectors. Things might have been worse - measures taken at the EU Agriculture Council meeting in March 1998 ensured that livestock premia payments to producers in 1997, although 5.4% lower than in 1996, were unaffected by the re-valuations of the sterling green rate. Nonetheless the trend is downward with 1998 payments 4.2% lower than in 1997 (MAFF 1998). UK market prices in the sheep sector remained firm for the first three-quarters of 1997. However, from end-October they began to fall steadily and for November/ December were some 30% down on the same period in 1996. This is largely attributed to the poorer quality of some lambs and to strengthening sterling, which has reduced export demand and thus led to higher domestic supplies. Nevertheless, good prices earlier in the year meant that for the year as a whole, prices averaged just 9% below 1996 levels (MAFF 1998).

A survey of hill farm income by the UK Tenant Farmers' Association found that average net farm income had fallen by 53% between 1997 and 1998, a fall bringing average net farm income down to £7, 400[5]. The NFU predicted in September 1999 that average cash hill farm incomes in Britain would fall to £5,300 in 1999[6]. These dire warnings are largely borne out by the Government's own predictions issued in November 1999 (Tables 3.5 and 3.6 which show that Net Farm Incomes[7] for Hill, Cattle and Sheep Farms in England and the United Kingdom in 1999/2000 are forecast to be lower than in 1998/99 in absolute terms, with a proportionate decline of 35% in the UK.

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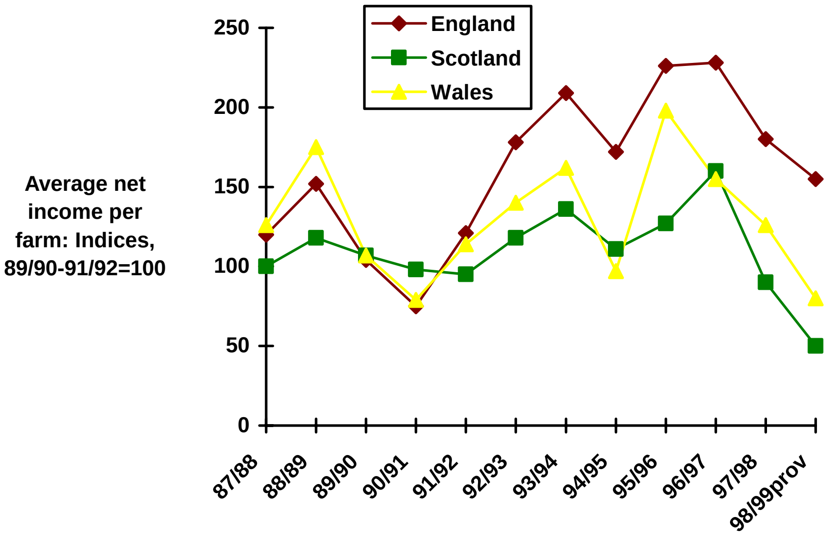
[5] Agra Europe 1824.13.1198.

[6] Agra Europe 1867 17.09.99.

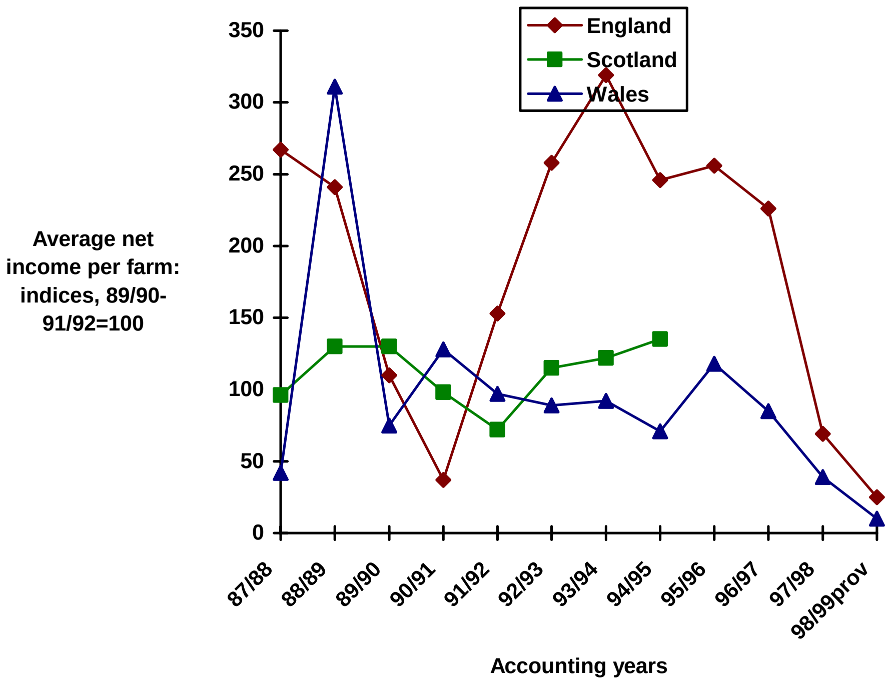
[7] Net Farm Income is the return to the principal farmer and spouse for their manual and managerial labour and on the tenant-type capital of the business. Tenant-type assets, which for this purpose are all assumed to be owned by the occupier, includes crops, machinery and livestock. Net farm income treats all farms on a consistent basis by assuming that all farms are tenanted. Thus the profitability of farms of different tenure can be compared. For owner-occupied land an inputed rent is included as a cost so that any other non-tenant-type costs linked to land, buildings and works have to be excluded. In addition an inputed labour cost is deducted for unpaid family labour (other than for farmer and spouse).

