

**ECONOMIC EVALUATION OF
STAGE II & III ESAs**

FINAL REPORT

Final Report for

Ministry of Agriculture, Fisheries and Food

submitted by

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Contents

S1 Executive summary	v
1 Introduction	1
1.1 Objectives	1
1.2 Research targets and approach	1
1.3 Report structure	3
2 ESA participants	5
2.1 Survey design	5
2.2 Base features of participants	6
2.3 Possible impact of ESA scheme withdrawal	16
2.3.1 Area farmed	16
2.3.2 Ownership	17
2.3.3 Area devoted to crops	17
2.3.4 Impact on crop yields	18
2.3.5 Impact on input costs	19
2.3.6 Impact on livestock numbers	19
2.3.7 Impact on livestock husbandry	21
2.3.8 Impact on bought-in feed use	21
2.3.9 Impact on machinery requirements	22
2.3.10 Impact on labour use	22
2.3.11 Impact on non agricultural income	22
2.3.12 Impact on income	22
2.4 Problems experienced in meeting management conditions in each ESA tier	23
2.4.1 Lake District	23
2.4.2 Clun	24
2.4.3 Breckland	24
2.4.4 South Wessex Downs	24
2.4.5 Test Valley	24
2.5 Ease of compliance with management conditions	27
2.6 Satisfaction with payment levels	32
2.7 Changes to the nature of payment	36
2.7.1 Response to a 'two part tariff' (comprising a fixed entry payment plus annual payments/hectare)	36
2.7.2 Response to a signing-on fee	36
2.8 Attitudes towards the ESA scheme	37
2.8.1 General attitudes, advantages and disadvantages	37
2.8.2 Where participants learned about the ESA scheme	40
2.8.3 Main factors persuading farmers to join the scheme	40
2.8.4 Attitude to renewal and timing of renewal	41
2.9 Perceptions about general developments in the future	42
2.9.1 Likely future ownership and farm size changes	42

CONTENTS

2.9.2 Likely future changes in enterprises.....	42
2.9.3 Likely future interest in non-farming income	43
2.9.4 Expected changes in the nature of farm support over the next five years.....	43
2.10 Changes in ESA payment levels	45
2.11 Income effects.....	52
2.12 Comparison of income effects with uptake data	56
3 ESA non-participants	59
3.1 Survey design.....	59
3.2 Base features of non-participants	60
3.3 Awareness and attitudes to the ESA schemes	69
3.3.1 Eligibility for claiming financial support or qualification for agri-environmental..	69
3.3.2 Attitudes to ESA participation	69
3.3.3 Knowledge of farmers in the ESA scheme.....	70
3.3.4 Factors influencing potential participation	70
3.3.5 Expected contribution from ESA participation	71
3.4 Types of land on non-participants farms and potential interest in ESA entry	71
3.5 Perceptions about general developments in the future	72
3.5.1 Likely future ownership and farm size changes	72
3.5.2 Likely future changes in enterprises.....	73
3.5.3 Likely future interest in non-farming income	73
3.5.4 Expected changes in the nature of farm support over the next five years.....	74
3.6 ESA payment levels required for scheme entry	76
4 Summary of key findings of the participants and non-participants surveys and comparisons.....	81
4.1 Summary of key features and comparisons: participants and non-participants	81
4.2 Impact of changes in the ESA scheme on participants	82
4.3 Problem areas in existing ESA scheme.....	83
4.4 Impact of changing ESA payment levels.....	84
5 Comparing socio-economic impact across agri-environmental schemes	85
5.1 Introduction.....	85
5.2 Schemes examined	85
5.3 Socio-economic impact of the schemes	88
5.3.1 Farm Woodland Premium Scheme	88
5.3.2 ESAs	89
5.3.3 Countryside Stewardship Scheme	92
5.3.4 Tir Cymen.....	94
5.4 Potential impact of scheme withdrawal and payment reductions.....	95
5.4.1 Potential impact of scheme withdrawal	95
5.4.2 Potential impact of payment reductions	96
5.5 Comparison of evaluation findings	97
5.5.1 Farm inputs.....	97

