Economic Evaluation of the Organic Farming Scheme

Final report
to the
Department for Environment, Food and Rural Affairs

Centre for Rural Economics Research
Department of Land Economy
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1. Introduction

1.1 Background to the study

As the environmental and wider social benefits of sustainable farming systems are gaining increasing recognition among policy makers and the general public, governments across Europe have increasingly been promoting the switch to organic agriculture. All Member States have taken advantage of the Agri-Environmental Regulation (EC 2078/92) to provide financial support to producers willing to adopt organic farming methods and, with the exception of the UK and France, for the maintenance of organic production. In the UK, support has been offered since 1994 – first under the Organic Aid Scheme (OAS) and later under the Organic Farming Scheme (OFS). The OAS provided the lowest rates offered by any of the Member States, and between 1994 and 1999 only 400 farmers entered the Scheme in England. With numbers of organic producers remaining low amidst rising consumer demand for organic food in the mid-1990s, MAFF responded with the launch of the Organic Conversion Information System (OCIS) in 1996 and, in April 1998, announced substantially increased payment rates under the OFS, which replaced the OAS in 1999 (Table 1.1).

The responses of farmers to both schemes, OFS and OCIS, clearly exceeded MAFF’s projections, and the funding of £12m allocated to the OFS for two years was exhausted within six months, having attracted around 1,300 applicants. As a result, no further applications were processed. The Scheme was reopened in January 2001 within the framework of the England Rural Development Programme (ERDP), with roughly £18m allocated for the organic sector in 2001/2. More money (on average £21m a year) has been pledged for organic agriculture until 2006 (Table 1.2).

The take-up rates so far are clear evidence that the largest ever wave of conversion to organic farming methods in the UK is currently underway. By June 2001, the area of UK farmland under organic management or in conversion had increased to nearly 623,200 hectares, an area twelve times greater than in April 1997. This represents 3.9% of the total agricultural land area and is well in line with the EU average of c.3%.
Table 1.1: Payment rates under OAS and OFS (£ per hectare)

<table>
<thead>
<tr>
<th>Year</th>
<th>Improved land, non-LFA</th>
<th>LFA (England and Wales)</th>
<th>Rough grazing (Scotland and N. Ireland)</th>
<th>AAPS eligible land and permanent crops</th>
<th>Ineligible arable land and grassland</th>
<th>Unimproved3 grassland or rough grazing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year1</td>
<td>70</td>
<td>14</td>
<td>10</td>
<td>225</td>
<td>175</td>
<td>25</td>
</tr>
<tr>
<td>Year2</td>
<td>70</td>
<td>14</td>
<td>10</td>
<td>135</td>
<td>105</td>
<td>10</td>
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<tr>
<td>Year3</td>
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<td>10</td>
<td>7</td>
<td>50</td>
<td>40</td>
<td>5</td>
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<td>Year4</td>
<td>35</td>
<td>7</td>
<td>5</td>
<td>20</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>Year5</td>
<td>25</td>
<td>5</td>
<td>5</td>
<td>20</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>250</td>
<td>50</td>
<td>37</td>
<td>450</td>
<td>350</td>
<td>50</td>
</tr>
</tbody>
</table>

1. The minimum area eligible for grant aid was one hectare, maximum was 300 hectares. Additional payment for the first 5 hectares of £30/ha and year.

2. The minimum area eligible for grant aid is one hectare, there is no maximum area in England. A lump sum contribution towards the initial costs of advice and training (£300 in year 1, £200 in year 2 and £100 in year 3 is available for the first undertaking on an organic unit.

3. Unenclosed land and grazed woodlands in Wales

Table 1.2: OAS and OFS funding (£’000) in the UK

<table>
<thead>
<tr>
<th>Year</th>
<th>Organic Aid Scheme</th>
<th>Organic Farming Scheme</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995-96</td>
<td>261</td>
<td></td>
</tr>
<tr>
<td>1996-97</td>
<td>374</td>
<td></td>
</tr>
<tr>
<td>1997-98</td>
<td>571</td>
<td></td>
</tr>
<tr>
<td>1998-99</td>
<td>1,026</td>
<td></td>
</tr>
<tr>
<td>1999-2000</td>
<td></td>
<td>12,037</td>
</tr>
<tr>
<td>2000</td>
<td></td>
<td>13,400</td>
</tr>
<tr>
<td>2001</td>
<td></td>
<td>20,600</td>
</tr>
<tr>
<td>2002</td>
<td></td>
<td>19,000</td>
</tr>
<tr>
<td>2003</td>
<td></td>
<td>19,900</td>
</tr>
<tr>
<td>2004</td>
<td></td>
<td>22,300</td>
</tr>
<tr>
<td>2005</td>
<td></td>
<td>22,900</td>
</tr>
<tr>
<td>2006</td>
<td></td>
<td>22,600</td>
</tr>
</tbody>
</table>

From 2001: projections
Source: House of Commons (2001)
In spite of the Scheme's apparent success and popularity with the farming community, the increased incentives have been criticised for: not providing financial support beyond a five-year extended conversion period, and therefore maintaining a policy of high consumer prices for organic food; not recognising the environmental benefits of organic management practices; and limiting the area per holding eligible for support to 300 hectares thereby failing to reach some significant upland areas where overgrazing is a serious environmental problem (Soil Association, 1998).

On the other hand, there are also voices calling for a more cautious approach to public support for organic farming. Critics have argued that support could lead to a distortion of the market and falling producer prices, and might thus be harmful to those who are already operating in the industry. There are also fears that in prevailing economic conditions organic aid attracts farmers who are motivated by a hope of finding a way out of existing problems rather than by a thoroughly thought through vision of sustainable organic production (House of Commons, 2001).

1.2 Objectives of this evaluation

The ERDP is due to be reviewed in 2003, and so it is appropriate at this time to take stock of what the OFS has achieved to date and how the policy might evolve. In this report we review and assess the impacts the OFS has had on the organic sector, individual farms, the environment and supply control.

The specific objectives of this research are to:

a) consider the underlying rationale behind public assistance for organic farming and assess to what extent the OFS’s initial objectives are still valid. This takes in an exploration of the nature and extent of any actual or potential market failures arising from factors such as poor information, lack of critical market size and environmental externalities;

b) assess the effectiveness of the Scheme in meeting its environmental and supply-control objectives. This assessment takes account of additionality considerations – the extent to which conversion to organic agriculture would have taken place in the absence of the Scheme – and the findings will be considered against the effectiveness of possible alternative interventions;
c) assess to what extent the Scheme has provided value for money. This will involve a consideration of alternative policy options in meeting stated objectives;

d) examine the nature and extent of any knock-on or unexpected side effects of the Scheme, taking into account both on-farm effects and possible impacts on neighbouring farms;

e) consider, on the basis of all of the above, the scope for cost-effective improvements to the Scheme and make recommendations on the future direction of government support for organic farming.

1.3 Methodology

The methodology for this study comprises the following elements:

**Literature review**

We reviewed the literature under five broad headings: (1) wider public benefits of organic farming; (2) farm-level profitability of organic farming in relation to conventional agriculture; (3) obstacles to conversion; (4) experience gained from organic aid schemes; and (5) perspectives of organic farming in Europe. The purpose of the literature review was twofold: first, to assess the nature and strength of the evidence underpinning the rationale for public assistance of organic agriculture; and second, to inform the design of the questionnaires for this study. We included a review of German-language literature because organic agriculture in German-speaking countries has a rather longer tradition than in the UK and hence it was thought that more research had been done.

**Postal survey of organic and non-organic farmers**

Questionnaires were sent out to 400 Scheme participants and to a control group of 400 non-organic farmers who have shown no apparent interest in organic farming. In addition, 75 questionnaires were sent to farmers who had enquired through the OCIS help-line but had subsequently not converted to organic practices. The sample of Scheme participants was chosen at random from DEFRA’s database, with no preference being given to any particular group of farmers, farm types or regions. The reference group was selected with the help of DEFRA’s Statistical Unit to match the...
geographical pattern of the sample of Scheme participants. In a number of cases, follow-up telephone interviews were carried out for clarification of answers or apparent inconsistencies in the responses or to follow up on interesting comments made by respondents.

The survey covered a broad range of topics, including the socio-economic status of the farmers and the characteristics of their holdings; changes in the production programme and changes in yields attributable to conversion to organic farming; perceived environmental benefits after conversion; farmers’ knowledge of organic agriculture; information sources; marketing arrangements; motives for conversion; perceptions of organic farming and organic farmers; farmers’ views of the present support arrangements and opportunities for improvements; attitudes towards alternative pricing systems; reactions to different payment rates; obstacles to conversion, including training and information needs, marketing and processing, and institutional and social barriers. Copies of the questionnaires are included in Annex A1.

A total of 323 questionnaires have been returned – 180 from Scheme participants, 126 from non-organic farmers, and 17 from farmers who had made enquiries through the OCIS help-line but had subsequently not switched to organic practices. This can be set against a target of 150 for organic, 100 for non-organic, and 50 for OCIS farmers. The records of the 17 OCIS farmers who returned their questionnaires have not been included in this analysis as it turned out that many of these farmers had indeed converted their farms to organic practices in the meantime. Information on the socio-economic characteristics of survey farmers is given in Annex A2. The questionnaires included a number of open-ended questions inviting farmers to comment on specific issues. These comments have been transcribed (100 for organic and non-organic farmers respectively) and are included in Annex A3.

Econometric analyses

A number of econometric analyses have been carried out to ascertain whether information failure, lack of critical mass and lack of organic infrastructure represent significant obstacles to conversion to or maintenance of organic production. These will be introduced and explained in the relevant sections of the report. One of these
analyses is based on a data set which was compiled by the research team as part of an independent survey conducted at the beginning of 2001.

Survey of stakeholders

A wide range of stakeholder interviews was carried out by telephone. Interviewees were drawn from a list provided by DEFRA covering the whole spectrum of organisations with an interest in organic farming (Annex A4). The purposes of the stakeholder survey were threefold: (1) to understand how well the objectives and operation of the OFS meshed with their own priorities and to evaluate the pros and cons of the present Scheme from their perspectives; (2) to identify solutions to limitations and difficulties associated with the present Scheme and to gauge opinions on ways of increasing the cost-effectiveness of the Scheme; and (3) to elicit stakeholders’ visions for the future of organic support arrangements in the face of a rapidly changing agricultural policy environment. The focuses here were on the future rationale and objectives of organic support, the pros and cons of ongoing support, alternatives to area-based payments, the usefulness or otherwise of targeting support on specific producers or regions, and the Green Box compatibility of different organic support arrangements.

We used semi-structured interviews in recognition of the fact that respondents come from a variety of professional backgrounds and contexts and do not have a common position as regards their expertise and specialisation. This interview technique was intended to provide qualitative depth by allowing respondents to talk about the subject within their own frame of reference.

Expert interviews

We conducted interviews with experts at the Centre for Ecology and Hydrology at Merlewood, and invited them to comment on some of the emerging findings relating to the environmental impacts of organic conversion. We discussed the effectiveness of organic farming in generating environmental benefits against alternative, more targeted agri-environmental measures, and possible ways of making organic farming support more effective for producing desired environmental effects.
1.4 Outline of the report

Section 1 of the report introduces the study. Section 2 assesses from a theoretical perspective the rationale for public-sector intervention aimed at assisting the transition to organic farming. This is followed, in Section 3, by an assessment of the nature and strength of the empirical evidence underpinning the rationale for public assistance of organic farming. Section 4 covers the effectiveness of the OFS in achieving its objectives and draws mainly on data from the farm survey. Section 5 examines to what extent the OFS has delivered good value for money (VFM) and considers ways in which VFM might be increased by possible modifications to the present support arrangements. Section 6 develops a possible direction for the future of organic support policies and includes discussions of alternatives to area-based support and the pros and cons of ongoing support; this section is based mainly on the stakeholder consultations. The main report ends with a series of policy conclusions and recommendations, presented in Section 7. The report has eight annexes. Annex A1 contains samples of the farm survey questionnaires. Annex A2 presents the socio-economic profiles of the organic and non-organic farmers on the survey. Annex A3 lists qualitative comments made by farmers on various aspects of this evaluation. Annex A4 includes a summary of the stakeholder interviews and gives details of the interviewees. Annex A5 contains the full results of a number of binary regressions employed to test for ‘increasing returns to adoption’ and information failure. Annex A6 contains a literature review on the wider benefits of organic agriculture. Annex A7 shows the land use of organic sample farms before and after conversion, and Annex A8 shows the development of the land area under organic management in England, Scotland, Wales and Northern Ireland between 1996 and 2001.
2. Rationale for public assistance of organic agriculture

Summary

Proven public-good benefits of organic agriculture provide a sound justification for government support for organic agriculture – always provided that the same benefits cannot be generated more cost-effectively through alternative, more targeted agri-environmental measures.

Perceived health benefits of organically produced food do not provide a justification for public assistance for organic agriculture as these can be viewed as private goods not involving ‘market failure’. Besides, none of the alleged benefits have been proven.

The infant industry character of the UK organic sector suggests that the sector might benefit from ‘increasing returns to adoption’ such that the greater the number of organic farmers the lower the average cost along the entire organic supply chain. There is an argument here for support to be directed both to farmers and to other parties in the supply chain in order to improve the infrastructure needed for effective marketing. There is also an argument for some form of longer-term support in recognition of the fact that an appropriate organic infrastructure takes time to build – more time is needed than to convert an individual farm to organic production.

Information failure provides further justification for corrective action in the form of both publicly funded information provision to address short-term information needs, and investment in R&D to develop the production and conservation potential of organic agriculture over the longer term.

Aligning the overall level of support with that of other Member States would remove an impediment to the development of the organic sector in the UK and may encourage sustained, demand-led growth of the UK supply base.

Organic farming may have a strategic role to play in a country’s food safety policies as a means of reducing consumers’ exposure to risk from technological innovations in agriculture and food production. Although organic farming takes advantage of modern technology, it tends to avoid the use of potentially risky technologies such as genetically modified organisms and growth hormones.
Potentially adverse effects of organic aid on organic food markets should be accepted as a necessary cost of a policy aimed at improving the allocation of rural resource use, but policy should not be insensitive to the needs of those already operating in the industry.

2.1 Introduction

Most of those arguing for further government assistance for organic agriculture do so on the basis that organic farming provides wider benefits beyond the immediate effect on the farmer. Many claims have been made for organically produced foods, based on factors such as food quality and food safety, animal welfare, support for rural communities, fair trade, and benefits for the environment. However, many of these claims are disputed, and not all of the benefits have public-good characteristics. The evidence underlying these claims will be reviewed in Section 3. This section provides a wide-ranging theoretical assessment of the rationale for government support for organic agriculture, beginning with the ‘public goods’ argument and then branching out into other areas of potential ‘market failure’.

2.2 Public-goods market failure

It is widely acknowledged that proven public-good type benefits of organic agriculture provide a sound justification for government support. Public goods are side benefits from certain forms of agricultural production for which farmers receive no remuneration in the marketplace, but which benefit society as a whole. Environmental enhancement is the classic example here. The fact that farmers are unable to charge for these goods means that they are likely to be underprovided relative to socially desirable levels. This is particularly true where there exists a trade-off between provision of public goods and farm income: private agents (farmers) will have little incentive to undertake, on their own accord, management changes that will benefit the wider public but are likely to be detrimental to their own welfare. There is, at least in principle, a role here for government to intervene and provide correction for
the market failure by putting a price on the unpriced side benefits, thereby mimicking the public’s demand for these benefits.

Critics, however, have argued that support for organic farming is a relatively crude means for providing public goods, particularly environmental benefits. Rewarding a particular farming system, defined in terms of an inflexible system of rules, may not be the most effective way of addressing environmental problems that are heterogeneous by nature. It has been argued that policy would make a more positive impact if it identified and rewarded the specific outcomes it seeks through more targeted agri-environmental measures (House of Commons, 2001; Alvensleben, 1998). However, these commentators ignore the trade-off between targeting and administration costs: more targeted policy measures are usually more costly to implement and administer than organic support schemes, and these additional transaction costs may outweigh any potential efficiency gains from targeting. We are not aware of any empirical studies of the administration costs of organic support schemes vis-à-vis alternative agri-environmental schemes, but policy administrators tell us that organic farming schemes are reasonably straightforward to run. Nor are we aware of any comparative studies of the environmental effectiveness of organic farming vis-à-vis alternative measures. On balance, it appears that organic farming may be appropriate when some general environmental enhancement is sought, while more targeted measures should be preferred when pursuing very specific environmental objectives (Dabbert et al., 2000).

A distinct advantage of organic farming is that it is not, by default, reliant on continuing government support. Rather, the assumption is that well managed organic systems will be able to sustain themselves financially after the conversion period. This means that, unlike targeted agri-environmental measures, organic farming will continue to deliver public goods after contracts expire. This is not to say that there is no justification for providing ongoing support to established organic farmers.

It appears that organic farmers are able, to some extent, to charge for the public goods through higher product prices. However, organic price premiums are unlikely to reflect consumers’ full willingness-to-pay for public goods, as there will always be an incentive for an individual to ‘free ride’ on the contributions of other consumers. This means that even a well functioning organic food market will tend to underprovide public goods relative to socially efficient levels. This market failure justifies
government support for organic farmers as a means of encouraging the provision of public environmental benefits in sufficient quantities.

We would like to emphasise that perceived health benefits of organically produced food do not automatically provide a justification for public assistance of organic agriculture. This is because perceived health benefits are a private good in as much as they accrue in their entirety to the person who buys and consumes organic food products. There are no spill-over effects for other consumers as is the case with environmental benefits. One would therefore expect consumers to be prepared to pay fully for any perceived health benefits attached to organic food. Besides, none of the alleged benefits have been proven.

2.3 Infant industry arguments

2.3.1 Lack of critical mass and ‘organic infrastructure’

Organic agriculture as a sector faces high initial set-up costs in terms of developing an appropriate infrastructure for the provision of information and advice and the marketing of its products. There is clearly a ‘chicken-and-egg’ argument here: organic production is only feasible and financially attractive once there is an established infrastructure, but an infrastructure will only develop once there is a reliable supply (Latacz-Lohmann and Foster, 1997). Lack of critical mass of organic producers means high per-unit marketing costs and/or high risk through having to sell organic produce through conventional marketing channels. Low throughput through dedicated organic supply chains means high per-unit costs for wholesalers, processors and retailers. This makes organic food expensive for the consumer, resulting in low levels of demand, and creates a permanent temptation for actors along the supply chain to abandon organic initiatives.

The lack of processing and marketing infrastructure within the organic sector is indeed considered a major obstacle to the further development of organic farming (Michelsen et al., 2001). This is a particular problem in certain geographical areas, where producers are too remote from suitable processors, and for certain products. Notably, the organic livestock sector has experienced significant problems in finding abattoirs willing to process organic stock (Rigby et. al., 2001). The problem has been
exacerbated by the closure of many small abattoirs in the wake of the Foot and Mouth epidemic of 2001.

Clearly, the average cost associated with such infrastructure investments falls with the number of farmers adopting organic practices. This gives rise to what economists call ‘increasing returns to adoption’: that is, the greater the number of organic producers, the lower the average cost and the higher the profitability of organic food initiatives at all points along the supply chain. Such a development would stimulate demand, and the resulting price increase would combine with falling average costs to create strong incentives for new producers to enter the organic industry. In this way, ‘increasing returns to adoption’ can set in motion a spiral of cost-reducing expansions of the organic supply base.

There is a potential role for policy in trying to spark off such a spiral. There is an argument here for support to be directed both to farmers (in order to create a critical mass of organic producers to sustain organic supply chains) and to other actors along the supply chain (to create the technical and logistical infrastructure needed for effective marketing of organic food). More importantly perhaps, there is an argument for some form of medium-term support in recognition of the fact that an appropriate organic infrastructure takes time to build – more time than is needed to convert an individual farm to organic production. Hence it may not be sufficient to support farms through their individual conversion periods (of two to five years), further support may be required throughout a sectoral conversion period – the period needed for enough farmers to convert to bring about the critical-mass effects that give rise to ‘increasing returns’.

Marketing is only one area in which critical-mass effects may be a decisive factor in the profitability of organic farming and organic supply chains. Other sources of ‘increasing returns to adoption’ are network and coordination effects resulting from improved exchange of information between organic farmers (through informal networks), technological interrelatedness of production (e.g. reduced spray drift from conventional fields, reduced risk of cross-pollination with GM crops) and scale economies in the supply industry (Latacz-Lohmann et al., 2001). Several studies have highlighted the importance of organic farmer networks. Informal networks of organic producers are considered to be valuable and trusted sources of information by farmers who are either undergoing conversion or considering doing so (Rigby et al., 2001;
Padel, 2001). It has been reported that farmers are more inclined to convert if they receive most of their information about organic farming from other farmers rather than from the press, retailers or the Agricultural Development and Advisory Service (Rigby et. al., 2001). Geographical isolation is an impediment to the networking process and has been identified as a problem that requires addressing (Rigby et. al., 2001).

On the other hand, there are two strong arguments that question the concept of increasing returns. First, it is conceivable that organic farmers benefit from pest and weed management on adjacent conventional farms; this beneficial externality will diminish as organic farming comes to cover larger areas. Second, increasing returns on the cost side may be neutralised by declining prices as more and more farmers compete for a share in the organic market, potentially leading to falling profitability in organic farming. However, declining prices should not automatically be considered undesirable: lower prices would benefit consumers and stimulate demand which, in turn, would help the organic sector to expand. From the point of view of economic efficiency, emphasis should thus be given to increasing returns on the cost side and policy should try to stimulate this.