Figure 3.8 Cattle and Sheep (LFA): Net Farm Income in England, Scotland and Wales Current Prices



Source: *Farm Incomes in The United Kingdom*, HMSO, annual.

Figure 3.9 Cattle and Sheep (lowland): Net Farm Incomes in England, Scotland and Wales Current Prices



Source: *Farm Incomes in The United Kingdom*, HMSO, annual.

Table 3.5 Net Farm Income: LFA Cattle and Sheep Farms in England

FULL-TIME FARMS ONLY	Net Farm Income (£/farm)			Annual % change	
	1997/8	1998/9	1999/0	1998/9	1999/0
		(prov)	(forecast)	1997/8	1998/9
All SDA Cattle & Sheep	13,600	**8,100**	6,000	-40%	-25%
All LFA Cattle & Sheep	10,800	5,800	4,500	-47%	-20%

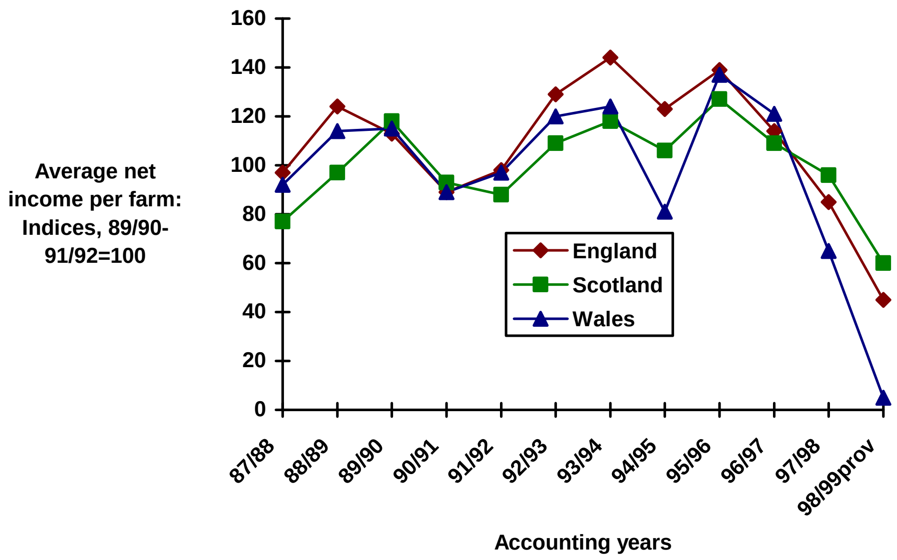
Table 3.6 Net Farm Income: LFA Cattle and Sheep Farms in the UK

Full-time farms only	Net Farm Income (£/farm)			Annual % change	
	1997/98	1998/99	1999/00	1998/99	1999/00
		(prov)	(forecast)	1997/98	1998/99
All SDA Cattle & Sheep	8,900	4,300	2,500	-52%	-35%
All LFA Cattle & Sheep	7,600	3,200	2,000	-58%	-35%

3.2.3 Dairy Sector Economics

For many years the dairy sector has retained its long standing high levels of profitability. A significant downturn in fortunes is now being experienced in the sector (Figure 3.11). In 1997 world and EU markets for butter were stronger than in 1996 as a result of increased demand from Russia. Consequently, intervention for butter was closed in most Member States throughout the year and in all Member States by the end of the year. UK stocks of intervention butter fell from a level of about 4,000 tonnes at the beginning of the year to 2,300 tonnes by the end of 1997. The market for milk powders weakened throughout 1997. In 1996-97 the level of quota remained at the same level as in 1995-96. During the 1996-97 quota year the UK exceeded its national quota of 14.2 billion litres by 0.38% and paid a superlevy of £14.70, compared with an over production of 1.11% in the 1995-96 quota year (MAFF 1998)

Figure 3.11 Dairy Net Farm Income in England, Scotland and Wales



3.2.4 Milk Quotas

In policy terms, the quota system remains the cornerstone of direct intervention in the dairy sector, although the high level of support largely derives from indirect market supports through trade barriers. The quota allocated to the UK was increased marginally from 14,091 million litres in 1993/94 to 14,158 million litres in 1994/95 a level retained in the following two years, a figure which is 87.5% of the level of milk sales in 1983/84 (Colman *et al* 1998). The milk quota system has been evaluated for the UK agriculture departments by Colman *et al* (1998). It is important at the outset to stress that the objectives of the report were very clear and do not include explicit examination of the impact of quotas upon the countryside. The study's objectives were as follows:

- assessment of the effectiveness of the current quota system in enabling producers to optimise the utilisation of the UK's quota allocation and the impact of constraints including the ring-fencing of quotas;

- assessment of the effect of milk quotas on existing asset values in the dairy sector in the UK and in individual countries, and the impact of quotas on the price of milk;

- assess the effects of alternative policy scenarios, such as two-tier pricing systems and the abolition of quotas.