5.5.2 Farm labour use	98
5.6 Farm income	98
5.7 Scheme withdrawal.....	99
5.8 Changes (reductions) in payment levels	100
6 Conclusions	101
6.1 Impact of discontinuing the scheme on current participants.....	101
6.2 Attitudes to the scheme and impact of changes in the basis of the scheme	103
6.3 Attitude to renewal	104
6.4 Impact of changes to payment levels.....	104
6.5 Non-participants.....	105
6.6 Effect on land not in the ESA scheme.....	106
6.7 Future intentions	107
6.8 Additionality and displacement.....	107
6.9 Concluding comments	108

Appendix 1: Questionnaires - (not included in this version)

Appendix 2: Questionnaire showcards - (not included in this version)

Appendix 3: ESA specific breakdown of some responses

Appendix 4: The future of agricultural policy in the UK: the future of the Common Agricultural Policy (CAP)

Bibliography

S1 Executive summary

S1.1 Objectives and methodology

This study has examined the socio-economic impact of introducing possible changes to the ESA scheme in the ESA regions II and III. It was mostly forward-looking and focused on informing MAFF's policy review process whether there has been any changes in the rationale for the ESA policy.

The main methodology involved the use of two personal surveys of scheme participants and non-participants in the ESAs supported by desk research and analysis of the socio-economic impact of agri-environmental schemes in the UK. The authors consider that the results have reasonable statistical significance and are a reasonable representation of the population of farmers involved in the ESA scheme¹.

S1.2 Impact of discontinuing the scheme (on current participants)

There would be no changes to farm ownership structure and very little change to the total area farmed. There would also be only limited change to cropping areas equivalent to a net reduction in the total grass area in these ESAs of about 7%. There would also be a 5% increase in the cereals area across the ESAs examined, mostly in South Wessex Downs and the Test Valley. In some cases (mostly in Breckland and South Wessex Downs) there would probably be some participants who would convert land from extensive livestock production systems back to arable cropping (ie, reverse practices adopted when joining the scheme).

Changes to yields would be much more widespread than cropping area changes. The main target for increased yields would be grass production (ie, increased forage production, mostly on improved pasture (temporary and some permanent pasture)) with these changes being concentrated in the Lake District and Clun. Limited increases in cereal yields would also be targeted, mostly in Clun, Breckland and South Wessex Downs. In output terms the impact would equate to increases of about 190,000 tonnes of hay/grazing grass and 4,275 tonnes of cereals. The majority of the increases in grass/hay production would be used as forage for livestock reared on the farms and would in effect be reversing one of the most significant impacts of joining ESA schemes (reduction of forage, especially hay production).

There would also a significant increase in the number of livestock kept (about an extra 55,000 and 3,000 sheep and cattle respectively). The majority of these changes would occur in the Lake District and Clun although there would be a net decrease in the numbers of livestock kept in Breckland as some participants would cease to operate livestock enterprises. In terms of stocking densities, these are likely to increase by roughly 4% in the Lake District and Clun and decrease by about 10% in Breckland.

¹ Limited survey bias in favour of large farms in the Lake District tended to overestimate impact on sheep and grass production enterprises. Allowance has been made for this bias in the conclusions drawn.

About half of the participants would make changes to their input use with the main changes being increased use of fertilisers and pesticides. Most of these changes would occur in the Lake District and Clun although where changes were to be applied to cereals about half of this would occur in South Wessex Downs and the Test Valley. Use of bought-in feed would also increase on about a third of participants farms. The majority of these changes would occur in the Lake District and Clun. There would also be a number of other 'unquantifiable' changes mostly changes to varieties grown, increased cultivations of grass/hay and changes in the time of sowing and cutting. These input, husbandry and feed usage changes would largely redress changes made to farming practices as a result of joining the scheme.

The impact on labour use would be limited with the main changes being less use of contractors, reduced hours for employed labour (part-time/casual and overtime for full-time staff) and more hours for family labour. Very few changes to the numbers employed would occur. The majority of these labour changes would occur in the Lake District and Clun.