On balance, these arguments reinforce the policy conclusions cited above – with the qualification that there may be a case for spatial targeting of limited funds into some sort of organic priority areas. Such a strategy would aim at enticing a disproportionately high number of producers into organic agriculture in certain regions as a means of maximising regional network and coordination effects. We will revisit this issue several times throughout the report.

2.3.2 Information failure

Lack of information is a notorious problem in infant industries. There is no universally accepted definition of ‘information failure’. At face value, the term seems to suggest that lack of information prevents producers from switching to a potentially superior technology. However, another interpretation of the term is that individual farmers have little incentive to generate information about new technologies by, for example, running their own field trials, as indeed many of the pioneers of organic farming had done. The reason for this is not necessarily the inability to enforce private
property rights over the knowledge generated; rather, the lack of incentives to innovate stems from the lack of profitability of organic farming resulting from the low numbers of organic farmers – see the ‘increasing returns to adoption’ argument above. Yet another interpretation of information failure centres on the role of public policy: government has failed to direct sufficient resources into research for organic agriculture that might gradually develop a stock of knowledge and information comparable to that for conventional agriculture. This has a perfectly plausible explanation in the ‘induced innovation hypothesis’ which states that innovation effort is proportional to the relative importance of the technology in the market – the critical mass argument from the perspective of government. This leads on to yet another, even stronger, interpretation of ‘information failure’: had organic agriculture received as much attention in the form of research, education and extension over the past 50 years as conventional agriculture has, it might today be the more profitable farming system.

All of the above interpretations involve some form of argument based on market or government failure and thus provide, in principle, a rationale for corrective action. This should take the form of publicly funded information provision – along the lines of the proven OCIS help-line, but potentially going beyond it – to satisfy the short-term information needs of organic farmers and those interested in converting, alongside investment in R&D to develop the productive (and conservational) potential of organic agriculture over the longer term.

2.3.3 Path dependence and technological lock-in

The arguments presented so far form the individual building blocks of the contention that agricultural technologies may be path-dependent and that conventional agriculture may be technologically locked-in at the expense of competing, potentially superior, farming systems – including organic agriculture. In a nutshell, the path dependence argument goes as follows: Once one among several competing technologies has been chosen by a sufficiently large number of producers, increasing returns to adoption will set in, implying that any further adoptions will make that technology even more profitable for existing users and new entrants. In this way the technology becomes entrenched over time, and the costs of switching to competing technologies (i.e. the costs of leaving the entrenched path) increases. This results in
lock-in, since users of the entrenched technology continue to enjoy increasing returns from each new user adopting a networked technology. The process is reinforced by R&D efforts, which tend to be directed to the dominant technology – at the expense of, in this case, competing farming systems. However, had the same number of initial producers adopted one of the competing technologies – say, organic agriculture – increasing returns might have made that technology the dominant one. That is to say, if technologies benefit from increasing returns to adoption, there are multiple possible equilibrium outcomes, and we cannot predict ex ante which technology will eventually become the dominant one. More importantly, neither can we take for granted that the dominant technology will necessarily be the optimal one. This has been interpreted by emulators of the path-dependence concept as an instance of market failure: decentralised, individual decision-making does not necessarily lead to the best technology being adopted.

A competing but superior technology would only generate similar returns after considerable numbers of users had switched to that technology. Moreover, because increasing returns are dependent on network and coordination effects, the difficulty of coordinating the switch to the superior technology means that it would always be more rational for the individual user to retain the inferior technology, unless that individual knew that (many) others were shifting at the same time.

The arguments presented above suggest that organic agriculture displays many of the technological features that can give rise to increasing returns – such as networking, coordination and critical-mass effects – implying that a massive switch to organic agriculture would enhance its relative profitability. There is also some evidence that organic agriculture yields ‘increasing environmental returns to adoption’, meaning that the environmental benefits of organic agriculture increase more than proportionately with the density of land under organic management. This is generally attributed to the creation of environmental networks providing wide-ranging habitat for wildlife (Firbank, 2002).

Technological ‘lock-in’ of ‘inferior’ technologies can, at least in principle, justify government intervention. Before taking action to break the dominance of a locked-in technology, however, policy makers will want to be assured that the locked-in technology is indeed inferior to the alternative under consideration. This will require
careful assessment of the relative merits of the alternative technologies if adopted in numbers sufficient to generate ‘increasing returns’.

It is widely recognised in the literature on technology adoption that breaking the dominance of a locked-in technology requires a concerted policy effort. In the case of agricultural production systems, this could involve a combination of both conversion and maintenance support for organic farmers, substantial investment in the development of an organic marketing and information infrastructure, concerted R&D efforts for the organic sector, and similar measures.

2.4 International competitiveness of the organic sector

It has been argued that, since organic aid schemes in other Member States of the EU are more generous and include ongoing support for established organic producers, UK farmers are disadvantaged in terms of the cost of production and hence their ability to compete for market shares in an increasingly international market (House of Commons, 2001).

There have been frequent complaints from organic farmers in the UK about ‘cheap imports’ of organic food products, and the fact that roughly 70% of organic food sold in this country is imported is often attributed to disparities in funding between EU Member States. On the one hand, this may be regarded as distorting competitiveness and trade flows; on the other, disparate levels of support may be viewed as reflecting differences in the intensity of preferences for the public-good benefits of organic agriculture. The first argument calls for a harmonisation of organic support policies across the EU – and potentially beyond; the second suggests that disparate levels of support are economically efficient and that the resulting trade effect should be accepted as a necessary cost of this policy.

These theoretical considerations are not particularly useful for informing practical policy. On a more practical note, one might argue that if the UK wishes its organic sector to expand because of the public goods it delivers, then higher levels of support in other Member States are an impediment to this. Foreign producers who receive higher conversion payments and ongoing support will have a cost advantage over UK producers which will be better placed to win contracts with UK retailers or processors. This will impede the development of the UK supply base, resulting in the
organic farming sector in the UK finding itself unable to reap the full potential benefits from ‘increasing returns to adoption’. This will put UK producers at an even greater disadvantage in relation to foreign competitors, and in this way a downward spiral may be set in train which might eventually, in the extreme case, displace UK producers from the supply chain.

This process may be broken, or indeed prevented, by offering domestic producers support commensurate to that in other Member States. The (potentially frustrating) implication of this policy is that organic farmers will not receive the full benefit from the higher payments; rather, the payments create leeway for producers to lower their prices in competing for market shares with foreign producers, meaning that a part of the gains from increased support will be passed on to processors and retailers and, ultimately, to consumers. Lower consumer prices, however, stimulate demand which in turn invokes a supply response.

In conclusion, it appears that offering organic support commensurate to that in other Member States would remove a major impediment to the development of the organic sector in the UK and might encourage sustained, demand-led growth of the UK supply base.

2.5 Risk reduction

It has been argued that society's exposure to risk from technological innovations in agriculture and the food sector has increased over time, especially since technological innovations now take less and less time from their introduction to their widespread application in agriculture and food production. It has also been contended that a society which creates the conditions for a thriving organic sector with a proven food safety and sustainability record is less exposed to risk from technological innovations (Isermeyer et al., 2001). Although organic farming takes advantage of modern technology, it tends to avoid the use of potentially risky technologies such as genetically modified organisms and growth hormones. Organic food production may thus have a role to play as a strategic element in a country’s food safety policy. The critical questions here are how widespread organic agriculture would need to become and how great the minimum share of organic food would need to be for organic
production to provide a realistic and viable alternative to conventional agriculture. There may be a case for policy to set targets in these areas (Isermeyer et al., 2001).

2.6 The case against public assistance for organic agriculture

One might argue that there is a perfectly reasonable case against any aid for organic agriculture. After all, if the market really is expanding, if retailers are anxious to provide more organic products, and if organic produce commands a premium, why should the state intervene? (House of Commons, 2001). The pioneers of organic agriculture converted without public assistance in an adverse environment, and the early development of the organic sector was entirely market-driven (Latacz-Lohmann and Foster, 1997).

Critics have pointed to potential downsides of public assistance, arguing that support could lead to a distortion in the market and falling producer prices, and might thus be harmful to those already operating in the industry. There is also evidence that, in prevailing economic conditions, organic aid attracts farmers who will not be able to follow through the conversion of their land to organic production and who are motivated by a hope of finding a way out of existing problems rather than by a thoroughly thought through vision of sustainable organic production (House of Commons, 2001). There are also fears that the growth in organic supply stimulated by conversion grants is leading to a loss of traditional values and principles within the industry as larger and more commercially-oriented farmers and the supermarkets become ever more dominant in the market (House of Commons, 2001).

However, these concerns should be seen in the light of the arguments of market failure arising from public goods and the infant-industry character of the UK organic sector. The yawning gap between UK demand and UK supply, even in products capable of being produced in the UK (and currently covered by imports), indicates clearly that the organic sector has not been capable of adequately addressing the market opportunities that exist – it is simply too small to meet the level of demand (House of Commons, 2001). Also, as we have shown above, an organic sector left to its own devices would remain too small relative to its efficient size when public goods are properly accounted for.
Hence, the concerns expressed over the adverse effects of public assistance should be accepted as a necessary cost of a policy aiming at improving the allocation of rural resource use. This is not to say that policy should not be sensitive to the needs of those already operating in the industry: any policy-induced fall in producer prices which is not accompanied by an equivalent reduction in production costs will reduce the profitability of organic farming for both existing producers and new entrants, and thus trigger a need for higher levels of support. Policy should therefore take a cautious approach, limiting the scale and level of support to what organic food markets can tolerate.
3. Evidence underpinning the rationale

Summary

There is acknowledgement in the literature that organic farming offers a range of environmental benefits over conventional agriculture. Organic farming practices have characteristics that are beneficial to the diversity of fauna and flora in terms of provision of habitat and abundance of food. Farmland birds appear to be among the main beneficiaries of organic agriculture. Organic farming provides some potential for positive impacts on landscape.

While inappropriate organic management practices (such as ploughing of leys and legumes) could bear some potential risk of polluting ground and surface water, the negative effects from organic farming tend to be generally lower than those of conventional farming systems. However, with increasing implementation of water protection measures in conventional farming, these differences are becoming smaller.

Organic farming can have a positive impact on soil fertility through higher total contents of soil organic matter and higher biological activity. The evidence on soil erosion is mixed. Frequent soil disturbances by mechanical tillage, wider row distances in cereals, slower juvenile development of the crops, and premature breakdown of crops have been identified as potentially increasing the risk of soil erosion in organic systems. Other research results suggest that in total, these factors seem to contribute less to the erosion potential than the soil conserving factors.

Other areas in which organic agriculture is claimed to produce benefits to the public include animal health and welfare and food quality and safety. Not all of these are supported in the literature.

Our quantitative analysis shows that the environment in which early adopters converted their farms differed from that for late adopters – with respect to variables relating to ‘increasing returns’. While this should not be interpreted as evidence of ‘increasing returns’, it does show that certain variables that can give rise to increasing returns have changed over time, lending support to the theoretical points considered in Section 2.
We found no evidence of ‘information failure’: farmers do not consider access to information and advice a major obstacle to conversion and are generally satisfied with the quality of the information available. We found no evidence in the data that lack of information affects the decision to convert or revert.

3.1 Introduction

Having reviewed the rationale for public assistance for organic farming from a theoretical perspective, we next consider the evidence underpinning this rationale. We begin by reviewing the evidence underlying claims that organic farming provides a wide range of public-good benefits. This is based mainly on a review of the relevant literature, but also draws on the interviews with experts from the Centre for Ecology and Hydrology. This is followed by an empirical assessment of critical mass effects and information failure based on our own data sets.

3.2 Evidence for the wider public benefits of organic agriculture

There is a substantial literature on the wider public benefits of organic farming. This was reviewed in the first interim report. Here we provide only a summary of the main findings. A full dossier of the evidence, including a full list of references, is reproduced in Annex A6.

Biodiversity

There near unanimity in the literature that organic farming offers a wide range of environmental benefits over conventional agriculture. Numerous studies have been undertaken to compare the differences in biodiversity between organic and conventional farming systems. At least 23 such studies have been carried out in Europe since 1987 (Soil Association, 2000). In most studies, adjacent or proximate organic and conventional fields were paired for comparison. Evidence from these studies provides support for the generally held view that organic farming supports greater levels of wildlife, in terms of both quantity and variety. Organic farming practices have characteristics that are beneficial to the diversity of fauna and flora as
regards provision of habitat and abundance of food. The abundance and diversity of species found in organic systems, specifically the higher levels of endangered or declining species, suggest that by converting more land to organic management their decline may be to some extent arrested. Furthermore, rare species, including some that appear in the Biodiversity Action Plan, are found more commonly on organically farmed land. This does not necessarily mean that other conventional environmentally sensitive farming practices cannot also benefit wildlife; indeed, certain other farming practices have been found to have positive impacts. Many studies point out that the diversity of floral species is closely connected to local site conditions. In regions with a high potential for biodiversity, organic farming promotes numerous and highly varied flora. However, in regions with low potential for biodiversity, the positive impact of organic farming on wild herb or grassland diversity is less marked (Smeding, 1992).

**Landscape**

Typical features of organic farms include smaller fields and diverse crop rotations as well as the active planting of hedges and the creation of habitats, thus supporting the shaping of the landscape (van Elsen, 1997). In a study commissioned by the Countryside Commission comparing the landscape impact of lowland organic and conventional farming, organic farms were found to have a more traditional landscape with more large, bushy hedges, recently established trees, woodland, and smaller fields (Entec, 1995). In the more extensively farmed upland regions and on small horticulture farms no visible differences between the farming systems were observed (Entec, 1995). According to Langer (1997), the effects of organic farming on the landscape depend on the type of production system adopted under organic management, the extent of conversion, the spatial aggregation of converting farms, and the farm type dominating the local landscape before conversion. On the whole, it appears that organic farming provides some potential for positive impacts on landscape, e.g. perspectives for further development of high-quality landscapes, the possibility of cautious utilisation of sensitive areas, and ways of re-qualifying the identity of rural areas (Stolze et al., 2000).
Soil conservation

Organic farming has a positive impact on soil fertility. According to Stolze et al. (2000), who looked at 20 comparison trials and on-farm investigations, organically managed soils usually have higher total contents of soil organic matter and significantly higher biological activity than those farmed conventionally. This is attributed to organic fertilising management systems which are based on crop rotations with clover/grass ley, underseeds, catch crops, and green and animal manure (Stolze et al., 2000). Research reviewed by Stolze et al. (2000) showed no significant differences in soil structure between the farming systems.

The evidence on soil erosion is mixed. A number of studies link the potential of organic farming to control soil erosion to diverse crop rotations with a high percentage of fodder legumes, and to the high percentage of intercrops and underseeds, which aim at year-round soil cover. This potential is enhanced by the use of fewer row crops like sugar beet or maize and by better soil stability as a result of a sustained supply of organic manure (Stolze et al., 2000). On the other hand, frequent soil disturbances by mechanical tillage, wider row distances in cereals, slower juvenile development of crops, and the premature breakdown of crops due to disease have been identified as potentially increasing the risk of soil erosion in organic systems (O’Riordan and Cobb, 2001; Stolze et al., 2000). Other research results suggest that, in total, these factors contributing to the erosion potential are outweighed by the soil-conserving factors.

Water pollution

Based on an extensive review of the relevant European literature, Stolze et al. (2000) concluded that organic farming results in lower or similar nitrate leaching rates than integrated or conventional agriculture when evaluated on a per-hectare basis. In recognition of this, Wessex Water offer a subsidy of £40 per hectare per year for two years to farmers willing to convert to organic farming in areas where nitrate levels are rising (House of Commons, 2001). The scheme was launched in autumn 2000 in conjunction with the Soil Association, which provided the conservation management plan, and Elm Farm. However, the scheme has not been taken up by the farmers. Wessex Water attribute this to the low payment rate offered and to the fact that the
scheme is targeted on mainly arable areas where conversion to organic farming is less attractive.

Increasing implementation of water protection measures in conventional farming means that the differences in nitrate leaching between conventional and organic farming are becoming less marked. It is also noteworthy that, when related to production units (tonnes of crop or milk), nitrate leaching rates are similar or higher in organic than in conventional farming (Stolze et al., 2000). The potential risk of polluting ground and surface water is mainly connected with inappropriate organic management practices such as ploughing up grass leys and legumes at the wrong time.

Since the use of synthetic pesticides is completely banned, organic farming does not pose any risk of ground and surface water pollution from synthetic pesticides (Stolze et al., 2000, Köpke and Haas, 1997). This makes organic farming the preferred agricultural system for water reclamation areas.

**Climate and air quality**

Most studies indicate lower CO₂ and NH₃ emissions resulting from organic farming when evaluated on a per-hectare basis, but research results vary when related to the output, often being higher than in conventional systems (Stolze et al., 2000).

**Food quality and safety**

Countless scientific studies have been conducted aimed at establishing differences between organic and non-organic food as regards pesticide residues, desirable and non-desirable substances, taste, etc. Recently, several attempts have been made to provide a critical evaluation of the existing research in terms of methodology and validity. Alföldi et al. (2001) analysed 33 studies published between 1993 and 1998. They concluded that while a number of authors found organic food to be superior to conventionally produced food in some areas, a significant number found no differences between food produced organically or conventionally, and only very few reported unfavourable results for organic food. However, most of the studies did not withstand scientific scrutiny in terms of research methods and technology. A major Dutch study (Mansvelt, 2001) investigating the effects of organic food on health, looked at a total of 2000 publications. The numerous experts involved found the
evidence presented to be inconclusive, were again very critical of the methodologies, and suggested a need for extensive and systematic further research.

*Animal health and welfare*

Evidence for the impact of organic farming methods on animal welfare is inconclusive. Concern has been raised that organic livestock production systems are not welfare-friendly owing to the restrictions placed on the use of drugs; Roderick et al. (1996) note that the prohibition against the routine use of anthelmintics and dry-cow therapy were issues of concern. However, the use of prophylactic drugs is permitted where a disease problem cannot be treated by other means. A survey of organic livestock farmers, conducted by Roderick et al., found that respondents did not perceive animal health and welfare issues to be a significant problem. The Veterinary Epidemiology and Economics Research Unit (VEERU) of the University of Reading has coordinated research undertaken by members of the Network for Animal Health and Welfare in Organic Agriculture (NAHWOA): VEERU concluded that the animal-health status within organic systems is similar and occasionally better than that on conventional farms (House of Commons, 2000). Health status depends greatly on specific farm conditions and management practices, and these seem to be unrelated to the different farming systems (Stolze et al., 2000).

*Other benefits*

Other areas in which organic agriculture is claimed to produce benefits to the public include contributions to rural employment and in meeting supply-control objectives. These will be analysed in Section 4 based on the data from the farm survey.

**3.3 Evidence for ‘increasing returns to adoption’**

We argued in Section 2 that organic agriculture as a networked and knowledge-intensive industry is likely to benefit from ‘increasing returns to adoption’ such that the greater the number of farmers the greater the return to all farmers. We attributed this to:
• declining average costs associated with infrastructure investments for the marketing of organic products and the provision of information and advice;

• coordination and network effects arising from improved exchange of information between organic farmers, technological interrelatedness of production, and improved co-ordination with upstream and downstream industries;

• learning effects, such that information increasingly becomes a public good, resulting in reduced costs of information gathering.

• We further argued that the presence of ‘increasing returns’ provides a justification, in principle, for some longer-term support for organic farmers – that is, beyond an individual farm’s conversion period.

We tested for the presence of ‘increasing returns’ in organic agriculture by interviewing a sample of 202 farmers who had converted their farms between 1932 and 2000. This data set was compiled as part of an independent survey carried out by the research team at the beginning of 2001. We developed a set of indicators for ‘increasing returns to adoption’, including access to information, information sources, membership of a marketing cooperative, neighbours’ attitudes towards organic farming, and other factors. We would expect some relationship to exist between these variables and the year of conversion. For example, we would expect that access to information has become easier over time, that the importance of informal networks of organic farmers increases, and that more farmers now have better access to dedicated organic marketing channels and become member of marketing co-operatives.

We split the sample into two groups – “early adopters” (who converted before 1992) and “late adopters” (who converted in 1992 and after) – and conducted a logit analysis of the data to ascertain which variables determine the likelihood of a farmer being an early adopter or a late adopter. The expectation here was that at least some of the variables relating to ‘increasing returns to adoption’ have an influence on this likelihood. The full results of this analysis and an explanation of how these variables were measured are given in Annex A5-1. The principal findings from this modelling exercise are as follows.
Factors increasing the likelihood of a farmer being a “late adopter” (with ‘increasing returns’ indicators highlighted in italics):

(All the explanatory variables are significantly different from zero at either the five or ten percent level).

- availability of marketing channels at the time of conversion
- participation in the Organic Aid Scheme or Organic Farming Scheme
- profit as an important motive for going organic
- type of farm “mainly livestock”
- ADAS as an important source of information in the run-up to conversion.

Factors increasing the likelihood of a farmer being an “early adopter” (‘increasing returns’ indicators highlighted in italics):

- poor access to information
- non-organic neighbours with hostile attitudes to organic agriculture
- more years in farming at the time of the decision to convert
- environmental benefits as an important motive for going organic
- higher level of education
- “converted without information”
- membership of a marketing cooperative.

The analysis shows that some of the variables that we have previously identified as being related to ‘increasing returns to adoption’ are of statistical significance in dividing the sample into early and late adopters. All of these variables except one have the expected sign (+ or –). Membership in a marketing cooperative, however, appears to be more related to early than to late adopters. This seems surprising, as one would expect the network of marketing cooperatives to have become better developed as the organic sector has grown in size. A possible explanation is that farmers now have a greater choice of marketing channels and so are less reliant on marketing cooperatives.
Perhaps of particular note is the effect of different motivations on the likelihood of an organic farmer being an early or a late adopter. Those producers who entered with a profit perspective are more likely to be later adopters, while producers who converted their farms mainly for environmental reasons are more likely to be among the early adopters. It is also noteworthy that farms classified as “mainly livestock” are largely associated with the group of late adopters, perhaps reflecting the imbalance between livestock and arable farmers in the membership portfolio of the OAS/OFS.