These objectives for a policy evaluation by agriculture departments suggest that for the dairy sector there is a continuing reluctance to consider environmental issues alongside economic factors. This is borne out in the report where, for example, the efficiency of quota trading is assessed within an economic discourse which does not consider environmental externalities. Thus "for complete efficiency what is required is that milk is produced by the least-cost producers" (Colman et al 1998). Even a discussion of the costs arising from the quota regime which cites the cost of "milk which is poured away ... in the last days of the quota year " elicits no environmental comment.

However, it is possible to draw some countryside inferences, or at least raise questions, from the results. It is generally accepted, as discussed in Winter and Gaskell (1998)[8], that the impact of dairy farming on the environment has been exacerbated by concentration within the sector. Large units tend to employ intensive grassland management techniques and, of course, larger volumes of slurry tend to be concentrated within a single unit. Although larger farmers may have necessary capital resources to improve storage and handling facilities, overall intensity and concentration of production remains a problem. For example, Lowe *et al* (1997) estimated that the proportion of dairy farms in the west of England with estimated levels of nitrogen exceeding 170 kg per hectare[9] in 1990/91 was 42%. Further concentration of production is likely to have increased that figure since then. Thus any moves towards further concentration in the sector are a potential cause of concern. The figures for quota trading given in the Colman report show that the volume of trading (both permanent and temporary transfer) was higher in 1997/98 than for any year since trading commenced, with 14% of UK quota traded during the year. Extraordinarily, more than a quarter of holders of quota now lease out between 91% and 100% of their quota each year, a stark reminder of the extent of restructuring in the industry[10] since quotas were imposed in 1984 amidst fears that quotas would fossilize the pattern of production. The number of UK producers declined from 57,597 in 1983 to 37,668 in 1997 (Colman *et al* 1998). The Colman report shows there is continuing evidence of a drift of quota from the east and south of England to the north and west and to Northern Ireland, which is consistent with a continuing decline in arable-dairy systems, a decline commented on unfavourably in the context of farm animal welfare (Winter *et al* 1997), and is likely to have a range of negative environmental implications.

The reasons for the seemingly inexorable increase in size of dairy herds is alluded to in the Colman report which draws on work on the economics of dairy farming showing that the financial performance of large herds considerably outstrips that of smaller herds (Farrar and Franks 1998). Following de-regulation of the milk market (Anderson and Davis 1996), price differentials for the end product have increased. Thus larger producers benefit not only from favourable fixed costs but also a higher milk price. Thus the margin of milk prices over costs increases as herd size increases, from 5.44 to 12.51 pence per litre for lowland producers and from 5.48 to 12.19 pence per litre for upland producers (Colman 1998).

In assessing the economic consequences of quota, Colman *et al* (1998) note that quota trading (which totals £2.5 billion in permanent quota transfer alone since 1984/85) amounts to a very significant income transfer from current to former dairy farmers. They estimate that this increases the cost of producing milk by 2.5 pence per litre in 1997/98 with quota trading accounting for 12.5% of annual total milk revenue. The report estimates that a producer who has leased out quota annually since 1984/85 will have earned an annual rate of return of 27% on the original sale value foregone of that quota. Given the extent of the restructuring which has taken place in the industry, this raises questions about the effects on land management of such a financial transfer. As with any such transfers, different farmers will respond in different ways. Some might use the resources to facilitate changes in the farm business which will maintain levels of farming intensity. Taxation rules render this more likely where significant capital transfers have occurred through sale of quota. But in other cases, particularly where a farmer is moving towards semi or early retirement, money from leasing or selling quota might allow a gentle winding down of the farm business with less intensive grassland systems for beef or sheep. Thus the prospect of an end to quota trading or a diminution in quota value either as a result of declining profitability in dairying or a decision to end quotas would have land management consequences.

In a detailed analysis of the economics of milk production in England and Wales, Farrarr and Franks (1998) have examined farmers' future intentions for their dairy enterprise up to the year 2000 (sample size = 368). Table 3.7 shows the results and indicates a relatively low role for environmental concern in business planning.

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[8] See also Lowe *et al* 1997.

[9] The EC Nitrates Directive 1991 requires that the application of animal manures in vulnerable zones should not exceed 170 kg of nitrogen per hectare.