The majority of participants would expect discontinuation of the scheme to have a negative impact on their total income (especially farmers in the Lake District and Clun). The likely net overall negative impact on farm income would however be limited with some participants aiming to offset the loss of ESA payments by intensifying farming activities. The net impact on gross income amounts to about +£60/hectare on the land where change would occur or about +£28/hectare across all of the land in the scheme. These positive income effects compare with the loss of ESA payments roughly equal to £113/hectare. This net impact does not take into account the wide divergence of possible impact across all participants and for some, removal of the scheme would have significant negative impact on income. Those expecting the impact on income to be negligible and/or positive were mostly those participants that would seek to compensate for the discontinuation of the scheme by intensifying production (targeting increased yields and livestock numbers and changes in the balance of enterprises) and mainly larger farms (those with turnovers over £160,000, over 100 hectares in size and in South Wessex and the Test Valley). Some of these participants had also committed a relatively small area of their farm into the scheme and derived a low proportion of total farm revenue from scheme payments (ie, under 5%). Conversely, those expecting decreases were mainly amongst participants with less flexibility, that did not think that they could increase yields/reduce input and feed costs significantly, those with relatively lower turnover levels and average size of farms, farms that had committed a significant part of their total farm area to the scheme and derived a significant proportion of their total farm revenue from ESA payments (ie, over 15%) - these are found more heavily concentrated in Clun and the Lake District.

S1.3 Attitudes to the scheme and impact of changes in the basis of the scheme

The current scheme is held in high regard by most participants. The financial contribution of scheme payments represents the main positive attribute to most participants, especially in the Lake District and Clun where they have enabled some to stay in farming. The positive impact on nature conservation and landscape is also important to a significant proportion of those in the scheme. Against this background, the majority of participants do not consider changes to the *basis* of how the scheme operates (eg, a mixture of a one-off entry payment plus area-based payments) to be beneficial relative to the current scheme. Where changes to the scheme

are considered necessary, these mainly relate to specific management prescriptions of some tiers and payment rates at the tier level (see below).

S1.4 Attitude to renewal

The vast majority of participants (85%-90%) would renew their current ESA contracts if offered on the current terms and payment rates. Those that would leave the scheme (if offered on the current terms and conditions) were those with negative attitudes towards the scheme and dissatisfaction with some tier management prescriptions and payment levels. The leavers would mainly be larger farms (over 100 hectares and over £160,000 annual turnover), located in the more arable dominated ESAs such as South Wessex Downs and the Test Valley. The Test Valley was also the ESA where the highest proportion of participants indicated that they would still reject staying in elements of the scheme (mainly the unimproved grass tier) even if payment rates were increased by 20%.

S1.5 Impact of changes to payment levels

If payment levels were reduced by one third only 30% of current participants would (reluctantly) accept such a cut and stay in the scheme. The willingness to accept such a cut in payment rates was highest in Breckland (nearly half would probably tolerate such a cut) and lowest in Clun where no-one would accept such a cut. The apparent irrational willingness to accept such a cut amongst a third of participants probably reflects a combination of factors including 'inertia' (having joined the scheme, some cannot be bothered to change), ability to offset the payment reductions by other activities (eg, intensification of farm enterprises on land not in the scheme) and joining the scheme for reasons other than simply the financial rewards (ie, those with keen interests in conservation). In contrast the very strong rejection of cuts in payment levels in ESAs such as Clun reflects the relatively greater importance and dependence on ESA payments as a source of income and limited options for mitigating the loss of payments.

At relatively low levels of payment reduction (eg, 5%) the majority of participants would remain in the scheme.

If payment levels were increased by 20% almost all (98.5%) would remain in the scheme. A small proportion would however still leave the scheme as indicated above relating to attitudes to renewal.

The level of willingness or otherwise to accept reductions in payment rates (and dissatisfaction with current and/or small increases in payment rates) is closely linked to specific 'problem' tiers.