Interestingly, it is mainly the livestock farmers who stated that their financial position was weak at time of conversion: 44% of the livestock farmers on the survey made this statement, compared to 28% of the mainly arable farmers and 31% of mixed-farm operators.

The results from this modelling exercise should be interpreted with some caution. We do not claim to have shown that the correlation between ‘increasing returns’ indicators and early/late adoptions has a causal interpretation: for this we would have needed a more formal model. What we have shown is that early and late adopters differ in their judgement of the circumstances pertaining at the time of their conversion, and that some of these circumstantial variables relate to ‘increasing returns to adoption’. One might argue that since there was much less information about organic farming in the early years, it is bound to be the case that ‘poor access to information’ and ‘converted without information’ are positively correlated with ‘early adoption’. This is a statistical fact rather than evidence of a causal relationship.

However, a statistical fact is a finding in itself: it shows that the environment in which early adopters converted their farms did indeed differ from that for late adopters – with respect to variables relating to ‘increasing returns’. While this should not be interpreted as evidence of ‘increasing returns’, it does show that certain variables that can give rise to increasing returns have changed over time, lending support to the theoretical points considered in Section 2.3.
3.4 Information failure: evidence from the farm survey

We undertook three distinct pieces of analysis to test for the presence of information failure. First, we asked farmers on the survey a number of specific questions relating to various aspects of information and advice. Second, we carried out a logistical regression analysis of the farm survey data to determine whether variables relating to information have a significant impact on farmers' willingness to convert. Third, we conducted a similar analysis of the Scheme participants' sub-sample to ascertain whether variables relating to information have a significant impact on organic farmers' likelihood of reverting to conventional agriculture. We report our findings from each analysis in turn.

3.4.1 Analysis of specific questions relating to information

Farmers’ wider concerns

We began the analysis of information failure on a somewhat broader note, trying to gauge the wider concerns that farmers have in relation to conversion to organic production. We asked conventional farmers to rank arguments against conversion of their farms, and organic farmers to indicate the relative importance of a number of concerns they might have had at the time they decided to convert. We also asked them how important they consider these concerns were now – with the benefit of a few years of organic farming experience. The results are shown in Table 3.1.

Interestingly, neither group of farmers considered access to information and advice a serious concern – with an average Likert score in the middle of the range. Organic farmers are mainly concerned about the amount of paperwork involved, the costs of certification, inspection and membership of certification body, and the difficulty of obtaining organic inputs at reasonable prices. Conventional farmers are deterred by a perceived lack of profitability and increased risk, but not by lack of information.
### Table 3.1: General concerns and arguments against conversion*

<table>
<thead>
<tr>
<th>Concern/Argument</th>
<th>Average Likert score$^1$ for organic farmers before conversion</th>
<th>Average Likert score$^1$ for organic farmers now</th>
<th>Average Likert score$^1$ for non-organic farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower profits</td>
<td>3.0</td>
<td>3.3</td>
<td>4.3 (1)</td>
</tr>
<tr>
<td>Increased risk</td>
<td>3.4 (3)</td>
<td>3.0</td>
<td>4.2 (2)</td>
</tr>
<tr>
<td>Complexity of organic production</td>
<td>3.4 (3)</td>
<td>2.7</td>
<td>3.5</td>
</tr>
<tr>
<td>Unsuitable buildings/machinery</td>
<td>2.3</td>
<td>1.9</td>
<td>2.2</td>
</tr>
<tr>
<td>Finding markets</td>
<td>3.2</td>
<td>3.4 (3)</td>
<td>4.0 (3)</td>
</tr>
<tr>
<td>Lack of consumer demand</td>
<td>2.9</td>
<td></td>
<td>3.8</td>
</tr>
<tr>
<td>Obtaining organic inputs at reasonable prices</td>
<td>3.6 (2)</td>
<td>3.4 (3)</td>
<td>4.0 (3)</td>
</tr>
<tr>
<td><strong>Access to information and advice</strong></td>
<td><strong>2.9</strong></td>
<td><strong>2.4</strong></td>
<td><strong>2.8</strong></td>
</tr>
<tr>
<td>Availability of labour</td>
<td>2.1</td>
<td>2.1</td>
<td>3.6</td>
</tr>
<tr>
<td>Neighbours' reactions</td>
<td>1.5</td>
<td>1.3</td>
<td>1.6</td>
</tr>
<tr>
<td>Reduced freedom through inspections</td>
<td>2.9</td>
<td>2.9</td>
<td>3.1</td>
</tr>
<tr>
<td>More paperwork</td>
<td>3.8 (1)</td>
<td>3.9 (1)</td>
<td>3.8</td>
</tr>
<tr>
<td>Increased dependence on state subsidies</td>
<td>2.6</td>
<td>2.7</td>
<td>3.6</td>
</tr>
<tr>
<td>Cost of registration, inspection and membership of certification body</td>
<td>3.4 (3)</td>
<td>3.6 (2)</td>
<td>3.3</td>
</tr>
<tr>
<td>Farm too intensive/specialised</td>
<td></td>
<td></td>
<td>3.2</td>
</tr>
</tbody>
</table>

*Questions asked: Organic farmers: When you decided to convert, were there any particular aspects that concerned you? How concerned are you about these issues now?  
Non-organic farmers: Which of the following are valid arguments against conversion of your farm?  
$^1$ 1 = not important; 5 = very important. Ranking in brackets.
Knowledge of organic agriculture in the wider farming community

As the next step, we assessed conventional farmers’ knowledge of organic agriculture with a view to detecting misconceptions and misinformation within the wider farming community. We presented farmers with a list of statements and asked them to indicate which of these were correct and which were false. The results are shown in Table 3.2. The correct answers are highlighted in bold in the table.

The results indicate that, on balance, farmers in general are reasonably well informed about organic agriculture, although significant gaps in knowledge remain in some areas. It appears that farmers tend to overestimate yield penalties and underestimate the profitability of organic production – areas to which non-organic farmers attach much importance in any decision whether or not to convert (see Table 3.1).

We then asked both groups of farmers whether they themselves thought that their knowledge of organic agriculture was sufficient to make a well-informed decision about conversion. 47% of the non-organic farmers assessed their knowledge to be sufficient, 38% felt that their knowledge was insufficient, and the remaining 15% couldn't tell. These percentages seem to match up with the results presented in Table 3.2. A higher proportion of organic farmers (72%) felt that, at the time they decided to convert, their knowledge had been sufficient. Only 19% thought their knowledge had been insufficient, and 9% did not know.
Table 3.2: Conventional farmers' knowledge of organic agriculture
(bold = correct answer)

<table>
<thead>
<tr>
<th>Statement</th>
<th>Percentage of conventional farmers who ticked:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>‘sounds correct’</td>
</tr>
<tr>
<td>Livestock on organic farms must be fed from feeds produced on the same farm</td>
<td>13%</td>
</tr>
<tr>
<td>The use of antibiotics is not permitted in organic livestock production</td>
<td>37%</td>
</tr>
<tr>
<td>Mineral feeds may be used in organic livestock production</td>
<td>71%</td>
</tr>
<tr>
<td>Yields in organic arable farming are, on average, more than 50% below those in conventional agriculture</td>
<td>48%</td>
</tr>
<tr>
<td>Organic agriculture and the labelling of organic products are regulated by EU legislation</td>
<td>50%</td>
</tr>
<tr>
<td>Farmers in conversion must become members of an organic producer organisation in order to be eligible for grants from the Organic Farming Scheme</td>
<td>70%</td>
</tr>
<tr>
<td>The average organic farm is far less profitable than a comparable non-organic farm</td>
<td>30%</td>
</tr>
<tr>
<td>The farm-gate price of organically produced milling wheat is about twice the price of conventional milling wheat</td>
<td>61%</td>
</tr>
<tr>
<td>The use of bought-in mineral fertilisers is categorically prohibited</td>
<td>44%</td>
</tr>
<tr>
<td>Organic farmers are inspected at least once a year to see whether they fully comply with the rules of organic farming</td>
<td>70%</td>
</tr>
</tbody>
</table>

*Question:* Organic farming has been a focus of heated discussion in the farming community. Please indicate whether you think these statements are correct or wrong.
Sources of information and advice

Only 19 (11%) of the 180 organic farmers on the survey said that they had converted their farms “without information”. Fifteen of these farmers (8%) said that they still have nobody to turn to for help and advice if they find themselves having husbandry or marketing problems. An even smaller percentage of the non-organic farmers who returned a questionnaire (6%) said that they would not know who to turn to for information and advice if they were faced with the decision of whether to switch to organic agriculture. These figures reinforce the view that access to information and advice is no longer a serious problem for the vast majority of farmers.

We gauged the importance of different information sources by asking organic farmers to score the sources listed in Table 3.3 on a Likert Scale from “1” (“not important”) to “5” (“very important”).

Table 3.3: Sources of information and advice for organic farmers*

<table>
<thead>
<tr>
<th>Information Source</th>
<th>Average Likert score† for organic farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>before conversion</td>
</tr>
<tr>
<td>Other organic farmers</td>
<td>3.6 (1)</td>
</tr>
<tr>
<td>ADAS</td>
<td>1.8</td>
</tr>
<tr>
<td>OCIS help line</td>
<td>2.6</td>
</tr>
<tr>
<td>Elm Farm Research Centre</td>
<td>3.4 (2)</td>
</tr>
<tr>
<td>Soil Association</td>
<td>3.2 (3)</td>
</tr>
<tr>
<td>Private consultant</td>
<td>2.1</td>
</tr>
<tr>
<td>Agricultural press</td>
<td>2.3</td>
</tr>
<tr>
<td>Internet</td>
<td>1.6</td>
</tr>
<tr>
<td>Organised farm walks</td>
<td>3.1</td>
</tr>
<tr>
<td>Training courses</td>
<td>2.0</td>
</tr>
</tbody>
</table>

*Question: How important were each of the following sources of information in helping you decide to convert? If you find yourself having a problem now, who do you turn to for help and advice?

† 1 = not important; 5 = very important. Ranking in brackets.
The results highlight the importance of informal information networks (“other organic farmers”) as a trusted source of information both in the run-up to conversion and during the conversion period. The Soil Association and the Elm Farm Research Centre’s Organic Advisory Service (OAS) come out as the second most important sources of information. Organised farm walks also play an important role in providing pre-conversion information and advice. Surprisingly, DEFRA’s OCIS help-line does not score particularly highly. It is interesting to note that once the conversion process has commenced, private consultants appear to gain significant importance: this may be seen as reflecting the increasing role of specialised information in gaining a competitive edge over other producers.

We then asked non-organic farmers who they would turn to if they were faced with the decision of whether to convert their farms to organic agriculture. Interestingly, “other organic farmers”, “the Soil Association”, and “the OCIS help-line” came out as the preferred sources of information and advice. The full results are shown in Table 3.4.

Table 3.4: Sources of information and advice for non-organic farmers (ranking in brackets)

<table>
<thead>
<tr>
<th>Source</th>
<th>Percentage of respondents who would seek information and advice from</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other organic farmers</td>
<td>43% (1)</td>
</tr>
<tr>
<td>ADAS</td>
<td>18%</td>
</tr>
<tr>
<td>OCIS help line</td>
<td>33% (3)</td>
</tr>
<tr>
<td>Elm Farm Research Centre</td>
<td>11%</td>
</tr>
<tr>
<td>Soil Association</td>
<td>37% (2)</td>
</tr>
<tr>
<td>Private consultant</td>
<td>21%</td>
</tr>
<tr>
<td>Agricultural press</td>
<td>15%</td>
</tr>
<tr>
<td>Internet</td>
<td>17%</td>
</tr>
<tr>
<td>Training course</td>
<td>25%</td>
</tr>
</tbody>
</table>
Accessibility and quality of information

On average, respondents found that access to information was relatively easy. Organic farmers scored “access to information” 2.9 on a scale from 1 to 5, with 1 representing “very easy” and 5 “very difficult”. Non-organic producers were asked how difficult they would find it to obtain relevant information if they were faced with the decision as to whether to convert. Their average score is 2.5 on the same 1 to 5 scale. This reinforces the impression that the provision and general availability of information about organic agriculture is no longer a major problem. Moreover, it shows that conventional farmers are well informed about relevant sources of information on organic agriculture.

The quality of information and advice received by organic farmers was also judged to be reasonably high, with an average score of 2.6 on a 1 to 5 scale (1 = very helpful, 5 = not helpful). However, farmers’ perceptions of the quality of information vary widely: 49% of respondents found the information and advice received ‘helpful’ or ‘very helpful’, 17% found it less helpful, and 34% judged it to be of average quality.

Demand for information

Finally, we questioned both groups of farmers about the areas in which they felt that they would need (or would have needed) more information. The results are given in Table 3.5, shown in terms of the percentage of respondents who ticked the respective items.

The table indicates that the demand for information is relatively evenly spread across all aspects of organic agriculture, with some priority being given to marketing opportunities, profitability, organic farming rules and regulations, and inspection and certification.
Table 3.5: Areas in which farmers feel they needed more information (ranking in brackets) *

<table>
<thead>
<tr>
<th>Areas</th>
<th>Percentage of respondents who would like more information about</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>organic farmers before conversion (n = 180)</td>
</tr>
<tr>
<td></td>
<td>non-organic farmers (n = 126)</td>
</tr>
<tr>
<td>Financial consequences of conversion</td>
<td>17% (4)</td>
</tr>
<tr>
<td>Marketing opportunities for organic products</td>
<td>24% (1)</td>
</tr>
<tr>
<td>Prices of organic products</td>
<td>16%</td>
</tr>
<tr>
<td>Organic arable production systems</td>
<td>12%</td>
</tr>
<tr>
<td>Organic livestock production systems</td>
<td>17% (4)</td>
</tr>
<tr>
<td>Government support schemes</td>
<td>11%</td>
</tr>
<tr>
<td>Rules and regulations governing organic agriculture</td>
<td>22% (2)</td>
</tr>
<tr>
<td>Inspection and certification</td>
<td>19% (3)</td>
</tr>
</tbody>
</table>

*Question asked: In which of the following areas do you feel you would need more information?

3.4.2 Impact of information on farmers’ willingness to convert

We carried out a binary logistical regression analysis of the farm survey data to determine whether variables relating to information have a significant impact on farmers' willingness to convert. We found no such relationship in the data, indicating that information-related variables do not affect conversion and, more significantly, that lack of information does not represent a significant obstacle to conversion.

3.4.3 Impact of information on the likelihood of reversion

We asked organic farmers whether they had ever regretted switching to organic agriculture and whether they were seriously considering returning to conventional agriculture. We used this information to split the sample into two groups: – those who are considering reversion (47 farmers); and those who are not (126 farmers). We then conducted a logit analysis of the data to ascertain which variables determine the
likelihood of a farmer being in one or other of the two groups. If information failure played a role in farmers’ decisions to retain organic practices, it may be expected that variables relating to the availability of information have an explanatory impact in the regression. The full results of this analysis are given in Annex A5-2. The principal findings from this modelling exercise are as follows.

Factors increasing the likelihood of seriously considering reversion to conventional agriculture (with variables relating to information highlighted in *italics*):

- motivation to convert: higher prices
- *low quality of information and advice received during conversion*

Factors reducing the likelihood of seriously considering reversion to conventional agriculture (with variables relating to information highlighted in *italics*):

- hostile attitudes towards organic farming among non-organic neighbours
- motivation to convert: organic farming more environmentally friendly
- *OCIS help-line important source of pre-conversion information*
- high percentage of permanent pasture

All explanatory variables except 'higher percentage of permanent pasture' are significant at either the five or ten percent level.

The analysis shows that the quality and source of information have a significant impact on the likelihood of seriously considering reversion. Farmers who received much of their pre-conversion information through the OCIS help line are less likely to seriously consider reversion. We are reluctant to interpret these findings as demonstrating the presence of ‘information failure’: in our view, the results merely suggest that quality and source of information matter, indicating that certain information sources are better than others – in inducing farmers to stay organic. This does not accord well with the general interpretation of ‘information failure’, namely that lack of appropriate information and advice prevents farmers from switching farming practices. Interestingly, the variable ‘ease of access to information’ has no explanatory impact on the likelihood of reversion.
3.5 Conclusions

There is near unanimity in the literature that organic farming offers a wide range of environmental benefits over conventional agriculture. Organic agriculture performs better on many major agri-environmental indicators when assessed on a per hectare basis. The picture is less clear when environmental impacts are evaluated on a per-unit-of-output basis. The areas in which organic practices may give rise to environmental concerns are nitrate leaching and soil erosion. However, these problems mainly arise in connection with inappropriate management practices, some of which can easily be remedied.

Our analysis shows that certain variables that can give rise to increasing returns have changed over time, lending support to the theory that organic farming might benefit from increasing returns to adoption.

We found no evidence of information failure.
4. Effectiveness of the Organic Farming Scheme

**Summary**

By June 2001, the area of farmland under organic management or in conversion in the UK had increased to nearly 623,200 hectares, an area twelve times as large as in April 1997. Organic and in-conversion land now represents 3.9% of the UK’s total agricultural land area, a figure slightly above the EU average. The closure of the Scheme during 2000 probably had more impact on timing of conversion rather than overall numbers.

Survey results indicate that organic farmers adopt more environmental management practices (beyond those required) than non-organic farmers. Our findings lend some support to the generally held view that farmland birds are among the main beneficiaries of organic farming. Many farmers had managed their land extensively before, implying that the effects attributable to conversion may be smaller than they appear at face value.

On sample farms, conversion has led to a large reduction in the area down to cereals and major increases in the areas of legumes, set-aside and fallow. The reduction in cereal area coupled with lower yields has led to major fall in production. For livestock, the main changes have been a major increase in the beef herd and declines in the numbers of pigs and sheep.

Budgetary savings arise mainly from a reduction in the costs of disposing of surplus cereal production. In terms of direct payments there appears to be relatively little change. As cereal prices come closer to world prices, the budgetary savings associated with organic production are likely to reduce.

During the process of conversion, more than a quarter (28%) of respondents reported that the switch to organic production had resulted in a financial improvement. A somewhat higher proportion of farmers (38%) felt that their financial situation had deteriorated. After completion of the conversion process nearly half of the respondents (48.6%) noticed an improvement while the number of those who felt that their financial situation had deteriorated fell to 18%. 
The survey results demonstrate that organic farming is more labour-intensive and thus contributes to rural employment. In particular, conversion has led to significant increases in casual labour and employed part-time labour.

The quest for profitable marketing outlets has given rise on some organic farms (29%) to the development of a myriad of value-adding initiatives. The survey results suggest that non-organic farmers have generally become more sympathetic to organic agriculture. It is not clear though to what extent this reflects a general trend and to what extent it is attributable to the Organic Farming Scheme.

Sixty-six per cent of respondents felt that the Scheme had provided them with essential support during the conversion support. Forty-two per cent found the support from the scheme useful but not enough. Twenty-six per cent claimed that they would have converted even without the Scheme. In general, respondents were satisfied with the administration of the Scheme.

4.1 Introduction

The farm survey explored the effectiveness of the Organic Farming Scheme in achieving its objectives. We report the findings under the three broad headings: environmental impacts (Section 4.3), supply control (Section 4.4), and income and employment effects (Section 4.6). We refer to these as “direct effects” to distinguish them from knock-on effects (on the same farm) and spill over effects (on other farms), which are the subject of Section 4.7. Based on the results of Section 4.4, we provide estimates of the budgetary implications of conversion to organic farming, in Section 4.5. Finally, in Section 4.8, we report how useful farmers found the Organic Farming Scheme and how satisfied they were with its administration. We begin with a review of take-up rates and some statistics of the development of organic agriculture in the UK (Section 4.2).
4.2 Scheme take-up and development of organic agriculture in the UK

For a long time organic farming in the UK lagged behind the rest of Europe in terms of the number of producers and the share of land under organic management or undergoing conversion. The Organic Aid Scheme, launched in 1994 and operated until 1999, had little impact on this, attracting no more than 400 farmers. In the late 1990s a number of factors combined to change the picture quite dramatically: the launch in 1999 of the much improved Organic Farming Scheme, offering significantly higher payment rates than its predecessor; the launch of the Organic Conversion Information System (OCIS) in 1996, offering free advice to farmers considering conversion; the BSE crisis, which raised wide doubts within the farming community as to whether conventional food production was safe and sustainable; and the general downturn in the UK farming industry in the second half of the decade.

Figure 4.1 traces the development of organic farming in the UK in terms of both the number of organic holdings and the organic and in-conversion land area. By June 2001, the area of farmland under organic management or in conversion had increased to nearly 623,200 hectares, twelve times the figure for April 1997. The rapid expansion of organic agriculture in recent years has meant that the UK organic sector has been able to catch up with the rest of Europe in terms of percentage of organic and in-conversion land; this is shown in Figure 4.2. Organic and in-conversion land now represents 3.9% of the UK’s total agricultural land area, a figure slightly above the EU average.
Figure 4.1: Certified organic and in-conversion holdings and land area in the UK, 1985-2001

Sources: Lampkin (2002); DEFRA (2002)

Figure 4.2: Certified organic and in-conversion land area as percentages of total agricultural area in the UK and the EU, 1985-2001

Sources: Lampkin (2002); DEFRA (2002)
The Organic Farming Scheme opened on 6 April 1999 and closed at the end of November in the same year. It remained closed throughout 2000 and reopened in January 2001. To analyse whether this stop-go approach has had a significant (adverse) impact on the development of organic agriculture, as is often claimed, we calculated the percentage change in organic land area from year to year. This is shown in Figure 4.3.