[10] This figure, of course, under-states the full extent of restructuring as in other cases quota has been sold.

Table 3.7 Main Influences of the Development of the Dairy Unit

Main influence		Ranked response		
	Mentioned	First	Second	Third
	%	%	%	%
Profitability of milk production	78	43	22	13
Personal circumstances (age, health etc.)	29	16	7	6
COST OF BUYING OR LEASING EXTRA QUOTA	45	13	15	17
Policy uncertainty with regard to milk quota	27	6	8	13
Family circumstances (succession etc.)	27	6	11	10
Capital requirements of continuation/ expansion of milk production (equipment, cows, land)	31	5	11	15
Uncertainty with regard to BSE	7	3	1	3
Profit of other enterprises	27	3	14	10
Realizable capital value of milk quota	14	2	7	5
Availability of labour	9	2	2	5
Environmental concerns (pollution etc.)	5	1	1	3

Source: Farrar and Ranks 1998: 99. Unweighted data. Other factors put forward as likely to influence future plans include; changes in hygiene standards, TB restrictions, the intention to change to organic milk production, disputes with landlords over quota and changes in farm size, including moving to a new farm.

Talling and Warren (1997) report on a postal survey of 133 dairy farmers in Devon and Cornwall on their responses to pollution regulations and grant schemes. Of note is the finding that few (only 15%) had altered their stocking density in order to reduce waste and just 12% had changed to loose housing in order to reduce the amount of liquid slurry to dispose of. The authors conclude that "farmers have done little to adapt their production systems to reduce the risk of water pollution, preferring to rely on capital works". This is consistent with the thesis advanced by Lowe *et al* (1997) that the pollution problem is often perceived by farmers as one requiring a 'technical fix' rather than fundamental adaptations to farming systems.

3.2.5 Organic Sector Economics

Organic farmers in the United Kingdom have found a small but growing market for their produce. Since 1997 there has been an increased uptake in the Organic Aid Scheme, even though the conversion stage presents some economic difficulties to farmers. Surveys have found regional distinctions in the growth of organic farms. These are possibly linked to the farming structure in certain areas, and the demand for organic produce among customers.

In pricing, vegetables may be three times the price of non-organic vegetables. Field crops such as wheat reach double the market price of non-organic wheat. The two adverse factors for the grower are lower yields and the need to seek out good marketing opportunities. With vegetables there may be a lower quality as well as the poorer yield, and with extra labour needed, these could reduce returns, although margins should still be good.

Academic studies of the growth in organic farming have been made, Ilbery *et al* (1999) have examined the geography of organic growers from an analysis of Soil Association farmers, Burton *et al* (1999). They suggest that organic producers are more likely to, be younger, run smaller businesses, be female and influenced by non-economic factors.

The possible limitation in size of the organic market exists among consumers. While some consumers are driven for the desire to have 'clean food', others are constrained by their budget. Two factors that may affect sales are, firstly the end price to the consumer, and secondly availability of supply.

For both cropping and livestock production, organic production presents another option for the farmer. The presence of financial assistance schemes and technical help should be an additional incentive to move into this type of farming. The current margins from organic production are good, though no comprehensive detailed figures are available. This situation is expected to continue in the near future although there is always the possibility of reduced prices if a number of farmers turn organic.

4. THE RESPONSE OF FARMERS[11]

The agriculture crisis and its short and medium term impacts have been the subject of a number of studies. Some such as Jones *et al* (1998) who examine the impact of the agricultural crisis on rural Wales, do so without recourse to fresh empirical survey evidence. But several others are based on survey evidence and these provide the main focus for our analysis here.

The NFU conducted a survey of 5,000 of its own members in 1999, *Audit for Action,* which found that 57% claimed to have seriously considered leaving the industry during the previous two years. Almost a third had reduced labour and 64% had increased borrowing[12].

In the south west of England PROSPER (1998), a training organisation, explicitly focuses on future prospects in the context not of prospective reforms but of experience of the sharpening agricultural crisis of 1998. The survey is based on a postal survey of 1,925 farmers in Devon, Cornwall, Somerset, and Dorset in the summer of 1998. Nearly 90% of farmers reported a decline in farm income within the previous twelve months. Just over 50% expect their family income to decrease during the coming 5 years. It is perhaps surprisingly optimistic that nearly as many felt that incomes would stay the same or even increase. The crisis does not only impact on incomes. For example, over 30% of farmers in the survey claimed that the amount of their leisure time had decreased substantially during the previous three years.