Where farmers perceive certain tiers to be difficult (in both management prescription compliance and cost terms) to comply with and payment levels to be inadequate, any reduction in payment level would induce withdrawal from a tier. Each ESA has its problem tiers. In Breckland and the Test Valley there is one main problem tier respectively, in the Lake District and South Wessex Downs there are two problem tiers respectively and in Clun, there are three problem tiers.

S1.6 Non-participants

There are few differences between the nature and type of farmers located in ESA regions that have and have not joined the ESA scheme. The main differences are that non-participants tend to be more specialised (ie, more dependent on one enterprise than participants) and they are slightly less dependent on non-farm activities. Non-participants also tend to use higher average levels of inputs and bought-in feed than participants.

Motivation for possibly joining the ESA scheme would be largely driven by considerations of financial impact which would need to be reasonably positive. In general, the proportion of non-participants willing to accept the current payment rates was lower than amongst the participants illustrating the additional incentive that would be required to encourage significant numbers of current non-participants into the scheme. Alternatively the current management prescriptions would have to be relaxed. It is however important to note that some non-participants would be willing to accept current payment rates (eg, nearly a third for downland turf in South Wessex) and therefore some additional scheme participants could be attracted without increasing the levels of incentives. These non-participants tended to be mainly farmers who had limited knowledge about the scheme itself and/or thought that they were ineligible to join.

Whilst some non-participants endorsed positive impact on the environment as a benefit of joining, these were less prominent than amongst the participants suggesting that non-participants are generally those with less positive interest in conservation and the environment than those who have joined the scheme.

Whilst these features of non-participants reactions were broadly consistent across the ESAs examined, the highest concentration of those least interested in joining and/or requiring the highest levels of incentives were in South Wessex Downs.

S1.7 Effect on land not in the ESA scheme

The evidence relating to potential impact of withdrawing the ESA scheme on participants and differences between participants and non-participants suggests that some participants have intensified their farming activities on land not entered into the scheme. The most notable examples include:

- *increased use of commonland* - the average number of livestock grazed on commonland (much of which is not subject to an ESA agreement) by participants is higher than the average number grazed by non-participants.

Should the ESA scheme be discontinued, it is possible that the average number of stock grazed on commonland might decline/be reversed. Nevertheless, as one of the main potential impacts of scheme withdrawal on participants would be to increase livestock numbers (mainly fed from expanding on-farm forage production), it is difficult to ascertain (without further research) what will happen to stock distribution across all land that farmers have access to for grazing;

- *increased use of land outside the scheme both within/outside the ESA for grazing.* This has been one effect of scheme membership. It is however difficult to assess whether scheme discontinuation would lead to some ESA participants giving up the additional land taken on for grazing in recent years. Some participants indicated that they would decrease the area farmed and/or used for grassland but were too few to provide reliable weighted up results at the scheme level. Also the purchase/rent of additional land for grazing was a feature of Lake District farming practice prior to the start of the ESA scheme.

S1.8 Future intentions

Both participants and non-participants have very similar views and expectations for the future. The vast majority do not expect to make changes in ownership, enterprise mix, involvement in non-farm activities or the size of their farms over the next five years.

The majority of all farmers expect support levels to decrease and about a half expect to lose out as a result of this (the proportion of non-participants expecting to lose out was slightly higher than the proportion of participants).

The main change to the nature of policy expected² is increased linkage of policy support to compliance with positive environmental management prescriptions.

S1.9 Additionality and displacement³

Possible evidence of both additionality and displacement include:

a) Additionality

- The level of use of inputs and bought-in feed is higher amongst non-participants than participants. Also, if the scheme was discontinued, there would be increased use of inputs, hence reversing some of the scheme impacts.
- About half of the participants would increase yields and nearly half would increase livestock numbers if the scheme was discontinued. This intensification of production illustrates how scheme withdrawal would reverse important impacts of the scheme on farming practices, especially in relation to livestock numbers kept and production of hay and forage. Nevertheless, this is to some extent offset by the other half of the participants who could/would not alter their farming practices if the scheme was withdrawn. Many of these farmers were probably ones that made minimal changes to farming practices when they joined the scheme and therefore a reversion to a policy

² Expressed by a minority of both participants and non-participants but nevertheless, the second most significant policy change expected after reductions in support levels.