Figure 4.3: Annual growth rates of certified organic and in-conversion land in the UK

Sources of underlying data: Lampkin (2002); DEFRA (2002)

The graph suggests that the OFS had little impact on the development of the organic land area. The very high growth rates in 1997 and 1998 suggest that other factors, such as BSE and the farming crisis, were the main motivations behind farmers’ decisions to convert. The stop-go approach appears to have had little effect either – growth rates for 1999 (Scheme open) and 2000 (Scheme closed) are very similar. The figure for 2001 (Scheme open) cannot be interpreted for the purposes of this exercise since it represents the growth rate for the first half of the year only.

We finally reviewed the number of applications to the OFS received in each month during the time the Scheme was open (Figure 4.4). The graph shows that applications peaked shortly before the closure of the Scheme in 1999, and then again in the first few months after the Scheme reopened at the beginning of 2001. If one ignores these ‘outliers’, roughly 100 applications were received in an average month before the closure of the Scheme, and approximately 25 after it reopened. Adding up the
applications received in November 1999 (the last month the Scheme was open in 1999) and in the first three months after it reopened, and dividing the sum by the number of months the Scheme was closed (13), we arrive at an average figure of approximately 80 applications a month. This figure lies between the respective averages for 1999 and 2001. This leads us to conclude that the closure of the Scheme did not have a significant adverse effect on the development of organic agriculture: it appears that farmers who would have applied for the Scheme in 2000 did so either in November 1999 or in the first three months of 2001, but on balance the closure of the Scheme did not lead to a fall in the overall number of applications.

One might argue that the above analysis is fundamentally flawed in that it seeks to establish the effectiveness of the Organic Farming Scheme, which applies only to England and Wales, using figures for the UK as a whole. However, very similar schemes have been in operation in Northern Ireland and Scotland, offering identical (Northern Ireland) or very similar (Scotland) payment rates. To check whether our

Sources of underlying data: Lampkin (2002); DEFRA (2002)
approach has introduced a bias, we analysed the development of the organically farmed land area for each of the countries separately. The results, shown in Annex 8, confirm that the development in the four countries has been largely parallel. Again, there is no evidence in the data that the closure of the scheme in England and Wales during 2000 has adversely affected the development of the organic land area relative to the two other countries where funds had been continuously available.

4.3 Environmental impacts

Assessing the environmental impacts of conversion through a questionnaire is a difficult task. Farmers are not environmental experts, but they know their land and the environment of their farms and are well placed to observe changes. They will also be aware of management changes that affect the environment.

Farmland in environmentally designated areas

We asked both groups of farmers, organic and conventional, to indicate whether their farms were located in any designated area of environmental sensitivity. The expectation was that the environmental benefits of conversion would be greater inside such areas, especially within NSAs and NVZs, than outside, although this might not be the case for all designated areas. We found no significant differences between the two groups of farms other than, perhaps, that there is a higher proportion of non-organic farmland located in NSAs and NVZs. This is not surprising, as our sampling strategy was designed to ensure a close geographical match between organic and non-organic farms. The full results are shown in Table 4.1.
Table 4.1: Location of land in environmentally designated areas

<table>
<thead>
<tr>
<th>Area of Outstanding Natural Beauty</th>
<th>Organic farms (n = 180)</th>
<th>Non-organic farms (n = 126)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESA</td>
<td>33 (18%)</td>
<td>30 (24%)</td>
</tr>
<tr>
<td>NSA</td>
<td>25 (14%)</td>
<td>21 (17%)</td>
</tr>
<tr>
<td>NVZ</td>
<td>4 (2%)</td>
<td>5 (4%)</td>
</tr>
<tr>
<td>LFA</td>
<td>6 (3%)</td>
<td>10 (11%)</td>
</tr>
<tr>
<td>SSSI</td>
<td>13 (7%)</td>
<td>13 (8%)</td>
</tr>
<tr>
<td>National Parks</td>
<td>20 (11%)</td>
<td>14 (11%)</td>
</tr>
<tr>
<td>Other</td>
<td>10 (6%)</td>
<td>7 (6%)</td>
</tr>
</tbody>
</table>

Environmental management practices

We found significant differences in the extent to which organic and non-organic farmers apply environmental management practices which go beyond the direct requirements of organic agriculture. Organic farmers performed better on six of the nine practices listed in Table 4.2, particularly on the timing of grass mowing to protect breeding birds. It is not clear though to what extent these would have been implemented anyway or whether they had been applied already prior to conversion. It is important to note, however, that some practices are required as part of the Organic Farming Scheme. Conventional farmers did better on tree planting and, not surprisingly perhaps, nutrient budgeting.
Table 4.2: Environmental management practices on sample farms

<table>
<thead>
<tr>
<th>Environmental practice</th>
<th>Organic farmers</th>
<th>Non-organic farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduced headland management</td>
<td>61 (34%)</td>
<td>32 (25%)</td>
</tr>
<tr>
<td>Restored hedges</td>
<td>110 (61%)</td>
<td>60 (48%)</td>
</tr>
<tr>
<td>Planted more hedges</td>
<td>92 (51%)</td>
<td>42 (33%)</td>
</tr>
<tr>
<td>Improved field boundaries for wildlife</td>
<td>103 (58%)</td>
<td>48 (38%)</td>
</tr>
<tr>
<td>Provided wildlife food or cover</td>
<td>64 (36%)</td>
<td>47 (37%)</td>
</tr>
<tr>
<td>Improved timing of grass mowing</td>
<td>95 (53%)</td>
<td>32 (25%)</td>
</tr>
<tr>
<td>Introduced nutrient budgeting</td>
<td>38 (21%)</td>
<td>31 (25%)</td>
</tr>
<tr>
<td>Improved manure handling and storage</td>
<td>104 (58%)</td>
<td>34 (27%)</td>
</tr>
<tr>
<td>Planted more trees</td>
<td>96 (54%)</td>
<td>74 (59%)</td>
</tr>
</tbody>
</table>

Observed environmental change

Finally, we asked Scheme participants whether they had observed after conversion (or were expecting in the longer term) any of the environmental improvements listed in Table 4.3. Clearly, some of these benefits are easier to observe than others, and this may be reflected in the figures. It must also be borne in mind that the vast majority of producers began conversion between 1998 and 2001, so that many of the longer-term benefits may not as yet have come to fruition. Many farmers who had observed changes were expecting further improvements in the longer term. The table lends some support to the generally held view that farmland birds are among the main beneficiaries of organic farming.
Table 4.3: Environmental improvements observed or expected by organic farmers (number and percentage of farmers reporting)

<table>
<thead>
<tr>
<th>Environmental change</th>
<th>Observed after conversion</th>
<th>Further benefits expected in the longer term</th>
</tr>
</thead>
<tbody>
<tr>
<td>General increase in bird life</td>
<td>94 (52%)</td>
<td>62 (34%)</td>
</tr>
<tr>
<td>More bird species</td>
<td>64 (36%)</td>
<td>66 (37%)</td>
</tr>
<tr>
<td>Increase in flower/plant varieties</td>
<td>68 (38%)</td>
<td>73 (41%)</td>
</tr>
<tr>
<td>More colour in the landscape</td>
<td>53 (29%)</td>
<td>42 (23%)</td>
</tr>
<tr>
<td>General increase in animal life</td>
<td>65 (36%)</td>
<td>55 (31%)</td>
</tr>
<tr>
<td>More insects</td>
<td>76 (42%)</td>
<td>62 (34%)</td>
</tr>
<tr>
<td>Less water pollution</td>
<td>34 (19%)</td>
<td>49 (27%)</td>
</tr>
</tbody>
</table>

A number of farmers remarked that they had managed their land extensively prior to conversion and that the effects attributable to conversion were limited; for example:

“Land farmed very extensively before and always varied and abundant wildlife. Difficult to say if there has been significant increase.”

“Environmental benefits - none anticipated as I didn’t use sprays and only limited fertiliser anyway. Regard to conservation issues has always been high on management priorities.”

Other farmers remarked that more targeted measures had had a greater impact on the environment than their conversion to organic management:

“The increase in wildlife has been a direct result of deliberate management and not organic farming per se. Organic farming followed from wildlife management.”

“Countryside Stewardship has seen a greater increase in wildlife rather than organic farming.”
Others again were quite enthusiastic about the environmental changes they had observed:

“Lapwings nested on farm for first time in 15-20 years!”

4.4 Supply-control effects

Supply-control effects result from a combination of three factors: changes in the production programme (land use and livestock), reduced yields, and reorientation of production towards unsupported markets. We looked at all of these aspects and report the findings in turn.

Methodology

There are two principal ways of assessing the supply-control effects of conversion to organic agriculture. One is to compare yields, production programmes and marketing before conversion and after. This vertical comparison faces the problem of having to contend with a moving counterfactual; that is, if a farm had not converted to organic production, its production programme and, to a lesser extent, yields might have changed over time, for example in response to falling product prices. The principal alternative approach is to compare product mix, yields and marketing on organic and conventional farms at the same point in time (horizontal comparison). This approach is hampered by the problem that there may be systematic differences in the relevant variables between non-organic farms and organic farms as they would have been under conventional management. Several studies have shown that organic farms are mostly ones that, prior to conversion, were less specialised and less intensive. Thus a horizontal comparison would lead to an overestimation of supply control effects. Our estimates are based on the first approach; we found this particularly appropriate for the current study as the majority of organic farmers had converted their farms during the past three years and so still had fresh memories of their last years under conventional management.

Another methodological problem arises from the fact that 40% of respondents converted only parts of their farms. Further analysis revealed that these were mainly farmers who had been growing sugar beet or oilseed rape prior to conversion,
confirming the view that these two crops are largely kept out of organic rotations. If one were to calculate the *output effect of converting land to organic production*, it would be appropriate to leave the data for partial conversions out of the analysis. However, the task here is to assess the *output effect of the Organic Farming Scheme*, and we were of the opinion that these data should not be eliminated; by adopting this approach we are able to take into account the fact that the Scheme also attracts farmers who convert their farms in stages.

*Changes in land use and crop production*

Annex A7 deals with land use on the organic sample farms before and after conversion. The charts confirm the view that the ‘typical’ organic farm had a relatively diverse production programme before conversion, with relatively high proportions of permanent pasture, temporary grassland and some legumes. While the figures in Annex A7 give a good overview of land-use patterns in general, it is difficult to deduce from the figures how land use has changed in response to conversion. Table 4.4 gives an overview of changes in land use, crop yields and crop output that have occurred in the course of conversions.

The table suggests that conversion leads to significant reductions in the area given over to supported commodities, and that this, combined with yield reductions, translates into a marked reduction in the production of these commodities. Land use tends to shift away from winter cereals, sugar beet, oilseed rape and fodder maize towards legumes and fertility-building leys and fallow. There is also a slight increase in the area of temporary grassland and permanent pasture. Interestingly, the area of spring cereals increases by roughly a quarter as crop rotations become more diverse. The production of potatoes suffers significantly, though mainly as a result of severe yield penalties rather than area reductions.
Table 4.4: Land use, crop yields and crop production on sample farms in a typical year before and after conversion to organic management

<table>
<thead>
<tr>
<th></th>
<th>Area before conversion (ha)^3</th>
<th>Area now (ha)^3</th>
<th>% change</th>
<th>Yield before (t/ha)</th>
<th>Yield now (t/ha)</th>
<th>% change</th>
<th>Production before conversion (tonnes)^3</th>
<th>Production now (tonnes)^3</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>All cereals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Winter cereals</td>
<td>7,104</td>
<td>6,009</td>
<td>-15%</td>
<td>6.3</td>
<td>4.1</td>
<td>-35%</td>
<td>44,858</td>
<td>24,712</td>
<td>-45%</td>
</tr>
<tr>
<td>Spring cereals</td>
<td>6,219</td>
<td>4,882</td>
<td>-22%</td>
<td>6.5</td>
<td>4.3</td>
<td>-34%</td>
<td>40,610</td>
<td>20,993</td>
<td>-48%</td>
</tr>
<tr>
<td></td>
<td>885</td>
<td>1,127</td>
<td>+27%</td>
<td>4.8</td>
<td>3.3</td>
<td>-31%</td>
<td>4,248</td>
<td>3,719</td>
<td>-12%</td>
</tr>
<tr>
<td>Potatoes</td>
<td>312</td>
<td>309</td>
<td>-1%</td>
<td>41</td>
<td>25</td>
<td>-39%</td>
<td>12,823</td>
<td>7,725</td>
<td>-40%</td>
</tr>
<tr>
<td>Oilseed rape</td>
<td>988</td>
<td>762</td>
<td>-23%</td>
<td>3.2</td>
<td>3.2</td>
<td>-0%(^1)</td>
<td>18,014</td>
<td>12,705</td>
<td>-30%</td>
</tr>
<tr>
<td>Sugar beet</td>
<td>361</td>
<td>278</td>
<td>-23%</td>
<td>49.9</td>
<td>45.7</td>
<td>-8%(^2)</td>
<td>44,858</td>
<td>24,712</td>
<td>-45%</td>
</tr>
<tr>
<td></td>
<td>667</td>
<td>293</td>
<td>-56%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field-scale vegetables</td>
<td>608</td>
<td>734</td>
<td>+20%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Market legumes</td>
<td>401</td>
<td>520</td>
<td>+30%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forage legumes</td>
<td>377</td>
<td>972</td>
<td>+157%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Set-aside (incl. leys and fallow)</td>
<td>938</td>
<td>1,842</td>
<td>+96%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temporary grassland &lt;5 years</td>
<td>4,970</td>
<td>5,821</td>
<td>+17%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permanent pasture</td>
<td>8,858</td>
<td>9,360</td>
<td>+6%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farm woodland^4</td>
<td>1,058</td>
<td>1,055</td>
<td>-0.3%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^1\) All remaining oilseed rape production continued under conventional management on partly converted farms.

\(^2\) A large proportion of the remaining sugar beet production continued under conventional management on partly converted farms.

\(^3\) Totals over all survey farms

\(^4\) Including coppice
Changes in livestock production

On the livestock side (Table 4.5), the area of sharpest contraction in the course of conversion is pig production. Milk yields fall by 5.6%. This is compensated for by an increase in dairy-cow numbers (+7.5%) as farmers try to ensure that their quotas are fully utilised. Four farmers set up new dairy herds in the course of conversion, two gave up milk production, and, while on many farms dairy herds contracted, twelve farmers expanded their herds. Higher cow numbers combined with reduced yields translate into an overall increase in milk production of 1.6%. The yield penalties in dairy production compare favourably with those in arable and are probably one of the factors in explaining why conversion to organic status is more popular with livestock farmers than with arable farmers. On balance, conversion creates some major adjustments in the details of dairy production, but in aggregate the effects cancel out.

Beef production increases in the course of conversion probably for husbandry reasons, adding to the problem of commodity surplus in this area. Poultry production on our sample farms fell by 10%. The figure here is skewed by the returns from one big producer who reduced his production by 80,000 birds. However, this reduction is largely offset by eight farmers who started small to medium-scale egg production units in the course of conversion, as well as existing producers who increased production, probably because of the strong demand for organically produced eggs. Thus in total, poultry production fell by only 26,288 animals. Six producers took up production of table poultry in the course of conversion (not shown in the table).
Table 4.5: Livestock numbers, dairy yields and dairy production on sample farms in a typical year before and after conversion to organic management

<table>
<thead>
<tr>
<th></th>
<th>Numbers before conversion</th>
<th>Numbers now</th>
<th>% change</th>
<th>Yield before conversion (litres per cow per year)</th>
<th>Yield now (litres per cow per year)</th>
<th>% change</th>
<th>Production before conversion (litres per year)</th>
<th>Production now (litres per year)</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ewes</td>
<td>20,560</td>
<td>16,962</td>
<td>-18%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dairy cows</td>
<td>6,491</td>
<td>6,984</td>
<td>+7.5%</td>
<td>6,520</td>
<td>6,157</td>
<td>-5.6%</td>
<td>42,321,320</td>
<td>43,000,488</td>
<td>+1.6%</td>
</tr>
<tr>
<td>Beef cows/ bulls</td>
<td>2915</td>
<td>3702</td>
<td>+27%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fattening pigs</td>
<td>6,800</td>
<td>4,177</td>
<td>-39%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breeding sows</td>
<td>945</td>
<td>458</td>
<td>-52%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poultry for egg production</td>
<td>264,908</td>
<td>238,620</td>
<td>-10%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Marketing

The final factor that must be taken into account in assessing the supply-control implications after conversion to organic management is that farmers tend to become more market-orientated and develop marketing outlets that better meet the demand of the consumer. We tried to assess the availability and reliability of more market-orientated marketing channels by asking farmers how often they had found themselves having to sell their organic products via conventional marketing outlets. The answers are summarised in Table 4.6 and confirm the view that there are well established marketing channels for most organic arable and horticultural products, particularly fruit and cereals, while the marketing of many livestock products, especially milk, beef and lamb, still poses a problem for many organic producers.

Table 4.6: Reliability of dedicated organic marketing channels by product category*

<table>
<thead>
<tr>
<th>Percentage of farmers indicating that they marketed organic products through conventional channels …</th>
<th>Never</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Arable and horticultural products</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fruit</td>
<td>93%</td>
<td>7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cereals</td>
<td>92%</td>
<td>4%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>Oilseeds</td>
<td>92%</td>
<td></td>
<td>8%</td>
<td></td>
</tr>
<tr>
<td>Potatoes</td>
<td>80%</td>
<td>17%</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>Vegetables</td>
<td>72%</td>
<td>24%</td>
<td>4%</td>
<td></td>
</tr>
<tr>
<td><strong>Livestock products</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pork</td>
<td>78%</td>
<td>4%</td>
<td>9%</td>
<td>9%</td>
</tr>
<tr>
<td>Eggs</td>
<td>79%</td>
<td>13%</td>
<td>8%</td>
<td></td>
</tr>
<tr>
<td>Beef</td>
<td>51%</td>
<td>31%</td>
<td>14%</td>
<td>4%</td>
</tr>
<tr>
<td>Chicken</td>
<td>93%</td>
<td>7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lamb</td>
<td>54%</td>
<td>27%</td>
<td>4%</td>
<td>15%</td>
</tr>
<tr>
<td>Milk</td>
<td>39%</td>
<td>25%</td>
<td>20%</td>
<td>16%</td>
</tr>
</tbody>
</table>

*Question: Have you found yourself having to sell any of your organic products as conventional products due to lack of appropriate marketing opportunities?
In summary, conversion to organic methods contributes significantly to limiting the production of certain commodities (especially arable products) that are in surplus within the EU.

### 4.5 Budgetary implications of conversion to organic production

Adoption of organic farming has a number of possible implications for the budgetary cost of CAP support. Organic conversion is likely to lead to some offsetting budgetary savings stemming from the reduced levels of production. These will reduce the cost of direct support payments under the arable and livestock regimes and of storing and disposing of EU surpluses. We will consider these issues in turn. We would like to emphasise that the estimates presented in this section only apply to the past and do not allow conclusions to be drawn for the future.

*Change in arable area payments*

The first consideration is the change in arable area payments. Table 4.7 presents the current and future payment rates.

#### Table 4.7: Arable area payments, 2000-2002

<table>
<thead>
<tr>
<th>Crop</th>
<th>2000</th>
<th>2001</th>
<th>2001</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>£/ha</td>
<td>£/ha</td>
<td>Euro/ha</td>
<td>Euro/ha</td>
</tr>
<tr>
<td>Cereals</td>
<td>217.27</td>
<td>225.64</td>
<td>371.07</td>
<td>371.07</td>
</tr>
<tr>
<td>Oilseeds</td>
<td>308.66</td>
<td>264.3</td>
<td>434.65</td>
<td>371.07</td>
</tr>
<tr>
<td>Proteins</td>
<td>268.48</td>
<td>259.67</td>
<td>427.03</td>
<td>427.03</td>
</tr>
<tr>
<td>Linseed</td>
<td>326.84</td>
<td>270.88</td>
<td>445.46</td>
<td>371.07</td>
</tr>
<tr>
<td>Flax and hemp for fibre</td>
<td>N/A</td>
<td>270.88</td>
<td>445.46</td>
<td>371.07</td>
</tr>
<tr>
<td>Set-aside</td>
<td>217.27</td>
<td>225.64</td>
<td>371.07</td>
<td>371.07</td>
</tr>
<tr>
<td>Set-aside - guaranteed</td>
<td>254.89</td>
<td>246.52</td>
<td>405.41</td>
<td>405.41</td>
</tr>
</tbody>
</table>

Source: DEFRA

Using the payment rates for 2000 and information on changes in land use from the farm survey (Table 4.4), it is possible to estimate the change in payments resulting
from conversion (Table 4.8). A number of assumptions are made in the construction of this estimate. First, it is assumed that area payments are claimed on the total cereal area. Second, it is assumed initially that payments are not claimed on forage legumes and that farms use this area to count for the calculation of stocking density. Third, it is assumed that the reported increase in fallow and set-aside is in fact an increase in set-aside.¹

Table 4.8: Arable area payments pre and post conversion

<table>
<thead>
<tr>
<th>Crop</th>
<th>Pre-Conversion £'000</th>
<th>Post-Conversion £'000</th>
<th>Per Cent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cereals</td>
<td>1603</td>
<td>1290</td>
<td>-19.6</td>
</tr>
<tr>
<td>Oilseeds</td>
<td>261</td>
<td>192</td>
<td>-26.7</td>
</tr>
<tr>
<td>Pulses</td>
<td>104</td>
<td>128</td>
<td>23.3</td>
</tr>
<tr>
<td>Set-aside</td>
<td>212</td>
<td>395</td>
<td>86.6</td>
</tr>
<tr>
<td>Total AAP</td>
<td>2180</td>
<td>2005</td>
<td>-8.04</td>
</tr>
<tr>
<td>Payment per hectare farmed</td>
<td>£85</td>
<td>£78</td>
<td>7.20</td>
</tr>
</tbody>
</table>

The final row in Table 4.8 presents the payments in terms of total area farmed. This reflects the overall change in payments per hectare of land converted to organic production. From the table it can be seen that the estimated impact of conversion is a small reduction in the level of payments of £7 per hectare. Given that there is some uncertainty about whether all the land in set-aside and fallow is in fact in the set-aside scheme, a second estimate based on a lower level of set-aside is made. This results in a greater reduction in the level of payments (£12 per hectare). Alternatively, relaxing the assumption that arable payments are not claimed on forage legumes reduces the difference in direct payments to just £2 per hectare. Therefore the analysis points to a reduction in payments of somewhere between £2 and £12 per hectare farmed.