Over 50% of farmers in the PROSPER survey, including 60% of farmers under the age of 40, felt that farming would be able to adapt to the economic difficulties and survive. What is striking is how many see conventional agricultural strategies as the way ahead as demonstrated in Table 4.1. Thus, the time honoured traditions of expanding farm output and specialisation or continuing as normal are the most favoured options. A significant, but smaller, proportion contemplate non-agricultural income. Proponents of integrated farming systems, with its emphasis on the cost saving potential of lower inputs (see Morris and Winter 1999, Park et al 1999), can draw little comfort from the one per cent who envisaged a reduction of costs and inputs as a way forward. However, it is important to note that this option was not a pre-given response in the postal questionnaire. According to the researcher who designed the survey (personal communication) this was deliberate as it was felt that a high proportion of farmers would automatically tick cost-cutting if it was listed as a ‘good idea’ without having seriously considered whether it could be achieved. It was hoped that only farmers who were seriously considering the option would specify it in the ‘other’ category. Other national surveys, which do provide this option for farmers to tick, give considerably more prominence to reductions in inputs.

[11] This section draws heavily on Winter 2000.
[12] Agra Europe 1868. 24.09.99

Table 4.1 Farmers' Perceptions of Likely Steps to Secure Future

Steps to secure future	***% of Respondents***
Expand or increase farm output	56
Withdraw from unprofitable enterprise	35
Continue as at present	30
Other family member take up paid work	22
Start non-farming enterprise	21
Self (the farmer) take up paid work	14
Intend to withdraw and sell up	12
Reduce costs or inputs	1
Sell or let land/building/assets	1
Other steps	1
Non response	4

Source: Prosper 1998: p21

The surprising optimism in conventional solutions, which might be seen as indicative of a rejection of post-productivism within the farming community, has to be put against the high proportion of farm households looking in practice for additional income outside the farm and an accelerating use of diversified income sources. Thirteen per cent of respondents and 13% of spouses had taken other paid employment to supplement their farm income during the previous twelve months alone.

Prosper's findings are borne out by Gasson et al (1998) who surveyed 491 English farmers in 1997. Table 4.2 shows the respondents response to a question on whether particular steps had been taken in response to the financial uncertainties of the 1990s. Once again, the responses illustrate a strong commitment to increased production and to specialisation, although, as noted above, cutting inputs also figures strongly in this survey. The authors summarise their findings as follows:

> Commonest responses to the financial uncertainties of the 1990s have been to increase output from existing enterprises, cut out unprofitable enterprises, reduce inputs and machinery and labour costs, increase the area farmed in order to spread costs and take financial advice. Despite a considerable degree of restructuring, nearly half the respondents claims to be carrying on as before. ... Those under most financial pressure are more likely than other farmers to have reduced inputs, cut machinery costs and lengthened the repayment periods of loans. Farmers under the most pressure are also the most likely to have other family members seek work off the farm. Gasson et al 1998: p.37.

Table 4.2 Response to Financial Uncertainties of the 1990s

Type of response	***% of Respondents***
Steps to increase income	
Increase output from existing enterprises	65
Cut out an unprofitable enterprise	32
Start a non-farming enterprise	18
Introduce a more profitable enterprise	15
Other family member takes off-farm employment	12
Intend to withdraw and sell up	12
Take paid employment outside the farm	5
Steps to cut direct costs	
Reduce amounts of inputs used	45
Reduce machinery costs	42
Reduce labour costs	38
Steps to cut the cost of borrowing	
Sell assets to pay off debts/overdraft	18
Borrow from cheaper interest sources	14
Lengthen repayment period of loans	6
Other steps	
Carry on as before	45
Take financial advice	30
Increase farm area to spread costs	26
Leave farming altogether	4

Source: Gasson *et al* 1998: p. 28

An ADAS (1999) survey of 2,352 farmers in England and Wales (a response rate of 37%), in line with other studies, found a surprising degree of optimism despite inherent and deep rooted difficulties within the industry. Ninety five per cent of farmers have seen their profits decline, with nearly half expecting to make a loss this year, but less than one in ten feel their business will not survive. Table 4.3 shows that the majority of farmers expect to continue in farming and Table 4.4 shows that expansion and diversification are seen as strategies by which this might be achieved. Forty per cent of farmers hope to survive by purchasing more land, 54% are seeking to rent more land, 64% envisage developing non-farming sources of income and 50% are looking to diversify. Table 4.5 shows how farmers see their financial future showing a somewhat bleaker view than implied in the other data.

Table 4.3 Current Attitude to Farming

Statements	**No.**	**%**
Farming has no future - I intend to give it up	96	4
Farming has a limited future - I need to diversify	384	17
I see my future in farming and I want to increase the size of my farm business	529	23
I am happy to stay farming as I am now and for the foreseeable future	344	15
I am worried about my future in farming but I don't know what else I can do	456	20
I see my future in farming but I expect that I will have to change my farming practice	493	21
Total	**2,302**	**100**

Source: ADAS Farmers Voice Summary Results 1999: p. 2

Table 4.4 Likely Changes in Business Strategy

Statements	Yes %	Possibly %	Total No.
Give up farming	2	9	1,962
Sell out and buy a farm elsewhere	1	6	1,916
Retain ownership but lease land to another farmer	3	12	1,941
Retain ownership but enter into a farming agreement with another farmer	4	13	1,917
Seek to purchase more land	8	32	1,960
Seek to rent in more land	16	37	1,995
Invest in farming opportunities overseas	1	5	1,896
Develop non farming sources of income	27	38	2,035
Diversify e.g. non farming use of land	18	33	2,005