³ Examined from a socio-economic rather than environmental perspective.

environment in which no ESA scheme existed would simply represent a no change position for farming practices.

- Some participants in Breckland converted from (intensive) arable to more extensive livestock enterprises when they joined the scheme. Should the scheme be discontinued there would be reversion by some back to intensive arable production.
- Some participants most notably in Clun and the Lake District indicated that the scheme payments had enabled them to stay in farming. If the scheme had not been introduced such farmers would probably have left the sector with possible adverse effects on the maintenance of some landscape features (especially those that require minimal levels of care and grazing such as moorland).

b) Displacement/side effects

- Some farmers have sought to offset the management restrictions of the scheme by intensifying their use and grazing of land outside the scheme, especially commonland and by renting/purchasing additional land (some within and some outside ESAs). In the absence of the scheme some of this land might be sold, no longer rented and some livestock moved off commonland.

S1.10 Concluding comments

The results of this study, suggest that the net socio-economic impact of making changes to the ESA scheme, as applied to the ESA II and III regions would be limited. However, there would be a wide variation in the level of impact at the ESA and individual level.

Discontinuation of the scheme would induce a number of changes that would largely undo changes effected by farmers joining the ESA scheme over the last few years. This would result in intensification of mainly livestock (and some arable) enterprises, increased production of forage and more use of fertilisers and pesticides. Some land converted from arable to grass-based enterprises would also probably revert to arable. The main driving force for introducing such changes would be the desire to offset loss of revenue and income derived from ESA payments. Whilst some farmers would be able to initiate such changes (mainly larger farms, with some existing arable enterprises and a limited proportion of their farm area committed to the scheme), others have less flexibility and would find it difficult to offset the loss of ESA payments. These most vulnerable farms tend to be smaller farms (under 100 hectares and under £80,000 annual turnover), which have devoted a large proportion of their land to the scheme, or livestock dominated businesses and mostly located in Clun and the Lake District.

In respect of possible changes to the scheme, it is evident that the scheme is well thought of by most farmers. Very few current participants plan to leave the scheme if renewed on current terms and most would tolerate small decreases in payment levels. Problems with the scheme, where expressed are mainly related to specific management prescriptions and payment levels at the tier level and therefore the solutions for dealing with these problems also lie at the tier level.

Only in a minority of cases do tier level problems manifest themselves in broader levels of

dissatisfaction with the scheme (most notably in the South Wessex Downs, Test Valley and Clun) and it is here that the greatest risk of scheme leavers may occur.

Since the introduction of the ESA scheme there does not appear to be any change in the underlying rationale for the ESA policy. The majority of land 'so designated as being of national significance and distinct environmental interest' remains as such and the scheme has undoubtedly contributed to the maintenance of these attributes by encouraging farmers to enter the scheme and adopt more positive conservation farming practices. Any dilution of the scheme, via widespread reductions in payment rates or the extreme of discontinuation would pose a threat to a significant proportion of the land currently in the scheme as many current participants would intensify their farming activities. In addition, for some, the current scheme payments are a major contributory factor to them remaining in farming and their reduction/removal would probably result in some farmers leaving the sector. This may have adverse effects on the maintenance of some landscape features such as moorland in vulnerable ESAs such as the Lake District.

Finally, the ESA scheme exhibits many of the features that are likely to assume far greater importance within the nature of future agricultural policy in the EU. Therefore the rationale for retaining such a policy mechanism as an important component of UK agricultural policy for the future has considerable merit. It would provide a sound base for implementing broader EU-level policies and is understood and perceived positively by most farmers in the scheme.

1 Introduction

As part of its policy monitoring, evaluation and review process, MAFF has initiated an independent economic evaluation of the Stage II and III ESAs (which comprise eleven of the twenty two ESAs). This report examines the socio-economic impact focusing mostly on the potential forward looking impact of possible changes to the scheme.