¹ The farm survey did not differentiate between the area down to set-aside and the area simply left fallow. It is assumed that because of the payments available for set-aside that farms would use this method when fallowing land.
Change in storage and disposal costs

Given that the EU is in surplus in cereals, then production at the margin has to be considered in terms of the costs of storing and disposing of this surplus. The estimated fall in cereal production is some 45 per cent (Table 4.9). The budgetary impact of this change was calculated in two steps. First, we calculated the average storage and disposal costs (per tonne of cereals) by dividing the total storage and disposal costs (average between 1997 and 2000, as published in *Agriculture in the UK*) by the level of surplus production during the period. Second, we multiplied the average cost by the tonnes of surplus production curtailed on our sample farms. There are clearly a number of problems of adopting this simple approach but it does give some idea of the cost of dealing with surplus production. Two estimates of the per-tonne cost are made. The lower estimate (£12 per tonne) is obtained by dividing the published expenditure by the total surplus production (this includes some production that went to other EU countries presumably without payment of export subsidies). The second, higher estimate (£39 per tonne) is obtained by considering only that level of surplus production that was either stored or exported to countries outside the EU. The results are shown in Table 4.9.

Depending on whether we use the lower or the higher cost figure, it is estimated that each hectare of land converted to organic production results in a budgetary saving of between £10 and £33 per year. Clearly though as the support price in the EU is reduced under the Agenda 2000 reforms this budgetary saving will also decline.

Table 4.9: Estimated change in expenditure for cereals

<table>
<thead>
<tr>
<th>Crop</th>
<th>Pre-Conversion tonnes</th>
<th>Post-Conversion tonnes</th>
<th>Difference tonnes</th>
<th>£</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cereals</td>
<td>44858</td>
<td>23476</td>
<td>21381</td>
<td>257</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>£,000</td>
</tr>
<tr>
<td>Total reduction in budgetary cost (£12 per tonne)</td>
<td></td>
<td></td>
<td></td>
<td>834</td>
</tr>
<tr>
<td>Total reduction in budgetary cost (£39 per tonne)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reduction per hectare farmed (assuming a saving of £12/t)</td>
<td></td>
<td></td>
<td></td>
<td>10.03</td>
</tr>
<tr>
<td>Reduction per hectare farmed (assuming a saving of £39/t)</td>
<td></td>
<td></td>
<td></td>
<td>32.59</td>
</tr>
</tbody>
</table>
Changes in the direct payments for livestock

The change to organic systems has also impacted on livestock production. The first step is to consider changes in direct payments as a result of this change. Table 4.10 presents the current payment levels under various livestock schemes.

Table 4.10: Payment rates under various livestock schemes

<table>
<thead>
<tr>
<th>Livestock Scheme</th>
<th>2000</th>
<th>2001</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>£/head</td>
<td>£/head</td>
</tr>
<tr>
<td><strong>Beef Special Premium Schemes</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steers</td>
<td>74.65</td>
<td>81.49</td>
</tr>
<tr>
<td>Bulls</td>
<td>100.27</td>
<td>110.85</td>
</tr>
<tr>
<td>Second payment on castrated bulls</td>
<td>58.72</td>
<td></td>
</tr>
<tr>
<td><strong>Suckler Cow Premium Scheme</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suckler Cow Premium Scheme</td>
<td>102.15</td>
<td>109.05</td>
</tr>
<tr>
<td>National Envelope Top-Up</td>
<td>7.97</td>
<td>14.98</td>
</tr>
<tr>
<td><strong>Extensification Scheme</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stocking Rate 1 to 1.4 LU (1.6 to 2)</td>
<td>20.86</td>
<td>19.77</td>
</tr>
<tr>
<td>Stocking Rate &lt;1 LU (&lt;1.6)</td>
<td>41.36</td>
<td>39.55</td>
</tr>
<tr>
<td>Slaughter Premium &lt; 8 months</td>
<td>10.65</td>
<td>19.77</td>
</tr>
<tr>
<td>Slaughter Premium 8 months +</td>
<td>16.92</td>
<td>31.76</td>
</tr>
<tr>
<td><strong>Sheep Annual Premium Scheme</strong></td>
<td>10.73</td>
<td>tbc</td>
</tr>
</tbody>
</table>


From the survey, the main impact on direct payments would appear to arise from an increase in the beef herd and a reduction in the sheep flock (Table 4.5). A number of factors have to be considered when analysing the impact of these changes on direct payments. The Suckler Cow Premium operates under a system of quotas both at the national level and at the farm level. Given the effective quota, in order to increase the number of cows a producer either has to purchase quota from elsewhere or do so without payment. Either way, this will not lead to a net increase in the budgetary cost of the scheme. The system for the Beef Special Premium (BSP) is slightly different in that the quota only operates at the national level, although payment was made only on the first ninety cows (though this restriction has been relaxed). Therefore, a farm with less than ninety cows could increase its herd and receive extra payments. In addition,
it is possible for farms to take advantage of the beef extensification scheme by reducing their stocking rate (either by increasing their forage area or reducing their number of cows). The increase in forage area noted in the survey suggests that farms may have taken advantage of this scheme. There are other issues such as eligibility for Hill Farm Allowance. Similar problems arise with estimating the direct payments for sheep through the Sheep Annual Premium (SAP). Given that it was impossible to gain the necessary information at the farm level, it is assumed initially that the beef cows and sheep receive the same average direct payments as those found in the FBS for the Eastern Region (Lang, 2002). Table 4.11 shows the results.

Table 4.11: Estimated changes in direct payments for livestock

<table>
<thead>
<tr>
<th></th>
<th>Pre Conversion</th>
<th>Post Conversion</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Payments</strong></td>
<td>£000</td>
<td>£000</td>
<td>£000</td>
</tr>
<tr>
<td>Sheep</td>
<td>205.6</td>
<td>161.1</td>
<td>-44.5</td>
</tr>
<tr>
<td>Beef</td>
<td>349.8</td>
<td>422</td>
<td>72.2</td>
</tr>
<tr>
<td>Livestock</td>
<td>555.4</td>
<td>583.2</td>
<td>27.8</td>
</tr>
<tr>
<td><strong>Per hectare farmed</strong></td>
<td>£</td>
<td>£</td>
<td>£</td>
</tr>
<tr>
<td>Sheep</td>
<td>8.04</td>
<td>6.30</td>
<td>-1.74</td>
</tr>
<tr>
<td>Beef</td>
<td>13.67</td>
<td>16.49</td>
<td>2.82</td>
</tr>
<tr>
<td>Livestock</td>
<td>21.71</td>
<td>22.80</td>
<td>1.09</td>
</tr>
</tbody>
</table>

The estimates in Table 4.11 point to a very small increase in livestock payments per hectare as a result of conversion.

The second aspect of costs from changes in livestock arises from changes in yields. The main area where increased production is likely to lead to increased costs is with beef. However again because information on the quantity of beef marketed (or removed under the various BSE schemes) is not known, estimates have to be made. An average budgetary cost per beef cow is estimated by dividing the total expenditure on the beef sector (excluding those direct payments considered above) by the national beef herd. This is taken to represent the marginal impacts of changes in beef numbers. Using this method produces an estimate of an increase in expenditure per hectare farmed of around £3 as a result of conversion.

---

2 This analysis is undertaken with data prior to the Foot and Mouth outbreak and therefore does not include the budgetary costs associated with the disease outbreak.
**Overall impact**

Table 4.12 shows the overall impact of organic conversion on a per-hectare basis. The table presents a high and low estimate.

### Table 4.12: Estimates of the budgetary impact of conversion

<table>
<thead>
<tr>
<th>Scheme</th>
<th>High estimate (£/ha)</th>
<th>Low estimate (£/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arable Area Payments</td>
<td>-12</td>
<td>-2</td>
</tr>
<tr>
<td>Cereals Disposal/Storage</td>
<td>-33</td>
<td>-10</td>
</tr>
<tr>
<td>Beef per head payments</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Beef other payments</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Sheep (SAP)</td>
<td>-2</td>
<td>-2</td>
</tr>
<tr>
<td><strong>Overall Budgetary Change</strong></td>
<td><strong>-41</strong></td>
<td><strong>-8</strong></td>
</tr>
</tbody>
</table>

The main impact of the conversion to organic farming appears to arise from a reduction in the costs of disposing of surplus cereal production. In terms of direct payments there appears to be relatively little change. As cereal prices come closer to world prices then the budgetary savings associated with organic production are likely to reduce.

The analysis this far has concentrated on the total budgetary costs. However, the schemes discussed above are funded through the European Union. Therefore, the impact on the UK budget is determined by the marginal contribution of the UK to the EU budget. In addition, account has to be taken of the rebate that the UK obtains through the Fontainebleu Agreement. This means that the saving to the UK exchequer highlighted in Table 4.12 will actually be lower.

Finally, we would like to re-emphasise that the estimates presented in this section only apply to the past and do not allow conclusions to be drawn for the future. Also, they do not include general equilibrium effects in terms of knock-on effects on other markets or the rest of the economy.
4.6 Impacts on income and employment

Income effects

We asked farmers to indicate how conversion had affected (or is affecting) their financial situation. The results are summarised in Table 4.13.

Table 4.13: Impact of conversion on the financial situation of the business

<table>
<thead>
<tr>
<th></th>
<th>Number (and percentage) of respondents who reported</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Large improvement</td>
</tr>
<tr>
<td>During conversion (n = 174)</td>
<td>10 (5.8%)</td>
</tr>
<tr>
<td>After conversion (n = 140)</td>
<td>19 (13.6%)</td>
</tr>
</tbody>
</table>

*Question: How has conversion to organic farming affected the financial situation of your business?

More than a quarter of respondents (28%) reported that the switch to organic production had resulted in a financial improvement during the conversion period itself. A somewhat higher proportion of farmers (38%) felt that their financial situation had deteriorated in the course of conversion. Nearly half of the respondents (48.6%) noticed an improvement after conversion was complete, while the number of those who felt that their financial situation had deteriorated fell to 18%. The percentage of farmers who felt that conversion had resulted in a ‘substantial deterioration’ in their finances is relatively constant at roughly 10% both during and after conversion.

It is interesting to note in this context that the majority of farmers (64%) felt that their financial situation had been “strong” or “OK” at the time when they made the decision to convert. This percentage is slightly lower for the conventional reference group (55%) at present. This may be seen to indicate that farmers do not tend to make
the decision to convert out of a situation of financial hardship, although this is clearly not true for all farmers. Many farmers, and especially livestock farmers, remarked that they were reliant on the organic aid payments.

Employment effects

Organic farms tend to have higher labour requirements. Padel and Lampkin (1994) estimated that increases in labour normally range between 10 and 25 per cent. Hird (1997) suggested a similar range of between 10 and 30 per cent. Labour requirements depend very much on the type of enterprises and the enterprise mix. More labour is generally required because organic farming utilises more labour-intensive activities such as mechanical weeding, a higher proportion of labour-intensive crops such as vegetables, more on-farm processing activities and direct marketing, higher information requirements, experimentation with new crops, and increases in farm size (Padel and Lampkin, 1994; Schulze Pals, 1994). In general, the more diverse the enterprise mix the greater the labour requirements, since the benefits of specialisation and economies of size are lost. On the other hand, there may be requirements for less labour due to reduced stocking rates (Offermann and Nieberg, 1999). In a survey of 54 farms in East Germany, Köhne and Köhn (1998) found labour input, in terms of FTEs per 100 hectare, to be around 60 per cent higher on organic arable farms than on their conventional counterparts; this was accounted to diversification of arable rotations, increase in mechanical weeding, and the introduction or expansion of livestock enterprises after conversion. No significant differences in labour input were found between organic and conventional livestock farms. The authors attribute this to a general extensification of livestock production.

We asked Scheme participants to give detailed information about on-farm employment before and after conversion. Table 4.14 shows that the conversion of the sample farms has led to significant increases in casual labour and employed part-time labour input. The demand for casual labour has nearly doubled. Full-time family labour input has fallen slightly; it is not clear whether this is due to conversion or whether it simply reflects the general trend of declining farm-family labour.
Table 4.14: Changes in on-farm employment on organic sample farms

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Full-time family labour</td>
<td>-0.8%</td>
</tr>
<tr>
<td>Part-time family labour</td>
<td>+26%</td>
</tr>
<tr>
<td>Employed full-time labour</td>
<td>+4%</td>
</tr>
<tr>
<td>Employed part-time labour</td>
<td>+46%</td>
</tr>
<tr>
<td>Casual labour</td>
<td>+90%</td>
</tr>
</tbody>
</table>

Overall, these results demonstrate that organic farming is more labour-intensive than conventional farming and thus contributes to rural employment. However, it should not necessarily be concluded that an expanding organic farming sector will cause linear rises in labour requirements: as organic farms become established and possibly larger, they may become more efficient and come to adopt labour-saving technologies (Offermann and Nieberg, 1999).

4.7 Knock-on and spill-over effects

The survey explored whether the Scheme has had any indirect or secondary effects in matters such as practices adopted on neighbouring conventional farms or on farms that made unsuccessful applications under the Scheme. We found it helpful in this context to distinguish between knock-on effects (i.e. secondary impacts on the same farm) and spill-over effects (i.e. impacts on other, conventional, farms).

Small-scale marketing or food-processing initiatives

The development of small-scale marketing or food-processing initiatives often goes hand in hand with conversion to organic farming. The responses indicate that there is a ‘chicken-and–egg’ situation here. On the one hand, the quest for profitable marketing outlets has given rise on some organic farms to the development of a myriad of value-adding initiatives: the survey shows that such initiatives have been introduced on nearly a third of the organic farms (29%, or 52 in total). On the other hand, value-adding activities often seem to have been a factor in encouraging
conversion to organic farming. In many cases this is driven by requests from customers, as highlighted forcefully by the quotes below.

“Having been involved with cheese making, I have been involved in adding value to our milk. It was therefore a logical step on this farm to convert to organics. We have always been a low-input, low-output enterprise, and the organic system endorses the integrity of the milk that we produce – which is being recognised by a growing number of consumers.”

“My main enterprise is pedigree steers of British White Cattle. All steers were already sold as quality meat directly to the public. Converting not only satisfied me personally, it should enhance my meat sales.”

We asked farmers to specify the value-adding activities they were undertaking. There were nearly as many different activities as there were responses, but a broad classification might look like this:

**Direct sales:** box schemes; farm-gate sales incl. farm shops; internet and mail-order business (lamb); farmers’ markets; selling to restaurants; milk round

**On-farm food processing:** on-farm butchery (cutting, processing, freezing facilities); milk processing, e.g. production of drinking yoghurt, butter, clotted cream; milling and home baking.

One farmer commented that he would like to start on-farm food processing but had been unable to obtain planning permission for a cold store as his district council “do not consider cold stores as a necessary part of a farm”.

**Impacts on other farmers**

We approached the question of spill-over effects from different angles. We began by asking organic farmers to describe their non-organic neighbours’ attitudes towards organic farming at two different points in time – before and after conversion. The results are shown in Table 4.15.
Table 4.15: Organic farmers’ perceptions of their non-organic neighbours’ attitudes towards organic agriculture

<table>
<thead>
<tr>
<th></th>
<th>sympathetic/supportive</th>
<th>neutral</th>
<th>sceptical/hostile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before conversion</td>
<td>22</td>
<td>66</td>
<td>90</td>
</tr>
<tr>
<td>(n = 178)</td>
<td>(12%)</td>
<td>(37%)</td>
<td>(51%)</td>
</tr>
<tr>
<td>Now</td>
<td>38</td>
<td>84</td>
<td>48</td>
</tr>
<tr>
<td>(n = 170)</td>
<td>(22%)</td>
<td>(49%)</td>
<td>(28%)</td>
</tr>
</tbody>
</table>

*Question: How would you describe, on balance, your non-organic neighbours’ attitudes towards organic farming?*

The table confirms that neighbouring farmers have generally become more sympathetic to organic agriculture. The number of farmers who were sceptical of organic agriculture has nearly halved. It is not clear though to what extent this reflects a general trend and to what extent it is attributable to the Organic Farming Scheme.

As a next step, we presented both groups of farmers with a number of statements reflecting the possible impacts on conventional farmers of the general increase in public and government support for organic agriculture. The results are shown in Tables 4.16 and 4.17.

Table 4.17 indicates that non-organic farmers are not entirely insensitive to the changed policy environment. For example, 46% stated that they had reduced their use of pesticides and fertilisers, and 36% said that they had become more sympathetic to organic farming. There is some doubt over how far this figure can be trusted, however, as 70% of the non-organic farmers had ticked ‘no impact at all’.

Table 4.16 shows that nearly half of the organic farmers (45%) thought that increased public and government support of organic agriculture had ‘no impact at all’ on their non-organic neighbours. Only ten organic farmers (7%) reported that their non-
organic neighbours had now decided to convert as well, and 36% said that their neighbours had become more sympathetic to the ideas of organic farming.

Organic farmers who had observed changes in their neighbours’ attitudes or behaviour were then asked whether they thought that their own conversion had contributed to these. 34% thought that their own conversion had been a factor.

Table 4.16: Organic farmers’ perceptions of the impact that increased public and government support for organic agriculture has had on their non-organic neighbours *

<table>
<thead>
<tr>
<th></th>
<th>Percentage of organic farmers who ticked</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Disagree</td>
</tr>
<tr>
<td>No impact at all</td>
<td>28%</td>
</tr>
<tr>
<td>Have become more sympathetic to organic farming</td>
<td>31%</td>
</tr>
<tr>
<td>Have also decided to convert</td>
<td>65%</td>
</tr>
<tr>
<td>Now considering conversion as an option</td>
<td>48%</td>
</tr>
<tr>
<td>Have reduced use of pesticides and fertilisers</td>
<td>58%</td>
</tr>
</tbody>
</table>

*Question (to organic farmers): Do you think that the recent increase in public and government support for organic agriculture has had any impact on your non-organic neighbours?
Table 4.17: Impact of increased public and government support for organic agriculture on non-organic farmers

<table>
<thead>
<tr>
<th>Statement</th>
<th>Percentage of non-organic farmers who ticked</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Disagree</td>
</tr>
<tr>
<td>No impact at all</td>
<td>23%</td>
</tr>
<tr>
<td>Have become more sympathetic to organic farming</td>
<td>52%</td>
</tr>
<tr>
<td>Now considering conversion as an option</td>
<td>65%</td>
</tr>
<tr>
<td>Have reduced use of pesticides and fertilisers</td>
<td>51%</td>
</tr>
</tbody>
</table>

*Question*(to non-organic farmers): Has the recent increase in public and government support for organic agriculture had any impact on you?

### 4.8 Farmers’ views of the Organic Farming Scheme

We asked participants in the Scheme to tick a number of statements relating to the usefulness of the Organic Farming Scheme. 66% felt that the Scheme had provided them with “essential support during [the] insecure conversion period”. 42% found the Scheme “useful but not enough”. 26% claimed that they “would have converted anyway” even in the absence of the Scheme. Only 18% stated that they “would rather have had access to more free advice and information”, underlining the conclusion reached above that for most farmers access to information is not a big problem. Only 3% felt that the grants had acted as an “incentive that has lured me in the wrong direction”. Further analysis of these responses reveals that they comprise a subset of those who said that they had regretted the decision to convert and were considering returning to conventional agriculture.

Farmers were also asked to express their views on the administration of the Organic Farming Scheme on a Likert Scale of 1 (“very satisfied”) to 5 (“not at all satisfied”). The average score was 2.9, but opinions ranged across the entire scale (Figure 4.5).
Figure 4.5: Level of satisfaction among farmers with the administration of the OFS

In general, farmers appear to have been quite satisfied with the administration of the Scheme. Some felt that staff lacked practical expertise and understanding of organic farming practices. Many complained about delays in payments, too much paperwork (‘unnecessary requests for information’), and slow processing of applications. Some felt that there were too many administrative bodies involved, while others thought administration should be based more locally.

4.9 Conclusions

There has been a very notable growth in organic farming since 1996 after a cyclical pattern of growth throughout the 1980s and 1990s. By June 2001, the area of farmland under organic management or in conversion in the UK had increased to nearly 623,200 hectares. Organic and in-conversion land now represents 3.9% of the UK’s total agricultural land area, a figure slightly above the EU average. The closure of the Scheme probably had more impact on timing of conversion rather than overall numbers.
The main conclusions from farm survey can be summarised as follows:

**Environmental impacts of conversion.** Organic farmers adopt more environmental management practices than non-organic farmers, although some of these are required as part of the Organic Farming Scheme. Many organic farmers had observed environmental improvements after conversion, and some were expecting further benefits in the longer term. Farmers’ observations lend some support to the generally held view that farmland birds are among the main beneficiaries of organic farming. Many farmers had managed their land extensively before, implying that the effects attributable to conversion may be smaller than they appear at face value.