Source: ADAS Farmers Voice Summary Results 1999: p. 2

Table 4.5 Financial overview of farm business

Statements	No.	Overall %
At the moment my business is not profitable and may not survive	179	8
At the moment my business is not profitable but can survive for another year or two	793	34
Profits are down, but my business should be able to weather the crisis	1,239	54
I am managing to maintain my profit level	70	3
I have managed to increase profits	26	1
Total	**2,307**	**100**

Source: ADAS Farmers Voice Summary Results 1999: p. 3

Turning now to a Scottish study, Allbrooke *et al* 1998, undertook a postal survey in March-April 1998 of farms in Dumfries and Galloway with 119 responses. The results are broadly compatible with those of the other two surveys, with key results as follows:

- Amongst dairy farmers the direction is clearly toward expansion by increasing the size of herd, volume of milk sold and size of quota. Only 1 dairy in the survey said it would cease production though about a quarter said they would not increase milk sales. (This has implications for the environment if it leads to more accidental pollution and erosion of more natural low ground habitats as dairies intensify).

- Beef units are more pessimistic. 20% aim to reduce beef cow numbers with similar numbers cutting back on store and fat cattle sales and purchases. About a fifth of respondents, however, intend to increase beef cow numbers. In the beef sector, however, the biggest intention is no change, though within this group a shift to more cattle finishing rather than store sales is evident.

- Less change is expected in the sheep sector with almost three-quarters of those responding planning no change in ewe numbers. A sizable number aim to increase lambing percentage and, as in the beef sector, there is a shift from store to fat lamb production to add value.

- Cropping support through arable area payments, is likely to change little, though 15% of those responding to this parameter expected to decrease or cease cropping, thus continuing the long term trend in Dumfries and Galloway.

- Among inputs there is a strong feeling that feed purchases will have to decrease. 51 farmers recorded this response and another 25 expect to cut fertiliser use.

- Capital expenditure plans are the most worrying area for the input supply sector with 68% of respondents (71 farmers) expecting to cut their annual investment in machinery. 55% expect to cut buildings investment and a proportion also plan to reduce fencing/drainage and delay upgrading livestock investments.

- 30% plan to increase the use of machinery rings while around 20 farms in the sample expect to reduce the number of full-time and part-time workers. The majority of farms do not intend to change their labour.

- 40 farms expect to cut personal drawings from the business. To hopefully balance this, 33 will seek to increase off farm work/income, 19 to increase income through diversification and 22 will increase the time spent on learning new skills.

- Little change in land and asset ownership is planned. A small, but significant minority would like to increase the amount of land they own or rent, but most do not plan to expand or contract the farmed area or to sell off unproductive assets, cottages, etc.

- Virtually no other planned changes were listed. One stated an increase in woodlands, another more property lets and one a shift to organic production.

Allbrooke *et al* 1998: p.118-119

Another Scottish study by Ramsay *et al* (1999) is based on a postal survey of 429 farmers in the Borders area of Scotland. As with other studies, few farmers anticipated radical changes to the enterprise mix or intensity of their farming business in response to the crisis, but significant reductions in capital expenditure were indicated by almost half the respondents. Nearly a half (46%) envisaged a need to develop non-agricultural sources of income, with holiday accommodation and off-farm employment the most likely developments.

McDonald and Roberts (1998), Bennett and Jones (1999) DTZ Pieda (1998) all consider the crisis from the specific point of view of BSE (see also Hughes and Midmore 1997). Whilst the McDonald and Roberts and Pieda research prioritises macroeconomic analysis of the economy as a whole, and are not considered further here, Bennett and Jones use econometric modelling techniques (the Land Use Allocation Model - LUAM) to examine the implications for land use in England and Wales of the BSE crisis under three demand scenarios for the year 2000. Scenario 1 involves a 20.31% reduction in beef output between 1995 and 2000, whilst Scenarios 2 and 3 are based on lower downturns of 12.4% and 13.25% respectively. Table 4.6 shows significant potential regional shifts in production as a result of adjustments made by farmers to beef and dairy enterprises arising from BSE. There are additional knock-on effects for other enterprises. One of the problems of this kind of research is that the alternative scenarios can produce quite different results. Thus, for example, under Scenario 1 cereal production in East Anglia declines significantly whilst, under Scenarios 2 and 3, it increases slightly. Within the beef sector itself there is a switch to lower intensity production, which is particularly marked in the south west, the north and the south east. By contrast dairy production increases in intensity:

> In terms of land use changes, perhaps the most interesting projections of the LUAM relate to input use and the intensity of production. English Nature expressed its concern that the BSE crisis might result in detrimental impacts on the condition of semi-natural and wet grasslands, coastal grazing marshes and moorland Sites of Special Scientific Interest because beef farmers would increase their intensity of production (English Nature, 1998). The LUAM projects that the use of inputs such as fertilisers and purchased cattle feed will fall and that beef production will become more extensive. This may, therefore, have benefits for nature conservation - in the South West, South East and, perhaps particularly, the Northern region where the intensity of dairy production increases less than in the South West and South East.
> (Bennett and Jones, 1999: p.20-21.)