1.1 Objectives

The underlying objective of the study is to inform the policy review process whether there have been any changes in the rationale for the ESA policy (whether components of environmental importance remain vulnerable to changes in farming practices).

The specific objectives of this study for each of the Stage II & III ESAs are to:

- a) estimate the potential changes to farming practices which may occur if agreement holders were to discontinue their participation in the scheme. This is to be achieved by assessing the probable changes in physical inputs (including labour) and outputs, financial outputs, fixed and variable costs and indicative net changes in farm incomes, apportioned by tier where possible, resulting from a relaxation of the prescriptions and removal of payments;
- b) assess whether the rationale for the scheme still pertains or whether new and previously unrecognised threats to the environment have arisen since the introduction of the schemes;
- c) assess ESA participants' willingness to rejoin the different tiers of the scheme at different (including the existing) payment levels; the purpose here is to obtain a measure of possible scheme uptake at different levels of payment;
- d) examine the mechanism of payment via flat rate payments and consider possible changes to the payment mechanism, including differentiated payments by criteria such as farm size, type and geography;
- e) describe any significant effects of the ESA scheme on land outside the scheme (in particular within the designated ESA boundaries but also outside) such as the transfer of stock to newly rented land to enable compliance with ESA stocking densities, or trends in the purchase of inputs such as forage, and quantify these as far as possible;
- f) assess farm managers' views about the likely future impact of the scheme on productivity and landscape features;
- g) assess farm managers' long-term intentions with regard to participation in the scheme, and their views on which restrictions under the scheme would have the greatest impact on their participation.

1.2 Research targets and approach

a) Research targets

With the exception of specific objective (b), the research objectives focus upon the impact of possible changes to the ESA scheme on/of **current participants**. However, non-participants located in ESAs were also studied principally for:

- comparison purposes. Some of the evaluation objectives are to assess changes in behaviour (and attitudes) among participants which are attributable to ESA membership. The behaviour of 'control' groups (non-participants) is a useful (though

not conclusive) indicator of what participants would have done had they **not** joined the ESA scheme;

- *as a target market.* As current participants do not represent all farmers in ESAs, current non-participants represent future targets for ESA membership. Also, even to maintain current levels of membership will usually require some additional members to replace those who leave. Attracting these potential new members may be an easier or more difficult task to achieve than retaining existing members.

The primary methodology used to assess impact on the participants and non-participants was farmer surveys: one of participants and one of non-participants.

b) Research focus

In contrast to most evaluations which are essentially backward-looking and measure actual performance against a baseline, the requirements of this evaluation are mostly forward-looking.

This necessitated the design of questionnaires that included questions on past/present practice and future intentions. The questionnaires were therefore long and complex (see appendix 1).

In addition, the survey base for the research was supplemented with desk research mainly through an examination of the socio-economic impact of other agri-environmental schemes in the UK. The main rationale for including this element of research was to make and use comparisons with historical changes induced by the introduction and adoption of ESA conditions on farming practices and to provide this project with a source of information that contributed to the understanding of possible future impact.

c) Policy environment

Since the creation of the first Stage II ESAs in 1988, there has been a number of significant reforms to the CAP, particularly the introduction of set-aside and the arable area payments scheme in 1992, the introduction of payment ceilings and maximum stocking densities for beef and sheep in 1993, and the introduction at the same time of individual farm limits for ewe premium claims. Since the creation of the Stage III ESAs in February 1993 further changes have occurred (eg, the phased implementation of the 1992 reforms, the application of the GATT Uruguay Round commitments to reduce protection and the use of export subsidies and to increase EU market access). In addition, there are considerable pressures for further changes in the nature of the CAP (eg, Eastwards expansion of the EU, next GATT Round commitments), and extension of reforms to currently 'unreformed' sectors such as dairy. It is inevitable that further reforms will occur in the next few years. Each of these changes has restricted/will further restrict farmers' freedom to manoeuvre, so that the implications of joining the ESA scheme now and/or in future will be somewhat different from the implications at time of joining, especially for those in stage II. Hence, the implications of leaving the scheme would *not* simply be the reverse of joining.