**Supply control effects.** On sample farms, conversion has led to a large reduction in the area down to cereals and major increases in the areas of legumes, set-aside and fallow. The reduction in cereal area coupled with lower yields has led to a major fall in production. For livestock, the main changes have been a marked increase in the beef herd and declines in the numbers of pigs and sheep. While there are well established marketing channels for most arable and horticultural products, the marketing of livestock products, particularly milk, beef and lamb, still poses a problem for many organic producers.

**Budgetary implications of conversion.** Organic conversion leads to some moderate budgetary savings stemming from the reduced levels of production. Based on past data, the overall savings range between £8 and £41 per hectare of land converted to organic status. The main impact appears to arise from a reduction in the costs of disposing of surplus cereal production, while the impact of conversion on direct payments is negligible. As cereal prices come closer to world prices, the budgetary savings associated with organic production are likely to reduce.

**Impacts on income and employment.** During the process of conversion, more than a quarter (28%) of respondents reported that the switch to organic production had resulted in a financial improvement. A somewhat higher proportion of farmers (38%) felt that their financial situation had deteriorated. After completion of the conversion process nearly half of the respondents (48.6%) noticed an improvement while the number of those who felt that their financial situation had deteriorated fell to 18%. The survey results demonstrate that organic farming is more labour-intensive and thus
contributes to rural employment. In particular, conversion has led to significant increases in casual labour and employed part-time labour.

**Knock-on and spill-over effects.** The quest for profitable marketing outlets has given rise on some organic farms (29%) to the development of a range of value-adding initiatives, including various direct marketing and on-farm processing activities. In some cases, these seem to have been a factor in encouraging organic conversion in the first place. Neighbouring non-organic farmers have generally become more sympathetic to organic agriculture, although it is not clear though to what extent this reflects a general trend and to what extent it is attributable to the Organic Farming Scheme.

**Farmers' views of the Organic Farming Scheme.** Sixty-six per cent of respondents felt that the Scheme had provided them with essential support during the conversion period. Forty-two per cent found the support from the scheme useful but not enough. Twenty-six per cent claimed that they would have converted even without the Scheme. In general, respondents were satisfied with the administration of the Scheme. There was very little fundamental criticism of the present support arrangement.
5. Value for money

Summary

This section assesses three aspects of the value for money of the Organic Farming Scheme: the extent to which conversion can be attributed to the Scheme; whether conversion could have been achieved at a lower cost to the taxpayer; and the potential for and costs of converting more land to organic production.

Our analysis leads us to the conclusion that roughly a quarter of the farms that took advantage of the Organic Farming Scheme would have converted anyway. It was also found that a significant number of organic producers were seriously considering reverting to conventional agriculture when their contracts expire.

We estimate that for every 100 farmers who enter the Scheme, 79 will retain organic management after 5 years, but only 53 of these can be attributed to the operation of the Scheme, since 26 would have converted anyway. In other words, 79% of the initial benefits of conversion continue to be delivered after 5 years, but only 53% can be attributed to the Scheme.

As the cost of conversion can vary widely between farms, it is argued that flat-rate payments, as offered under the present arrangements, are likely to be less cost-effective than competitive schemes. Therefore a system of competitive tendering is considered as an alternative to flat-rate payments. Our analysis suggests that in theory there is scope for a bid-discrimination system to select ‘cost effective’ producers for the scheme. However, there is clear evidence that a tendering system would not be popular with farmers and in particular would be unlikely to attract new entrants to the scheme. In addition, there was little support for a tendering system among stakeholders.

There appears to be some scope for attracting more land into organic production: 66% of non-organic farmers said they would consider switching if the OFS grants were increased. Our findings suggest that an aid package that offered roughly twice what is currently available would attract 7.8% of conventionally managed land area over to organic production, bringing the total up to just over 11%.
5.1 Introduction

We undertook three separate pieces of analysis to assess to what extent the Organic Farming Scheme had delivered value for money. The first was an assessment of ‘additionality’ – the extent to which conversion to organic can be attributed to the Scheme. This required an analysis of what farmers would have done in the absence of the Scheme. The second looked into questions of whether the same level of conversion could have been achieved at a lower cost to the taxpayer. Here we focused on the possibility of allocating contracts for the Organic Farming Scheme through competitive bidding. The third element of our analysis consisted of a price-testing exercise to assess the potential for, and the costs of, converting more land to organic production.

5.2 Additionality

The analysis in Section 4 focused on quantifying the effects of converting land to organic status. It is unlikely that these effects are in their entirety attributable to the Organic Farming Scheme because some of the land would have been converted in the absence of the policy initiative. Also, even in cases where the Scheme provided the incentive for conversion, it is not clear whether farmers would simply have carried on as before or whether they would have made other management changes. In addition, some of the land enrolled in the Scheme may be returned to conventional agriculture either as OFS contracts expire or because farmers choose to opt out in the course of the five-year contract period.

Figure 5.1 represents the additionality issue. Of each 100 farmers entering into a contract in a given year, a certain percentage (one quarter in the diagram) would have converted anyway, that is, in the absence of support, giving an additionality factor of 75% for year 1. As time progresses, some farmers, including some of those who would have converted anyway, may choose to abandon their contracts and repay the grant. Hence the negative slope of the lines in Figure 5.1. After 5 years, when contracts expire, another chunk of producers will choose to return to conventional agriculture. Both forms of wastage mean that the additionality factor at the end of year 5 is lower than at the beginning of year 1. The analysis below evaluates additionality at both points in time.
We included a number of questions in the survey to assess what Scheme participants would have done if funds from the Organic Farming Scheme had not been available. Farmers were asked to tick given statements. Multiple answers were possible. The results are given in Table 5.1.

A large number of farmers (37%) said that they would have converted anyway, and only a quarter said that they would have carried on as before. The remainder would have made some management changes, including participation in other agri-environmental schemes (25%). 16 farmers (9%) would have given up farming altogether, a possible indication that the OFS is keeping a small percentage of farmers on the land, with possible impacts on the process of structural change.

To verify the figure of 37% who said they would have converted anyway, we asked farmers in a different context how useful they found the Organic Farming Scheme and again gave them the option of ticking the statement “would have converted anyway”. Here, 26% ticked this option. On balance, it appears that between a quarter and a third of Scheme participants would have switched to organic production irrespective of the availability of conversion support. Those farmers who stated that they would have converted anyway are relatively equally distributed across sectors: 34% of livestock
farmers, 31% of arable farmers and 30% of mixed-farm operators made this statement.

Table 5.1: What Scheme participants would have done in the absence of OFS grants  
(multiple answers possible; percentages of all farmers reporting; n = 180)*

<table>
<thead>
<tr>
<th>Would have done in the absence of OFS grants</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Would have converted anyway</td>
<td>37%</td>
</tr>
<tr>
<td>Would have converted a smaller part of the farm</td>
<td>12%</td>
</tr>
<tr>
<td>Would have diversified in other ways</td>
<td>21%</td>
</tr>
<tr>
<td>Would have specialised and intensified in conventional production</td>
<td>12%</td>
</tr>
<tr>
<td>Would have taken part in other agri-environment schemes such as ESA or Countryside Stewardship</td>
<td>25%</td>
</tr>
<tr>
<td>Would have carried on as before</td>
<td>25%</td>
</tr>
<tr>
<td>Would have given up farming altogether</td>
<td>9%</td>
</tr>
</tbody>
</table>

*Question: What would you have done if grants for organic conversion had not been available?

We are aware that any question regarding the necessity and usefulness of grant payments is likely to encourage biased responses if respondents feel that their answer may have an impact on future policy. We therefore tried to approach the matter from different angles in order to get a clearer, more trustworthy picture. We asked Scheme participants how they thought conversion to organic farming would have affected their financial situation if funds from the Organic Farming Scheme had not been available (Table 5.2).

The majority of farmers felt that in the absence of OFS grants conversion would have resulted in a deterioration of their financial situation, especially during the conversion period. However, 26% of the respondents envisaged a financial improvement once their farms had obtained full organic status. It seems fair to assume that these farmers (who expected organic farming per se to be a profitable business) would have been ready to make the switch to organic agriculture of their own accord and in the absence of government support. It is noteworthy that the figure of 26% is identical to the
proportion of farmers who had stated that they “would have converted anyway” (see above). This gives us some confidence in reporting the OFS’s additionality factor in year 1 to be in the region of 75%.

Table 5.2: Impact of conversion on the financial situation of businesses in the absence of OFS grants

<table>
<thead>
<tr>
<th>Number (and percentage) of respondents who reported:</th>
<th>During conversion (n = 175)</th>
<th>After conversion (n = 147)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Large improvement</td>
<td>Small improvement</td>
</tr>
<tr>
<td>During conversion (n = 175)</td>
<td>1 (0.6%)</td>
<td>6 (3.4%)</td>
</tr>
<tr>
<td>After conversion (n = 147)</td>
<td>2 (1.4%)</td>
<td>36 (24.4%)</td>
</tr>
</tbody>
</table>

*Question: How do you think conversion would have affected your financial situation if no funds from the Organic Farming Scheme had been available?

In order to assess the Scheme’s additionality after year 5, we asked Scheme participants whether they had ever regretted switching to organic agriculture and whether they were seriously considering returning to conventional agriculture. 37 of the 173 farmers who responded to this question (21%) said that they were seriously considering reversion to conventional farming. Adding this figure to the 26% who said that they “would have converted anyway” and deducting this sum from 100, we arrive at an additionality factor after year 5 of 53%. That is, of each 100 farmers who entered the Scheme, 79 would retain organic management after 5 years, but only 53 of these would be attributable to the operation of the Scheme, since 26 would have converted anyway. In other words, 79% of the initial benefits of conversion (Section 4) continue to be delivered after 5 years, but only 53% can be attributed to the Scheme. This percentage might be slightly higher in practice if one makes account for the possibility that some of the 26 farmers who would have converted anyway might revert to conventional agriculture after the 5 years.
5.3 Increasing value for money through tendering?

Theoretical considerations

The cost of conversion can vary widely between farms, suggesting that flat-rate payments as offered under the present arrangements are likely to be less cost-effective than competitive schemes. Competitive bidding has a number of theoretical advantages over fixed-rate payments (Latacz-Lohmann and van der Hamsvoort, 1998). First, bidding permits the parties involved to make allowance for the uncertainty about levels of payment. It is the better informed party (the landholder) who makes the first move in determining the “price”, while the less well informed party (the programme administrator) retains the power to set the rules under which competing claims are compared and selected. In this way, private information held by the bidders can be brought to bear. Second, bidding explicitly introduces an element of competition between farmers, thereby encouraging truthful disclosure of conversion costs as part of the bids. In this way, a bidding mechanism can serve as a mechanism for revealing costs, thus mitigating informational asymmetries between farmer and programme administrator and potentially resulting in a near-perfect discrimination of payment rates according to the actual level of conversion costs.

Overall, more land can be attracted over to organic production for the same amount of public expenditure when a bidding mechanism is used than under a system of fixed-rate payments: for details, see Latacz-Lohmann and van der Hamsvoort, 1997, 1998. Bidding yields the highest net benefits over fixed-rate payments when the administrator’s information on farm-level conversion costs is poor, the number of potential bidders is large, the contracts offered are homogeneous, and the farms are heterogeneous in their conversion costs. These conditions probably hold for organic conversion more than for any other kind of agri-environmental scheme.

It would be possible to set different bid caps for arable land, horticultural land and grassland, and bid caps could be differentiated spatially. For example, the bid cap for arable land in East Anglia could be different from the bid cap for upland arable land. Bid caps could be set after bids have been received. This would give DEFRA some control over the spatial distribution of conversion. Another potential advantage of tendering is that it offers a precise way of avoiding the risk of exceeding expenditure limits. In addition, bidding imposes a certain discipline on farmers inasmuch as they
would need to think through their conversion strategies and cost the options at hand. This might lead to a positive selection of producers who had a clear vision of sustainable production and how to market their products, and thus reduce the risk of eventual reversion and the frustration that comes with it. On the other hand, the problem of the ‘winner’s curse’ might mean that tendering would increase the chances of selecting producers who found subsequently that they were unable to operate on the level of payment for which they tendered.

**Practical concerns**

A number of practical concerns have made bidding mechanisms unpopular with European policy makers and administrators.

- Experience with bidding for CRP (Conservation Reserve Program) contracts in the USA has shown that strategic bidding behaviour in repeated bidding rounds may have an adverse effect on cost-effectiveness. After a few signup rounds, farmers learned the bid caps and adjusted their bidding strategies accordingly, resulting in the majority of bids lying within a narrow band just below the ‘going rate’. The existence of an explicit EU-imposed ceiling on payment levels might encourage farmers to adjust their bids to that ceiling.

- The potential benefits of tendering come at the cost of higher administrative involvement. DEFRA is not experienced in holding auctions, and this increases the risk of “implementation failure”.³ Policy administrators tend to be particularly chary of having to assess and rank bids which offer potentially very different environmental benefits. This may require subjective judgements and thus lay them open to the risk of criticism and potentially very costly appeals. However, this criticism is not specific to bidding; any attempt to select applications on environmental merit would be subject to the same criticism. These difficulties could be overcome by ranking bids solely on the tendered price per hectare of land.

- Bidding involves high transaction costs for farmers, and it has been surmised that the complexity of preparing a bid may deter farmers from applying for the Scheme (MAFF, 1998). Farmers already complain about the amount of

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³ DEFRA has, however, gained some experience through the auctioning of agreements for the decommissioning of fishing vessels.
paperwork involved in the OFS, and it is feared that bidding would add yet another layer. This said, most farmers are quite familiar with bidding situations (e.g. at livestock markets) and should therefore be well placed to handle bidding for OFS contracts.

**Evidence from the farm survey**

It is difficult to come to any firm conclusions on tendering on the basis of theoretical considerations. Some empirical insights are required. We therefore tried to establish farmers’ attitudes towards tendering and to elicit information about possible bid rates. After extensive explanation of how a tender system would work, we asked both groups of farmers, organic and non-organic, to consider the following question: “If a tender system had been in place at the time you converted, how much money per hectare (total over the five-year period) would you have requested in your bid?”

52 of the 68 organic farmers who responded to this question were included in the analysis. (The remaining 16 had apparently misunderstood the question and entered the annual amount they would request rather than the five-year total.) The average bid comes out to £594 per hectare, roughly £150 above the current rate for IACS registered arable land. As expected, individual bids varied quite widely around the mean. The lowest bid was £100 and the highest was £1500, with a standard deviation of £332. The distribution of (hypothetical) bids is shown in Figure 5.2. It is clear from the graph that the distribution of bids would offer some scope for bid discrimination on cost-effectiveness criteria, such that a certain number of producers could have been accepted onto the Scheme at below the current rates.

When broken down by farm type, the following picture emerges: arable farmers requested the highest payments, on average £700 per hectare, followed by mixed farms (£612 per hectare), and livestock farms (£485 per hectare). These figures clearly indicate the relative differences in conversion costs between the different farm types.
As a next step, we asked Scheme participants how much ongoing support they would request (per hectare per year) if such support were to be introduced and allocated through a bidding mechanism. 90 farmers returned figures which ranged from £5 to £800 per hectare per year, with an average bid of £134 and a standard deviation of £138. The distribution of bids is shown in Figure 5.3. When broken down by farm type, a similar pattern to that above emerges: arable farmers once again requested the highest payments (£180 per hectare), followed by mixed farms (£146 per hectare), and livestock farms (£114 per hectare).
We would like to emphasise that absolute bid amounts should be interpreted with great caution since they are likely to be subject to both ‘hypothetical bias’ (no real money involved) and ‘strategic bias’ (deliberate overstatement of bids). Of greater importance is the distribution of bids, although this too may be biased to the extent that respondents biased their answers to differing extents. The wide distribution of bids indicates clearly the range of conversion costs within the industry. More importantly, it also shows that there would be much scope for bid discrimination in the selection of ‘cost-effective’ producers if a tendering system were to be introduced.

We finally offered respondents the option of ticking the statement: “I wouldn’t like tendering, and the government should rather offer every farmer the same amount of money.” 137 of the organic farmers (76%) and 104 of the non-organic producers (88%) ticked this option, indicating that a bidding system would not be popular with either group. Only five of the conventional farmers said that they would submit a bid in the future under such conditions. This is a very clear message and lends strong support to the contention that farmers would be deterred by a tendering system.

This view was widely shared by stakeholders. There was little support for making payments subject to a tendering system. It was felt that such a system would be administratively costly and slow the whole process down. Nearly all stakeholders
agreed that a tender system would not be in the best interests of farmers and would deter them from conversion. In any tender system there are losers, and this would add further to the existing lack of confidence in the sector and tend to discourage new conversions.

In sum, the findings from the different pieces of analysis suggest that, while tendering would probably offer some scope for increased cost-effectiveness, it would deter farmers from applying for the Scheme. If the political objective is to encourage further expansion of the organic sector, tendering is not an appropriate option at this stage.

5.4 Price testing and the potential for future conversion

As noted earlier, 40% of the conventional farmers in the sample said that they had considered converting to organic at some time in the past (between 1996 and 2001). We asked whether they could imagine converting their farms to organic status within the next two years, giving them the following options: “no, under no circumstances” (76: 60%); “possibly, but we will have to give it further thought” (41: 32%); “probably, but we will have to sort out a few questions beforehand” (8: 6%); “it is almost certain that we will convert soon” (1: 0.8%).

We then asked the 76 producers who had ruled out conversion within the next two years whether they would be ready to consider conversion in the longer term. Only 7% replied yes, 52% would perhaps consider it, and 41% ruled it out altogether.

Asked whether they would consider conversion in the longer run if OFS grants were increased, 66% of respondents said that they would consider it, while 34% would not convert whatever the financial incentives. These figures may be seen as support for the contention that there exists a latent willingness among British farmers to switch to organic production and thus a latent potential for the conversion of a much larger percentage of UK farmland.

We tried to gain some deeper insights into this matter by asking non-organic farmers what percentage of their land they would convert to organic production at successively higher payment rates. We used this information to derive ‘offer curves’ for organic conversion as a function of the level of incentive offered. The results are
summarised in Figures 5.4 and 5.5. The first shows the proportion of respondents (out of the 126 non-organic farmers) who said that they would be prepared to enter some of their land into the Scheme.

Figure 5.4: Proportion of non-organic farmers willing to convert land as a function of the financial incentive offered ($n = 126$)

The graph suggests that while it might be relatively easy to encourage a further 10% of farmers to convert to organic production, it would be rather difficult and potentially very costly to attract a substantially higher proportion.

Figure 5.5 shows the proportion of the total land area that farmers would be willing to commit to organic production at successively higher grant rates. These figures were calculated by adding up the land areas each farmer would be willing to convert at the respective payment rate and dividing the total by the total land area held by all 126 non-organic farmers. The idea here is that, if our sample of non-organic farmers is representative of all non-organic farmers, then the percentages displayed in Figure 5.5 give an indication of the potential for further expansion of the UK organic land area as a function of the payment rates offered. This function can be interpreted as a supply
curve for organic conversion, where ‘supply’ is measured in terms of the share of organically managed land. However, these results should be interpreted with caution as hypothetical questions about how much land non-organic farmers would convert under different payment rates are presumably quite difficult to answer with any degree of accuracy.

Figure 5.5: Proportion of total land area offered for conversion as a function of the financial incentive offered (n = 126)

An aid package offering roughly twice the amount currently available (90% more) would attract 7.8% of the conventionally managed land area over to organic production, bringing the total up to just over 11%. Austria has an aid package similar to this and has roughly 8% of its agricultural land area under organic management. The results reinforce the impression that it might be possible to attract a moderate amount of land into organic production at relatively low costs, but a significant increase would be very expensive. It is worth noting in this context that attracting more entrants involves the risk of over-compensating a number those brought into the Scheme, especially if the increased payment rates were to be made available to those already in the Scheme.
5.5 Conclusions

We estimate that perhaps three quarters of current conversions to organic production may be attributed to the direct impact of the Scheme, and that about half can be expected to continue to be in organic production beyond five years after conversion.

While tendering has important theoretical attractions given the characteristics of the organic conversion process, there are a number of practical drawbacks, and this approach appears to be unattractive to both farmers and stakeholders. We therefore conclude that it is not an appropriate option under present circumstances.

Conventional farmers’ responses concerning the levels of payment they would required to persuade them to convert indicate that there would be a positive response to higher payment rates. The figures suggest that perhaps up to 10% of farmers would respond to a doubling of payment rates, but that considerably higher payments would be required to achieve a substantially higher uptake.
6. Public assistance for organic farming: looking ahead

**Summary**

There is general satisfaction with the OFS. However, a number of improvements to the Scheme have been proposed. This section evaluates some of these proposals and goes on to look at more fundamental possible changes to the mechanisms of support for organic production.

It is felt that higher payment rates for arable or horticultural conversion are not viable methods for increasing the rate of conversion of these types of business.

On the basis of the evidence from the surveys, it is argued that the introduction of capital grants for the conversion of buildings, for example, would not be cost-effective.

There may be some justification for requiring those converting to produce a business plan to indicate that they have given careful consideration to the market opportunities available. A business planning requirement makes particular sense if the objective is to encourage only ‘sustainable’ conversions.

There may be a case for the spatial targeting of support. We argue that the nature of the environmental benefits of organic agriculture, i.e. improvements across the entire range of environmental indicators, would probably call for a concentration of organic production in arable landscapes. It is here that such improvements are most needed.