Interestingly, the authors misinterpret English Nature's concerns which are not, in fact, expressed in terms of the fear of intensification but rather that grazed SSSIs face the risk of a damaging *decline* in cattle grazing (English Nature 1998 and work conducted for EN on this topic reported in Winter *et al* 1998).

Table 4.6 Output Value by Regions (constant 1995 prices) resulting from BSE

	1995	Scenario 1	Scenario 2	Scenario 3
Northern				
Dairy	334.166	327.647	329.412	329.412
Beef	270.162	218.979	222.199	222.181
Sheep	136.168	126.956	126.849	127.752
Cereals	92.857	92.529	93.336	93.336
Yorkshire/Humberside				
Dairy	226.820	211.936	217.790	217.790
Beef	188.017	153.093	154.177	154.099
Sheep	103.554	102.771	102.470	102.500
Cereals	188.353	180.979	183.484	183.484
East Midlands				
Dairy	307.825	287.216	289.142	289.142
Beef	168.749	129.775	135.611	133.032
Sheep	47.665	63.540	46.420	48.145
Cereals	437.259	411.539	443.305	443.305
East Anglia				
Dairy	46.887	41.721	42.130	42.130
Beef	69.718	58.619	65.643	58.672
Sheep	41.876	43.317	42.698	40.445
Cereals	279.334	300.049	280.645	280.645
South-East				
Dairy	388.661	394.673	379.394	379.394
Beef	233.413	176.253	204.263	197.102
Sheep	62.636	66.904	70.754	68.421
Cereals	420.309	441.308	421.533	421.533
South-West				
Dairy	540.502	527.034	518.972	518.972
Beef	243.104	188.305	211.831	210.720
Sheep	57.742	55.564	60.182	61.576
Cereals	121.961	120.415	122.504	122.504
West Midlands				
Dairy	296.873	284.779	290.121	290.121
Beef	178.907	136.245	152.584	152.524
Sheep	56.676	53.503	61.935	61.963
Cereals	175.797	168.801	170.856	170.856
North-West				
Dairy	189.883	191.628	192.661	192.661
Beef	99.261	81.279	81.393	81.393
Sheep	50.364	50.716	50.715	50.715
Cereals	32.645	35.562	35.768	35.768
Wales				
Dairy	390.477	367.546	369.426	369.426
Beef	243.728	226.776	231.162	231.037
Sheep	235.028	232.642	233.823	234.325
Cereals	44.607	45.527	45.277	45.277

Source: additional data provided by Bennett and Jones, University of Reading[13].

[13] Grateful thanks to Richard Bennett and Phil Jones for providing some additional data to supplement the data in their paper to allow compilation of this table.

REFERENCES

ADAS (1999) *Farmers Voice Survey*, ADAS, Guildford.

ADAS and CSL (1999) *CAP Reform: Potential for Effects on Environmental Impact of Farming,* SA0111 Report to MAFF, ADAS, Boxworth, and Cambs.

Andersons (1997) *Economic Evaluation of the Arable Area Payments Scheme*, Report to MAFF by Andersons and the Department of Agricultural and Food Economics, University of Reading.

Bennett, R. M. and Jones, P. J. (1999) Modelling the impact of BSE policy on agriculture in England and Wales, *Land Use Policy* 16 (1). 11-22.

Buckwell, A. (1997) Some microeconomic analysis of CAP market regimes, pp 139-162 in Ritson, C. and Harvey, D. (eds) (1997) *The Common Agricultural Policy*. CAB, Wallingford.

Burrell, A. (ed.) (1989) *Milk Quotas in the European Community*. CAB International, Wallingford.

Burton, M. Rigby, D., and Young, T. (1999) Analysis of the determinants of adoption of organic horticultural techniques in the UK, *Journal of Agricultural Economics* 50 (1). 48-63.

Colman, D. Burton, M. P. Rigby, D. S. and Franks, J. R. (1998) *Economic Evaluation of the UK Milk Quota System*, Report to MAFF, WOAD, DANI, and SOAEFD by the University of Manchester Centre for Agricultural, Food and Resource Economics.

Cox, G. Lowe, P. and Winter, M. (1990) The political management of the dairy sector in England and Wales. In *Political, Social and Economic Perspectives on the International Food System*, eds. T. Marsden and J. Little pp.82-111. Avebury, Aldershot.

DTZ Pieda (1998) *Economic Impact of BSE on the UK Economy*, Report to the UK Agriculture Departments and HM Treasury.