This changing policy environment was therefore considered to be an important issue to explore in the project and hence the research asked farmers a number of questions about their perceptions of future policy direction and the implications for their farming practices and membership of agri-environmental schemes such as ESAs. To assist the reader in placing the

forward looking elements of the survey research in context, an overview of key pressures, issues and likely future direction of agricultural policy is presented in appendix 4.

1.3 Report structure

In structuring the report we examined:

- in section 1, introduction (this section);
- in section 2, the evidence emerging from the ESA participants survey;
- in section 3, the non-participants survey;

These are summarised and compared in section 4.

- in section 5: a comparison of socio-economic impacts of agri-environment schemes in the UK;
- section 6: conclusions.

2 ESA participants

2.1 Survey design

The main features of the survey design were as follows.

a) Interview method

In accordance with the requirements of MAFF, all interviews were conducted personally with ESA participants. This facilitated the need to ask a number of questions for which feedback and explanation could be given, the asking of ESA tier-specific questions for which it was difficult to identify prior participation in tiers by farmers and for the collection of significant amounts of both technical and financial information.

b) Stratification and size of sample

The sample size and stratification criteria were agreed at the outset with MAFF. A total of 280 participants were required to be surveyed so as to provide survey results that were broadly representative of scheme participants in the ESA II and III regions and to provide results that had reasonable statistical significance. This sample was stratified to give a reasonable representation of the five ESA regions to be examined, farm type, farm size and tiers within each ESA scheme. MAFF provided a base list of participants in the scheme and candidates for interview were selected on a random basis from this. A breakdown of the interviews achieved is shown in Table 2.1 and Table 2.2. This shows that the responses and interviews achieved were in line with the targets set and were broadly representative of the tiers in each ESA.

Table 2.1: Interviews achieved relative to breakdown of ESA participants

ESA	Total number of agreements	Total number of 'base' list population provided by MAFF	Target number for interview	Interviews achieved
Lake District	1,039	283	95	101
Clun	215	192	60	62
Breckland	128	122	50	43
South Wessex Downs	147	70	50	50
Test Valley	49	41	25	25

In total, 401 participants were contacted in order to achieve the target number of interviews of 280. This represented a very good response rate (70%) relative to the 'norm' for random sample surveys. Where limited incidence of refusal or failure to interview occurred the main reasons given were a lack of time available (given by 40% of those refusing to be interviewed), especially as the timing coincided with a busy lambing period (most notably in Clun and the Lake District), no reply after three separate attempts to contact (25% of the failures) and the base information relating to participants (addresses, telephone numbers) being incorrect (15% of rejections). Therefore, the actual response relative to those farmers contacted was about 80%.

The average length of interview was 56 minutes.

c) The questionnaire and timing

The survey was conducted between the last week in March and the third week in April 1997 to a questionnaire designed in consultation with MAFF. A copy of the questionnaire is shown in appendix 1. The main subjects addressed were:

- base information about the farm (eg, age of farmer, enterprises, turnover, size of farm, inputs used, outputs, non farm activities);
- possible impact of withdrawal of the scheme on farm and non-farm enterprises;
- problems experienced in meeting management conditions of each ESA tier;
- attitudes and satisfaction with the scheme;
- attitudes to renewal and some changes to the nature of the scheme;
- perceptions about general developments in the future;
- responses to changes in the level of payments.

2.2 Base features of participants

a) Number of tiers per participant

Table 2.2 shows a breakdown of the participants interviewed and the number of tiers taken up. The average number of tiers that each participant has taken up is 2.9. This varies between ESA with the Lake District and South Wessex Downs showing the highest average and the Test Valley the lowest average. This is however, not surprising given the number of tier alternatives available to farmers in each ESA (eg, 9 in the Lake District and 3 in the Test Valley).