Arguments can be made for support for organic farmers to be made ongoing. Unsurprisingly, most organic farmers were keen to see continued support. However, a substantial proportion of organic producers believe that organic agriculture should stand on its own feet after the conversion period. There was relatively little support among stakeholders for ongoing support beyond the five-year period covered by the current Scheme.

As an alternative to area-based payments, stakeholders felt that government money should be targeted at: (1) developing the infrastructure to facilitate the production of local and regional produce; (2) providing training for farmers; and (3) educating farmers to increase awareness of marketing issues and encourage the formation of farmer cooperatives and marketing groups.
Changes in the level and nature of support under the CAP have generally acted to increase the financial attractiveness of organic production. The nature of support for organic agriculture has to be considered in terms of its compatibility with WTO agreements.

There are calls for an integrated action plan for the development of the organic sector, with the setting of targets for levels of production. However, it is argued that there are a number of reasons why quantitative targets do not make for good policy.

6.1 Introduction

The analysis so far has revealed very little fundamental criticism of the present support arrangements. The Scheme appears to be performing well in achieving its stated objectives. There is evidence that it has encouraged an array of knock-on marketing and processing initiatives and had some positive impacts on non-organic farmers. It is popular with farmers, and the fact that the Scheme has been oversubscribed in the past is an indication that the level of incentive offered is not too low. As we have noted earlier, some would no doubt have entered at a lower level. A few minor points did come to the fore, however. These are reviewed in Section 6.2 and suggestions are made for how they might be addressed. The remaining sections look out beyond the current support arrangements to consider more fundamental changes to the system of organic-farming support. Section 6.3 looks at the pros and cons of ongoing support. Section 6.4 considers alternatives to area-based support. Section 6.5 considers possible changes to the CAP which might promote organic agriculture. Section 6.6 discusses the pros and cons of setting quantitative targets for the development of organic agriculture and the merits and disadvantages of integrated action plans for the organic sector.
6.2 Scope for improvement of the current Scheme

Payment rate adjustments

There is a general feeling among stakeholders that action needs to be taken to address the imbalance between livestock farms and arable/horticultural farms in the membership portfolio of the Scheme. It is widely accepted that the relatively low number of organic arable farmers puts upward pressure on organic feeds prices, which have become a major deterrent to the conversion of livestock farms. A need to encourage more conversions in the horticultural sector was also identified: supermarkets in particular would like to see more UK organically produced fruit and vegetables. Estimates of conversion costs vary widely, but rates paid in other Member States lie, on average, between €700 and €800 (£430 to £490) per hectare per year. This is about five times the level available to horticultural producers in the UK.

We believe, however, that the case for introducing a separate, higher, payment rate for horticultural producers to reflect the higher costs of conversion is not particularly strong. 12 of the 16 horticulturists in the sample said that they would have converted anyway, even if no grants from the OFS had been available. Only two said that they regretted the decision to convert and were considering reversion. Table 6.1 shows that the vast majority of horticultural producers have experienced an improvement in their financial position in the wake of conversion.

Table 6.1: Impact of conversion on the financial position of horticultural businesses*

<table>
<thead>
<tr>
<th></th>
<th>Number of respondents who reported:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Large improvement</td>
</tr>
<tr>
<td>During conversion (n = 15)</td>
<td>0</td>
</tr>
<tr>
<td>After conversion (n = 13)</td>
<td>6</td>
</tr>
</tbody>
</table>

*Question: How has conversion to organic farming affected the financial situation of your business?
This is a clear indication that conversion has been profitable for the majority of horticulturists at the present payment rate. We have doubts whether a separate, higher, payment rate would attract significantly more producers. It appears that conversion of horticultural businesses is driven, more than in any other sector, by market factors (supermarket demand) rather than by the availability of conversion aid. Indeed, many vegetable growers are under pressure from the multiples to convert part of their land in order to maintain their contracts to supply the supermarkets. Some further analysis of this relationship might reveal more about the constraints and incentives affecting conversion.

We are not sure either whether an increase in the rate paid for arable land would be adequate to encourage more arable farmers to convert. In our view, the slow uptake of organic methods by arable producers in the UK is a result of combination of two factors. First, arable production in the UK is highly specialised. The once close interconnections between crop and livestock production have largely been lost in such areas as East Anglia, meaning prohibitively high conversion costs for many farmers. Indeed arable farmers may have reservations about turning themselves into livestock farmers, lacking experience and knowledge about livestock production methods. Trying to attract these farmers would thus be very expensive and would not give good value for money. Second, the farm survey results indicate that arable farmers perceive the market for arable products to be excessively volatile, making conversion to organic status a high-risk strategy. Of the 40 farmers in the survey who we identified as mainly arable, 22 said they were “concerned” or “very concerned” about market risks. However, many of these found conversion reasonably profitable, at least after they had gained full organic status (Table 6.2).

We believe that it would be inappropriate to encourage ‘high-cost’ conversions that are unlikely to be viable in the longer term unless supported by substantial ongoing payments. Such producers would, in any event, be unlikely to convert, so the high level of aid would only serve to overcompensate others. We believe that alternative means of encouraging participation would be more effective in inducing more arable farmers to convert (see Section 6.4).
Table 6.2: Impact of conversion on the financial position of arable farms*

<table>
<thead>
<tr>
<th></th>
<th>Large improvement</th>
<th>Small improvement</th>
<th>No change</th>
<th>Small deterioration</th>
<th>Substantial deterioration</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>During conversion (n = 36)</td>
<td>0</td>
<td>5</td>
<td>12</td>
<td>14</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>After conversion (n = 32)</td>
<td>3</td>
<td>9</td>
<td>11</td>
<td>3</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

*Question: How has conversion to organic farming affected the financial situation of your business?

**Capital grants**

An argument was put forward in the stakeholder analysis for restructuring the payments by directing some funds away from revenue payments towards capital grants. Considerable investment may be necessary during conversion to cover buildings and facilities such as manure handling and storage, fencing and restoration of environmental features. We have shown in Section 3.4.1 (Table 3.1) that farmers do not consider ‘unsuitable buildings or machinery’ (implying the need for investment) a major obstacle to conversion. This factor received Likert scores of between 1.9 and 2.3, with 1 = ‘not important’ and 5 = ‘very important’. On the basis of this finding, we cannot recommend the introduction of capital grants into the OFS if the objective is to maximise the impact of the money spent. While it would be desirable, in principle, to offer capital grants for investment in environmental features such as hedges and other field boundaries, we believe that this should not necessarily be done under the OFS, but rather under a more targeted scheme that would also be open to non-organic farmers.

**Business planning requirements**

A suggestion was made that the Scheme should include a requirement for business planning and marketing proposals; this was intended to counter concerns that in the
prevailing economic conditions the Organic Farming Scheme attracts some farmers who are motivated by the hope of finding a way out of existing problems rather than by a thoroughly thought through vision of sustainable organic production. We find it desirable, in principle, to attach such a requirement. This would discourage farmers who do not have a clear vision of sustainable organic production, and would help others to make well informed decisions. This would also reduce the likelihood of disillusion and disappointment during the process of conversion and ultimately result in lower reversion rates. Such a requirement would, without doubt, come at the cost of more ‘paperwork’ and might therefore be rejected by a large number of farmers. We note below the concerns of farmers that the administrative burden is already excessive. We leave the ultimate judgement to DEFRA. If the objective is to encourage only ‘sustainable’ conversions, a business planning requirement makes sense; if the objective is to maximise enrolment in the Scheme, then as few obstacles as possible should be put in the way of farmers, no matter how sensible they appear in theory.

**Spatial targeting of support**

We believe that the spatial targeting of limited funds, however difficult this might be politically, could enhance the Scheme’s effectiveness. Concentration of funds on certain ‘priority areas’ makes sense for two reasons. First, it would encourage the critical-mass and network effects that give rise to ‘increasing returns to adoption’; in this way, certain regions could develop their own dynamic of organic expansion which would eventually spread out to other regions. Second, targeting is likely also to lead to ‘increasing environmental returns to adoption’; the greater the share of organically managed land in a particular region, the higher the environmental benefits per unit of converted land. This is generally attributed to the creation of environmental networks providing wide-ranging habitats for wildlife (Firbank, 2002). There is, however, no consensus as to where organic land should be concentrated in order to maximise environmental benefits. The general perception is that conversion to organic makes the biggest difference, in terms of its environmental effects, in intensive-farming landscapes because it requires farmers to make significant changes to the way land is managed, thus introducing diversity in an otherwise rather monotonous landscape (Firbank, 2002). However, the quality of the benefits
generated tends to be comparatively low because of the low conservation potential of intensive arable land. The principal alternative would be to concentrate organic production on land with a high potential for environmental enhancement, for example in the proximity of nature reserves, or on land within SSSIs. Here the changes in land management required to obtain organic status might be less fundamental than in arable areas, and the inherent potential of the land to generate high-quality environmental benefits if managed organically is perceived to be much higher (Firbank, 2002).

We argue that the nature of the environmental benefits of organic agriculture, i.e. improvements across the range of environmental indicators, calls for a concentration of organic production in arable landscapes. It is here that such improvements are most needed. We believe that the specific benefits sought in environmentally sensitive areas are better achieved through alternative, more targeted agri-environmental measures.

We asked stakeholders what they thought of the idea of spatial targeting. There was, as one might expect, no consensus on this. Some thought that if funds were limited they should be targeted, even if ideally the areas to be targeted should extend right across the country. Others suggested that targeting would generate support systems to provide key environmental benefits. Those opposed to targeting thought it would muddle objectives and make for bad policy: specific schemes were needed for specific objectives.

On balance, it appears that while spatial targeting of funds might potentially benefit the environment more than an untargeted scheme, there is likely to be substantial political opposition to this approach.

Administrative improvements

There was little fundamental criticism of the administrative procedures of the Scheme. However, a number of issues were flagged for improvement. Many farmers and stakeholders called for a simplification of administrative procedures, especially in relation to reporting requirements. Not having to apply for the payments every year – bearing in mind all the documentation requirements – would help. To what extent this is feasible from an administrative point of view is another matter. There is also a widespread feeling that the payment of grants should be speeded up and, probably
most importantly, that funds should be available throughout the year. The closure of the Scheme in 2000 was perceived by many as very disruptive and potentially damaging to the development of the organic industry – although it should be noted that our analysis in Section 4.2 suggests otherwise.

A number of farmers complained about the lack of flexibility over opting out of the Scheme during the five-year contract. Some are quite desperate to return to conventional agriculture but cannot afford to repay the grant, and are thus locked into what they perceive as an unprofitable farming system. They suggested that it should be possible to opt out during the term of the contract without the reimbursement requirement.

There is an argument that government is the proper party to shoulder the risk that the intended outcomes of organic conversion fail to be maintained in the longer term. In some circumstances, individual farmers fail because of lack of appropriate infrastructure or market opportunities, matters outside of the farmer’s control. The risk is likely to be a heavier burden on the individual risk-averse farmer than it is on the government, for whom the overall outcome is spread across a large number of conversions. Permitting farmers not to pay back grants would reduce one risk facing prospective converters, and would thus in principle either encourage a greater number of applicants or enable the level of grants offered to be reduced. Against this, such a change might reduce the incentive to farmers to make a success of their conversions. However, on balance we suggest that repayments might be waived.

6.3 Ongoing support

The introduction of ongoing support is very high on the agenda of those calling for a further expansion of organic agriculture in the UK. We argued in Section 2 that ongoing support can be justified in principle on the grounds of the positive environmental externalities of organic farming. Another possible justification for some longer-term support centres on the critical-mass and infrastructure arguments presented in Section 2. Creating the critical mass of organic producers sufficient to mobilise scale effects and building an infrastructure for the marketing of organic products and for efficient exchange of information within the industry takes longer than converting a farm to organic status. Hence some longer-term support could, to
some extent, compensate for the lack of critical mass and infrastructure during the industry’s ‘infancy’. Another, though weaker, argument in favour of maintenance support is the potential for competition distortion arising from the availability of maintenance support in other EU Member States.

**Farmers’ views on ongoing support**

It is not surprising, perhaps, that the majority of Scheme participants interviewed in the course of the research were very much in favour of ongoing support. We asked farmers: “If the government decided to increase support for organic farming, how should the money be spent?” We provided a list of eight statements and asked them to rank them, with 1 indicating “highest priority” and 8 indicating “lowest priority”. Figure 6.1 shows that ongoing support was given the highest priority among the options, with an average score of 3.0. (Note that the lower the score the more important the factor).

![Figure 6.1: Organic farmers’ preferred deployment of increased funds for organic farming*](chart)

*Question:* If the government decided to increase support for organic farming, how should the money be spent?

Interestingly, farmers ranked “higher conversion grants” lowest, reinforcing the view that current payment rates are adequate. However, this may not be an altogether surprising response from organic farmers: they do not stand personally to benefit from
higher grants and such grants would serve to increase the numbers of farmers with
whom they were in competition. Again, improvements to the advisory service did not
come out as a priority, supporting the view that access to information and advice is no
longer a great concern among organic producers.

Figure 6.2 shows the distribution of responses to “ongoing support” in terms of the
number of farmers who ranked this first, second, etc. While more than half of
respondents ranked ongoing support first, 19 farmers (12%) gave it the lowest
priority, suggesting that there is a core of producers who believe that organic
agriculture should stand on its own feet without ongoing government support. This
core could consist of as many as 20% of organic producers, based on the number of
farmers who gave ongoing support lowest or second lowest priority.

Figure 6.2: Number of respondents who ranked ongoing support:

![Bar chart showing distribution of responses to ongoing support]

We explored this issue further by asking both groups of farmers, organic and non-
organic, what they thought of a scheme offering ongoing support. We gave
respondents a set of statements to tick. The results are shown in Table 6.3.
Table 6.3: Farmers’ views on ongoing support*

<table>
<thead>
<tr>
<th></th>
<th>Agree</th>
<th>Disagree</th>
<th>Don’t know</th>
<th>n =</th>
</tr>
</thead>
<tbody>
<tr>
<td>In that case, I would seriously consider converting my farm.</td>
<td>39%</td>
<td>32%</td>
<td>29%</td>
<td>116</td>
</tr>
<tr>
<td>(non-organic farmers only)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In that case, I would have converted earlier and with more confidence.</td>
<td>(59%)</td>
<td>(26%)</td>
<td>(15%)</td>
<td>(165)</td>
</tr>
<tr>
<td>(organic farmers only)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I think organic farming should stand on its own feet after the conversion period.</td>
<td>61%</td>
<td>24%</td>
<td>15%</td>
<td>116</td>
</tr>
<tr>
<td></td>
<td>(42%)</td>
<td></td>
<td>(8%)</td>
<td></td>
</tr>
<tr>
<td>Government should rather use the money to support organic advisory services.</td>
<td>26%</td>
<td>57%</td>
<td>17%</td>
<td>114</td>
</tr>
<tr>
<td>(non-organic farmers only)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government should rather use the money to support the development of appropriate processing and marketing facilities for organic products.</td>
<td>31%</td>
<td>41%</td>
<td>28%</td>
<td>113</td>
</tr>
<tr>
<td>(non-organic farmers only)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government should rather use the money to educate consumers about the benefits of organic food.</td>
<td>15%</td>
<td>67%</td>
<td>18%</td>
<td>109</td>
</tr>
<tr>
<td>(non-organic farmers only)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organic farmers deserve ongoing support because they do something good for the environment.</td>
<td>38%</td>
<td>50%</td>
<td>12%</td>
<td>117</td>
</tr>
<tr>
<td>(organic farmers only)</td>
<td>(87%)</td>
<td>(9%)</td>
<td>(4%)</td>
<td>(173)</td>
</tr>
<tr>
<td>Organic farmers need ongoing support to survive.</td>
<td>57%</td>
<td>31%</td>
<td>12%</td>
<td>115</td>
</tr>
<tr>
<td></td>
<td>(70%)</td>
<td>(20%)</td>
<td>(10%)</td>
<td>(169)</td>
</tr>
</tbody>
</table>

*Question: What would you think of a scheme offering on-going support for fully established organic farmers?
The table highlights some interesting points:

- A substantial proportion of organic producers (42%) believe that organic agriculture should stand on its own feet after the conversion period. However, this appears to be inconsistent with the high proportion of organic farmers (87%) who ticked that organic farmers deserve ongoing support because of the environmental benefits they generate.

- The majority of the organic farmers did not have much confidence in the economic viability of their farming system: 70% supported the view that organic farmers need ongoing support to survive. It is conceivable, however, that the responses here are subject to strategic bias.

- A significant proportion of the non-organic producers (39%) said that they would seriously consider switching to organic agriculture if ongoing support were made available. This has both positive and negative interpretations. The positive is that the ‘supply’ of conversion would respond quite flexibly to any incentives from a scheme offering ongoing support. The negative is that many farmers might convert for the money rather than the market opportunities or any vision of sustainable production. Both interpretations reflect the importance of profit as an incentive for conversion.

- Once again, farmers did not place much emphasis on improvements to the organic advisory service.

**Stakeholders’ views on ongoing support**

At a time when policy in general is moving away from farming subsidies there is relatively little support among stakeholders for offering organic farmers ongoing support beyond the five-year period covered by the current Scheme. However, most stakeholders were prepared to see ongoing payments for environmental benefits if accompanied by a set of prescriptions to underpin these benefits. If the demand for organic products is there, certain farmers will produce them efficiently – just as they produce products efficiently by conventional farming – but these farmers will not necessarily be organic producers with a particular interest in nature and the environment. If this happens, there is a risk that as the number of organic farmers
increases there will be an increasing need for explicit mechanisms to promote continuing environmental enhancements.

The majority of stakeholders favoured the introduction of a low-level, broad-entry environmental scheme available to all farmers and growers, but with certain organic strands that could qualify organic farmers for the scheme. This would necessarily be prescriptive, but not onerously so, if it is to produce the required environmental benefits, and would be WTO compatible. Animal welfare and rural economic benefits might also be included.

In principle, it would make sense if all farmers, whether organic or conventional, had the option of participating in such a scheme. However, there may be an argument for higher rates of payment for organic farmers. One issue is whether a given environmental enhancement (e.g. woodland, hedges, set-aside) is of greater environmental value simply by virtue of its being located on an organic holding. We suspect that it would be, owing to the greater general presence of wildlife species, and thus organic contributions to such a scheme would promote a greater contribution to wildlife. If this is so, there is a logic in paying higher rates to organic farmers within a broad and shallow scheme.

In the longer term, it might be appropriate to permit local or regional decisions on whether to offer top-ups to nationally set payment rates. We suspect that this approach might fall foul of EU rules. But in principle local regions might be best placed to determine for themselves whether they wish to develop a local concentration of organic enterprises and fund it accordingly.

**WTO compatibility**

Organic-aid schemes are likely to attract the attention of free-trade proponents in future WTO rounds. Concern has been expressed that agri-environmental schemes in general which pay farmers for the provision of environmental goods and services can distort international competitiveness and divert trade flows, giving rise to economic inefficiencies (see Freeman and Roberts (1999); Vasavada and Warmerdam (1998)). Such concerns arise because agricultural output and environmental benefits are often joint products of farming. Accordingly, policies pursued for domestic reasons can affect trade. Latacz-Lohmann and Hodge (2001) have argued that this does not necessarily imply economic inefficiency. Rather, well-designed agri-environmental
Schemes designed to internalise the environmental externalities of farming can be regarded as ‘trade-correcting’.

A potential weakness, in WTO terms, of organic support schemes is that the maintenance of environmental benefits may be conditional on circumstances in a particular product market. This is because they support a farming system that is linked to a particular, very volatile market – the organic food market; other agri-environmental schemes do not have such direct market links. They also tend to have more clearly defined environmental goals and appear to be more targeted on the specific benefits sought. The real concern, however, is likely to revolve around the possibility of strategic behaviour of governments. Governments may be inclined to support organic agriculture beyond levels of efficient environmental benefits under the umbrella of ‘multifunctionality’ (Vasavada and Warmerdam, 1998). They may also institutionalise trade-distorting policies if they use ‘subjective’ non-market benefits to justify Green Box support, misrepresent the size of these benefits, or implement unfocused or untargeted policies. Ongoing support for organic producers appears to fall into just this category of policies.

The WTO has yet to formulate rules and guidelines to determine which domestic policies qualify for the Green Box. We believe that ongoing support will have to meet a number of conditions to make it eligible for Green Box status.

First, the environmental objectives must be spelled out more clearly. This may turn out to be a difficult task given the very nature of the environmental benefits – widespread improvements across a large number of environmental indicators, which critics may criticise as ‘unfocused’. There may thus be a case for attaching a set of (mild) environmental conditions to maintenance support as a way of highlighting the environmental character of these payments. These might focus on certain organic farming practices identified as being of potential concern to environmental interests – for example the ploughing up of leys and grassland at the wrong time. In addition, UKROFS conservation guidance could be attached to maintenance support as a condition, so that the specific conservation requirements would apply directly to recipients of support.

Second, we believe that maintenance payments should not be allowed to become the driving force behind an expansion of the organic sector. Payment rates must therefore
be moderate and based on the environmental benefits. Maintenance payments approaching the level of Arable Area Payments, as currently offered in Austria, are likely to become an automatic target in trade negotiations unless a country can demonstrate beyond reasonable doubt that these payments are justified by the environmental benefits generated. We consider payment rates of between £25 and £40 per hectare per year, as suggested in the House of Commons report (2001), to be about right, although these figures are not based on any hard evidence. These figures should therefore be kept under review and updated once more is known about the public’s valuation of the environmental benefits of organic farming.