Farrar, J. and Franks, J. R. (1998) *The Economics of Milk Production in England and Wales*, Farm Business Unit, University of Manchester.

Fennell, R. (1997) *The Common Agricultural Policy: Continuity and Change*, Oxford: Clarendon Press.

Gasson, R., Errington, A., and Tranter, R. (1998) *Carry on Farming: A Study of how English Farmers have adapted to the Changing Pressures on Farming*, Wye College, University of London.

Grant, W. (1997) *The Common Agricultural Policy*, London: Macmillan.

Hill, B. and Cook, E. (1999) Cereal production in the European Union since MacSharry, Farm Management 10 (7). 416-432.

Ilbery, B., Holloway, L., and Arber, R. (1999) The geography of organic farming in England and Wales in the 1990s, *Tijdschrift voor Economische en Sociale Geografie* 90 (3). 285-295.

Johnson, D. G. (1995) *Less Than Meets The Eye: The Modest Impact of CAP Reform,* London: Centre for Policy Studies.

Jones, W. G., Midmore, P., Haines, M., and Mackay, R. (1998) *Rural Wales and the Agricultural Crisis*, IWA Discussion Paper No. 4, Cardiff: Institute of Welsh Affairs.

Kay, A. (1998) *The Reform of the Common Agricultural Policy:* Wallingford: CAB.

Konandreas, P. (1999) Next round of the negotiations in agriculture with specific reference to the dairy sector, Paper to the International Dairy Conference, Argentina.

Lind, M. (1997) *Environmental Aspects of Set-Aside: a Study in Northern Hampshire*, Unpublished Ph.D. Thesis, School of Geography, University of Kingston.

Lowe, P. Clark, J. Seymour, S. and Ward, N. (1997) *Moralizing the Environment: Countryside Change, Farming and Pollution*. UCL Press, London.

MAFF (1998) *1998 Departmental Report by the Ministry of Agriculture, Fisheries and Food and the Intervention Board,* Presented to Parliament by the Minister of Agriculture, Fisheries and Food and the Chief Secretary to the Treasury, Cmnd Paper 3904.

McDonald, S. and Roberts, D. (1998) The Economy-Wide Effects of the BSE Crisis: A CGE Analysis, *Journal of Agricultural Economics* 49, No. 3. 458-472.

Ockenden, J. and Franklin, M. (1995) *European Agriculture: Making the CAP fit the Future*, London: Pinter.

PROSPER (1998) *The Hopes and Fears of South West Farmers*, Exeter.

Ramsay, D. A., Mitchell, M., Stewart, L., Kerr, G., and McLaughlin, C. (1999) *Impact on Scottish Borders Region of the Farming Crisis and Agenda 2000*, Report by SAC to the Scottish Borders Council.

Robinson, G. M. and Lind, M. (1999) Set-aside and environment: a case study in southern England, *Tijdschrift voor Economische en Sociale Geografie* 90 (3). 296-311.

Swinbank. A . (1999) CAP Reform and the WTO', *European Review of Agricultural Economics*,

Swinbank, A. and Tanner, C. (1996) *Farm Policy and Trade Conflict: The Uruguay Round and CAP Reform*, Ann Arbor: University of Michigan Press.

Talling, S. and Warren, M. F. (1997) Dairy farmers and point source pollution in South West England, *Farm Management* 9, No. 11. 555-565.

Utrecht Centre for Agriculture and Environment (1999) *EU Agricultural Policy after 2000: has the environment been integrated?* A report for the European Environment Bureau.

Winter, M. (2000a) Strong policy or weak policy? The environmental impact of the 1992 reforms to the CAP arable regime in Great Britain, *Journal of Rural Studies*, 16 (1), 47-59.

Winter, M.. (2000b) (with Winter, H. and Gaskell, P.) *The Common Agricultural Policy and the British Countryside: A Desk Study on the Impacts of CAP Reform*, report to Countryside Agency, Countryside Council for Wales, English Nature and Scottish Natural Heritage, CCRU, Cheltenham.

Winter, M. and Gaskell, P. (1998a) (with Gasson, R. and Short, C.) *The Effects of the 1992 Reform of the Common Agricultural Policy on the Countryside of Great Britain,* 3 volumes, Report to Countryside Commission, Countryside Council for Wales, Department of the Environment and Scottish Natural Heritage. Cheltenham: Countryside & Community Press and Countryside Commission.

Winter, M. and Gaskell, P. (1998b) The Agenda 2000 debate and CAP reform in Great Britain: is the environment being sidelined? *Land Use Policy*, 15 (3), 217-231.

Winter, M. Gaskell, P. and Short, C. (1998) Upland landscapes and the 1992 CAP reforms, *Landscape Research*, 23 (3), pp. 273-288.

Winter, M. Evans, N. and Gaskell, P. (1998) *The CAP Beef Regime in England and its Impact on Nature Conservation,* English Nature Research Report No. 265.

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[i]On the complex issue of costing the CAP see: Buckwell 1997.