There are other potential measures which could help to make ongoing support ‘WTO-proof’. These include spatial targeting and tendering. As noted above, we know too little at present about the spatial dimension of the environmental benefits from organic agriculture to make any firm recommendations about targeting. Likewise, while we believe that tendering would increase the effectiveness of conversion support, we have doubts whether it is the right mechanism for allocating maintenance support. Ongoing support is meant to remunerate farmers for environmental benefits and should therefore not necessarily be linked to individual farmers’ costs of retaining an organic system. Indeed, the case could be made for basing maintenance support entirely on the public’s valuation of the benefits generated.

6.4 Alternatives to area-based support

We asked stakeholders what else the government should do – beyond providing area-based payments – to encourage the development of the organic sector. Three main issues were raised by most stakeholders, all of them echoed in the literature. Not in order of importance, these are: (1) developing the infrastructure to facilitate the production of local and regional produce; (2) provision of training for farmers; and (3) educating farmers in marketing issues and the importance of developing farmer cooperatives and marketing groups.

Infrastructure development grants

One issue that came out very clearly in both the stakeholder interviews and the farm survey is the scarcity of local abattoirs and processing facilities. Their demise has
accelerated in the wake of the foot and mouth crisis of 2001, and there is a general feeling that this has harmed the development of the organic livestock sector. While many stakeholders and farmers called for some government funds to be directed to the development of a network of local abattoirs, one stakeholder remarked that the Treasury would not want to be seen to support what looks like small-scale, inefficient structures. However, a local, small-scale marketing and processing infrastructure which caters for the needs of a ‘networked’ organic farming sector may be less inefficient than may appear at face value. Other arguments in favour of support for such a network are its potential to improve the traceability of agricultural products for consumers and to reduce the number and extent of livestock movements.

The Processing and Marketing Grant Scheme operated under the England Rural Development Programme provides a framework for such grants. The scheme is designed to improve the agricultural processing and marketing infrastructure and offers cost-share grants for capital investments, including the erection of new buildings, refurbishment of old premises, and purchase of equipment. Applications can be made for investments of over £70,000, with the maximum grant available £1.2m. We have not analysed the take-up of this scheme by organic farmers, cooperatives or processing companies, but the impression from the farm survey is that there is little awareness of the scheme among organic farmers.

**Provision of training**

There are different views on the need for better training. Many stakeholders were of the opinion that organic farming is different from conventional agriculture, and that traditional training is not suitable. The farmers in our survey, however, consistently failed to rank the improvement of training and advice as a particularly high priority. Other commentators agree that there is far more human capital supporting organic agriculture in the UK than there was 10 years ago (Dobbs and Pretty, 2001). Specific, project-based organic training courses are eligible for support under the Vocational Training Scheme. Again, we have not analysed how far the Scheme has been utilised to pay for organic training courses.

We are of the opinion that more innovative training initiatives which encourage networking among producers would be more effective in meeting the demands of the industry than traditional training courses. One such initiative could be a mentoring
scheme whereby an experienced organic farmer mentors one or two neighbouring farmers, giving them personalised assistance with planning, technical problems, marketing and administrative procedures. Such a scheme is run very successfully by the Vision 2020 Organic Farming Project in Jefferson County, Iowa, USA.\(^4\) When the project was conceived in 1996, the initial goal was to mentor six apprentices. Since then, over 75 farmers have been assisted in their efforts to learn about organic farming, and many of the initial apprentices now act as mentors themselves. Organisers also use meetings, workshops, field days and regional conferences to encourage sharing and interaction among producers and apprentices. The success of the Iowa scheme suggests that mentoring is an effective way of organising and better utilising the wealth of organic farming expertise within a region. It can also spark off joint marketing or processing initiatives. Whether government should have a role in encouraging such training initiatives is not clear. Clearly, much of the benefit would be enjoyed by those within the industry and there would be a clear argument for them to provide the funding. However, the benefits would be likely to extend beyond the individual apprentice and take on a certain degree of public character. There may then be an argument for a collective industry scheme with some government support, at least to get it started and to help with the running costs.

*Raising farmers’ awareness of marketing issues and the need to cooperate*

The general feeling among stakeholders was that farmers should be far more aware of marketing issues before they convert, and should develop some sort of grouping to be able to negotiate with retailers from a strong base and guarantee quality and continuity of supply. In fact, one supermarket suggested that growers should not plant until they have an agreement from the end user. Retailers made the point very forcefully that British farmers needed to overcome their natural reluctance to cooperate in the marketing of their products. Cooperation was thought to be of particular importance as the organic supply base in the UK is still below the threshold where product quality and continuity of supply can be guaranteed. While some believed that government should have a role in facilitating better communication and cooperation among organic farmers and between farmers and retailers, we are again of the opinion that the initiative should come from within the industry. It would be

\(^4\) [www.iastate.edu/~vision2020/Resources/influencer/orgfarm.html](http://www.iastate.edu/~vision2020/Resources/influencer/orgfarm.html)
It is widely recognised that changes to the CAP in the past ten years have been largely beneficial for organic agriculture. The introduction of area-based payments for set-aside, the reduction of price support, and the more recent general shift from production-related support to agri-environmental and rural-development support have all helped to increase the relative profitability of organic agriculture. There are also examples of very specific amendments of CAP rules which help organic farming directly. One such example is the recent decision to allow organic farmers to grow (and harvest) fodder legumes on set-aside land (Agri-Europe, 2001).

There are continued pressures from the WTO to further decouple income support from production, and the envisaged eastward enlargement of the European Union adds financial urgency to further reductions in commodity supports. If the decoupling process continues, farmers will have less incentive to continue conventional farming systems, and organic farming will become a more attractive option. This may eventually create some leeway for reducing grant rates.

However, some aspects of the CAP still provide price and income signals that may be viewed as distorting farmers’ decisions about whether to convert. One such is headage payments for beef and sheep production. If organic livestock production is less intensive, with fewer animals held per hectare, then shifting the basis of support from animal numbers to fodder area would be greatly welcomed by the industry.

One question that remains unanswered is how to adjust organic payment rates to changes in the overall level of CAP support. The largest share of organic production takes place in disadvantaged and marginal areas of the country. If the general level of agricultural support were to be significantly reduced, then organic farms in these areas are likely to be hard hit. It might be difficult to justify on the grounds of environmental benefit the same overall level of support as is currently available. This might threaten the viability of organic farming, and indeed all farming, in disadvantaged and marginal areas. The position is difficult to judge, since such
changes would also involve subsequent adjustments to land prices, rents and input costs. There is in any case a need to reassess payment rates in marginal areas to reflect the shift to area-based payments, and as part of this process it will be necessary to review the position of organic farms. Designing WTO-compatible policies to address these problems may become one of the major challenges of the near future for European policy makers.

6.6 An integrated action plan for the organic sector?

Many who argue for further expansion of organic agriculture have called for the implementation of action plans for the development of the sector. Some countries, notably Denmark and Germany, have already instituted action plans, and proposals have been made for an integrated action plan at Community level (Dabbert et al., 2001). According to Dabbert et al., an action plan involves a systematic approach to policy design and implementation in order to achieve specified quantitative targets, e.g. for the land area under organic management in a given future year. Dabbert et al.’s proposal calls for five distinct ‘areas for action’ to be combined in an action plan: (1) informing the consumer, (2) improving the functioning of organic supply chains, (3) financial support for organic farmers, (4) review of related policies, and (5) supporting ‘creative conflict’.

In the UK, there has been a concerted campaign to persuade the government to adopt such an action plan. The Organic Food and Farming Targets Bill, a private members bill introduced in session 1999-2000, aimed at ensuring that 30 percent of agricultural land would be under organic management by 2010 and that 20 percent of the food consumed in this country would be organic by that date (House of Commons, 2001). Supporters argue that the setting of targets and their systematic pursuit would “help the sector develop smoothly” and “give the confidence to growers, farmers, retailers and investors that the organic sector is set on a course of growth” (House of Commons, 2001).

The House of Commons report (2001) noted that not all organic bodies were in favour of such a plant, with Organic Farmers and Growers Ltd. insisting that it wanted no targets “whatsoever”. We found this view clearly echoed in our stakeholder survey. Reasons given for this view were that it would be a retrograde step, as the current
movement is away from production controls; that it would be better to ensure that UK demand is met by UK supply; and that public money might be wasted if there were no markets for the produce at the end of the day. It was recognised that targets were sometimes set as aspirations rather than as absolutes, but the general feeling was to let the markets find their own level.

We support this view, emphasising that a policy which pursues quantitative targets without regard for the realities of the organic market would be neither sustainable nor WTO-compatible. Any policy-induced fall in organic prices would translate into calls for higher subsidies. Organic agriculture could thus end up as a subsidy-driven industry, out of touch with its markets and consumers. We believe that expansion should proceed at a rate that will not lead to erosion of the producers’ premium prices for organic produce. Bearing in mind the high proportion of survey farmers who stated that organic farming should stand on its own feet after the conversion period, we have considerable doubts whether the pursuit of quantitative targets would receive a broad measure of consent within the organic farming community.

There are further reasons for our belief that quantitative targets do not make for good policy. One is that they create a risk that policy makers, farmers and the general public will lose sight of alternative approaches to agricultural sustainability, for example through integrated or low-input farming systems. An all-organic action plan may also undermine the integrity of conventional agriculture in the public eye or, worse, undermine the public’s confidence in conventionally produced food.

6.7 Conclusions

The fact that the Scheme is oversubscribed indicates that the rates of payment offered are at least adequate. There are indications that a number of farmers would have participated at lower levels, but this is an inevitable consequence of the use of a single rate rather than a competitive approach. Alternatives to the current system would themselves raise further complications. There is concern that there is an imbalance between arable and livestock farms converting to organic production, and in particular over the limited supply of horticultural products. However, we do not feel that an increase in payment rates is necessarily the solution. Conversion of horticultural businesses is driven more by market factors than is the case in other sectors, and there
may be scope for further investigation of the constraints in the marketing channels for horticultural products. Similarly, with respect to arable production generally, we feel that the way to increase conversion lies in better marketing and training rather than in higher payment rates. Neither do we feel that there are strong arguments for the payment of capital grants.

We do consider that it would be desirable for those applying to schemes to be required to include a business and marketing plan. This would oblige farmers to identify specific market outlets before committing their businesses to conversion. We appreciate that this would add to the level of bureaucracy, already felt to be too high by some farmers. DEFRA will need to balance these two factors.

We have considered the spatial targeting of support. There was little consensus on this issue. While there may be scope for enhancing the environmental benefits of organic farming through some form of spatial targeting, there are, at present, no obvious criteria available against which such targeting might be implemented.

There was little major criticism of the way in which the scheme was administered. One suggestion was that farmers who revert should not be required to repay the conversion grant. There is an argument for this to the extent that failure may not be the fault of the individual farmer and that government may better bear risk than individuals. In principle too, the payment rate required would be lower if repayments were not required. Against this, there might be a weaker incentive on farmers to make a success of conversion after they have committed themselves to farm organically. On balance, we feel that the issue of waiving the requirement to repay grants should be reviewed.

The question of whether ongoing support should be paid is a major issue. Not surprising perhaps, a majority of farmers was in favour of this and against an increase in conversion grants. We found that 70% of organic farmers felt that they would need ongoing support in order to survive. However, there is a substantial minority of farmers who feel that organic farming should stand on its own feet after the conversion period. There did seem to be some responsiveness amongst non-organic farmers, of whom about 40% indicated that they would seriously consider converting to organic if there was ongoing support.
There must be doubts as to whether some general policy of ongoing support for organic farmers would be WTO-compatible. It would be necessary to demonstrate that support is offered in payment for specific environmental outcomes and we see a role for a modest level of payment, perhaps between £25 and £40 per hectare per year as suggested in the House of Commons (2001) report, linked to specific environmental requirements. This might be incorporated into a more general agri-environmental scheme.

Stakeholders were asked what role the government might have beyond area-based payments. Three main points were raised. First, support might be given for the development of a small-scale marketing and processing infrastructure; this might be provided through the ERDP Processing and Marketing Grant Scheme. Second, there was some concern that training available in the sector was inadequate. An initiative here could promote more innovative training schemes, such as mentoring. This should be organised on a collective industry basis and there would be some role for government in establishing and supporting the appropriate arrangements. Third, some believed that government should have a role in facilitating better communications and cooperation. Again, the main force behind this should come from within the industry, with perhaps some initial support from government to get schemes established.

The reform of the CAP will have repercussions for the organic sector. It is likely to be less seriously affected than conventional agriculture, but loss of payments and reduced output prices will be a problem, especially in marginal areas. There is in any case a need to review support arrangements in marginal areas in response to a shift towards area payments and it is important to consider how this might affect the organic sector.

It has been suggested that there should be an action plan for organic farming, setting targets for organic conversion and consumption. We do not support this view. There is a danger that setting targets disconnects the industry from the market and would lead to pressures on government to adjust payment rates in order to meet an arbitrarily set target. We rather believe that the sector should be responsive to the requirements of the market and learn to provide what is demanded in a cost-effective manner.
7. Summary and recommendations

7.1 Key considerations

There is a sound rationale for government intervention to assist conversion to organic farming based on its beneficial impacts on the environment and the infant character of the industry.

EU Member States have tended to increase the level of support for organic conversion in recent years, and all Member States, with the exception of France and the UK, now offer ongoing support to certified organic producers.

The UK supply base has grown rapidly over the past four or five years, although the growth appears to have slowed down recently. There is a perception that the size of the industry still is below the threshold required to guarantee product quality and continuity of supply. This has resulted in high imports of organic produce, which many farmers blame on the availability of ongoing support in exporting countries.

There are indications that the sector would benefit from ‘increasing returns to adoption’ through critical-mass, networking and learning effects as the sector expands in size and scope. This means that the average cost along the entire supply chain would fall and organically produced food could become less expensive for the consumer without necessarily harming producers’ profits.

The markets for organic produce are very volatile and in some areas still limited by lack of processing and distribution facilities. This creates a risk of organic premiums being eroded if the domestic supply base grew too quickly or if high levels of support in other Member States led to a surge in the volume of low-price imports.

While marketing problems still pose a significant obstacle to conversion, especially for livestock farmers, we found no evidence of ‘information failure’. The infrastructure for the provision of specialist information and advice is evolving, and farmers find access to and quality of information satisfactory.

The study has revealed very little fundamental criticism of the Organic Farming Scheme. Payment rates are by and large considered adequate and the Scheme is popular with farmers and achieves its stated aims and objectives.
Conversion has been profitable for the majority of producers, especially after obtaining full organic status. Nevertheless, the Scheme has inevitably attracted a substantial minority of farmers who subsequently found organic production financially unattractive and are now considering reverting to conventional agriculture. A typical dilemma is that most conversions are motivated by hopes of higher profits, but at the same time many farmers considering conversion are concerned about the perceived lack of profitability in organic farming.

Although the majority of organic farmers would welcome the introduction of ongoing support, there is evidence that farmers would prefer to be rewarded by the market rather than by taxpayers’ money. Lack of success in the marketplace is perceived by many as a most frustrating experience, giving rise to high reversion rates. In contrast, there was a feeling among stakeholders that those who get their marketing right will never return to conventional agriculture.

There is little scope for increasing the effectiveness of the Scheme through marginal changes to the current support arrangements: more radical changes such as competitive bidding for OFS contracts or spatial targeting of limited funds on certain priority areas would be needed. Tendering and targeting have theoretical advantages but might be impractical to implement and are, in all events, unlikely to be politically attractive.

The ‘diffuse’ nature of the environmental benefits of organic agriculture is likely to make organic aid vulnerable to criticism in the WTO. This calls for a cautious approach to organic aid, especially with regard to payment rates for the maintenance of organic agriculture, in order to ensure that such support meets the conditions of the WTO’s Green Box.
7.2 Recommendations

In the light of the above considerations and the conclusions presented in Section 6.7, we recommend the following:

1. The Organic Farming Scheme serves a useful purpose and should continue.

2. A requirement for business planning and marketing proposals should be included in the Scheme in order to reduce the number of financially unsustainable conversions supported by public funds.

3. Payment rates should be reviewed regularly and, if necessary, adjusted to reflect new policy targets and market requirements. Assuming an upward-sloping supply curve for organic conversion, payment rates will have to be raised if higher-cost conversions are to be encouraged. We recommend that any revised payment rates should not be made available to land already subject to an agreement under the OFS: this would represent poor value for money as it would produce no additional organic land, and might also be seen as overcompensating existing producers and thus as providing hidden income support.

4. DEFRA should look into the possibility of waiving the requirement for farmers who give up organic farming to pay back the conversion grants received. Their failure may be the result of factors beyond their own control, and government may be better placed to shoulder the risk. This may in itself encourage an increase in applications for conversion at any given level of support.

5. Support should be extended to established organic farmers. There is a sound justification for ongoing support based, firstly, upon the delivery of public goods and, secondly, upon the provision of start-up assistance to an infant industry. In order to avoid the muddling of objectives, we recommend that the payments based on public-goods delivery be named ‘organic stewardship support’. We would envisage these payments not to be time-limited. Payments to encourage critical-mass, networking and learning effects, in contrast, should
be named ‘organic industry start-up assistance’. These payments would be time-limited until critical size is attained, and could be made degressive. Start-up assistance should not be linked to the time scale of individual conversions but to the time scale of a conversion period for the organic sector as a whole.

Figure 7.1 illustrates our proposal. The upper diagram represents three farms converting at different points in time. The lower diagram is a technology-diffusion curve, showing the percentage share of organic farming at each point in time. Farm A would be eligible for conversion support, industry start-up assistance and stewardship support. The same is true for Farm B, but the rate of start-up assistance is now lower because, given a larger-size industry, Farm B benefits from scale effects. Start-up assistance would have been entirely phased out by the time Farm C converts.

It is not clear though whether the proposed structure of support is entirely compatible with the Rural Development Regulation (1257/1999). If conversion support covers the costs of conversion, including an incentive payment, then the two other elements of support may be seen to infringe upon the provision that the total amount of aid must not exceed income forgone plus a 20% incentive payment. This is not the occasion to discuss the appropriateness of determining payments based on income forgone, but we have argued elsewhere (CRER, 2002) that alternative models may be more appropriate under certain circumstances. The arguments presented above add to the criticism of the current model.
6. The overall *level* of support should take account of the potential market repercussions. We would like to emphasise that the scale of the diagram is in no way indicative of the absolute or relative levels of support under the three headings: we have no empirical evidence upon which to make recommendations about the level of stewardship support or start-up assistance. We strongly believe, however, that these elements of support should not be allowed to become the driving force behind the development of the organic...
supply base. We believe that policy should be sensitive to the needs of those already operating in the industry: a policy-induced fall in producer prices that is not accompanied by an equivalent reduction in production costs will reduce the profitability of organic farming for existing producers and new entrants and thus trigger the need for higher support. Policy should therefore take a cautious approach, limiting the overall level of support to what organic food markets can tolerate.

7. The environmental goals of organic stewardship support should be clearly spelled out. DEFRA should also consider attaching some moderate environmental conditions to stewardship payments as a way of emphasising the environmental character of these payments and thus making them immune to challenge in the WTO. DEFRA should also consider the desirability and feasibility of targeting stewardship funds on areas in which the expected ‘environmental returns’ are highest. As explained above, there is still some uncertainty as to which areas should be targeted. First indications are that organic conversion would yield the highest environmental benefits in the intensive farming landscapes. Targeting of funds does not necessarily imply that non-targeted areas should be ineligible for stewardship support; rather, targeting could be achieved by differentiating the rates of support between different regions and areas of the country, or indeed between farm types.

8. We recommend that organic stewardship support be implemented as part of a wider, low-level, broad-entry agri-environmental scheme available to all farmers. This idea was very popular with stakeholders. It also underlines the environmental character of the payments. There may be arguments for paying organic farmers higher rates within this framework to the extent that environmental features on organic farms deliver greater environmental benefits than on conventional farms.

9. Government should give priority to maintaining and enhancing the network of local abattoirs. Lack of processing and marketing infrastructure still represents a major obstacle to conversion to organic agriculture, and the demise of local abattoirs has contributed significantly to the problems of organic livestock farms. We believe that investment in local abattoirs would be an effective means of addressing the marketing problems facing livestock producers. This
might be criticised as public money being used to support small-scale, inefficient structures, but when one accounts for the wider benefits of organic livestock production as it affects local and regional markets such use of public funds might prove to be quite efficient.

10. We do not believe that additional investment in the formal infrastructure for delivery of specialist information and advice should rank particularly high on the list of government priorities. OCIS is a trusted source of pre-conversion advice, which appears to fit demand at present, and farmers appear to have little difficulty obtaining post-conversion advice. However, farmers would welcome initiatives that develop the ‘informal’ infrastructure in this area, for example in the form of mentoring schemes as discussed in **Section 6.4**. We have doubts as to whether government should have a role in providing such schemes, but there may be a role for government in facilitating a collective industry approach to provision.

11. There is a strong case for more R&D funds to be made available for organic agriculture as a means of developing its productive and conservational potential. In this way, organic farming could to some extent catch up, in terms of productivity, with conventional farming, which benefited from extensive research since the end of the Second World War. The existing imbalance in the technological development of the two farming systems is likely to put organic agriculture at a distinct disadvantage – a disadvantage which has escaped the eyes of many commentators. A long-term research strategy for organic agriculture would aim at rectifying this imbalance and help to improve the efficiency of organic production, thereby making it more attractive and profitable.

12. We do not believe that there should be an action plan for organic farming, setting targets for organic conversion and consumption. There is a danger that setting targets disconnects the industry from the market and would lead to pressures on government to adjust payment rates in order to meet an arbitrarily set target. We rather believe that the sector should be responsive to the requirements of the market and learn to provide what is demanded in a cost-effective manner.