Table 2.2: Breakdown of participants by ESA and tier

Number of tiers	Lake District	Clun	Breckland	S Wessex	Test Valley	Total
1	4 (256)	4 (5)	31 (90)	7 (29)	21 (36)	62 (416)
2	26 (307)	25 (41)	9 (29)	8 (28)	2 (10)	76 (415)
3	36 (258)	16 (105)	2 (7)	18 (43)	2 (3)	74 (416)
4 or more	35 (218)	17 (64)	1 (2)	17 (47)	0 (0)	70 (331)
Average number of tiers	3.2	2.9	1.4	3.1	1.2	2.9
Total number interviewed	101 (1,039)	62 (215)	43 (128)	50 (147)	25 (49)	281 (1,578)

Note: figures in brackets = all in the scheme at December 1996

b) Year of ESA entry

Overall, 23% of participants entered into the ESA scheme between 1988 and 1992 and 75% entered after 1993 (the remaining participants did not know/could not remember when they entered the scheme). Of the five ESAs examined the majority of participants in Clun (81%) and

⁴ For most results relating to the participants, these have been weighted up to all in the scheme according to the breakdown of participants in each ESA. This is summarised in Table 2.2.

Breckland (63%) entered in the period 1988-92, whilst for the Lake District, South Wessex and the Test Valley, 90%, 94% and 72% respectively, entered in/after 1993.

c) Involvement in decision to join the scheme

In the majority of cases, the participants themselves were wholly or partly responsible for joining the scheme (95%). This level of involvement was broadly consistent across all of the ESAs with the exception of Breckland where 16% of the participants indicated that they had not been involved at all in the decision to join the ESA scheme.

d) Area farmed

A breakdown of the area farmed and its main uses is shown in 3. Of the nearly 352,000 hectares of land farmed by participants about 80% is down to grassland.

Table 2.3: Land usage of participants' farms

Usage	Weighted up area (ha) all participants	%
Winter cereals	31,440	8.9
Spring cereals	5,280	1.5
Oilseed rape	1,315	0.4
Sugar beet	5,460	1.6
Potatoes	1,780	0.5
Other arable	8,460	2.4
Temporary grass	11,880	3.4
Permanent grass	117,290	33.3
Rough grazing	151,090	42.9
Woodland	13,310	3.8
Set-aside	4,500	1.3
Total	351,805	100.0

Base: 1,578 participants

The average area farmed by all participants is approximately 225 hectares, ranging from an average of 109 hectares in Clun to 341 hectares in Breckland (Table 2.4). In some of the ESAs however, the average area farmed is skewed by the presence of a few very large farms (eg, Lake District⁵, Breckland and the Test Valley). When looking at the median area this is 115 hectares for all participants within a range of 70 hectares in Breckland to 240 hectares in South Wessex.

⁵ This over-representation of larger farms in the Lake District is confirmed by the ESA project office records which show that 74% of farms in the ESA scheme are under 100 hectares, compared to 43% in the sample.

Table 2.4: Area farmed by participants in ESAs

Numbers farming in each size category						
Area	Lake District	Clun	Breckland	S Wessex	Test Valley	Total
Under 20ha	8	4	13	5	7	37
20-49ha	11	16	7	1	4	39
50-99ha	23	13	2	4	3	45
100-199ha	30	21	7	14	4	76
200 plus ha	26	8	14	26	7	81
Average area farmed (ha)	231.1	109.3	341.3	261.2	188.6	225
Median area farmed (ha)	112.9	81.0	72.0	240.0	81.0	115

Note: Three respondents in the Lake District did not provide an answer to the question.

e) Land ownership

Forty three per cent of participants own all of the land they farm whilst for 16%, all land farmed is rented. For the remainder, farmed land is a mix of owned and rented (1). Forty six per cent of the participants rent some land on a long term lease basis and 18% rent on a short term basis. Outright ownership is greatest in Breckland and Clun (where 74% and 65% of participants own their farmland totally) and lowest in the Lake District where only one third of participants totally own the land they farm.

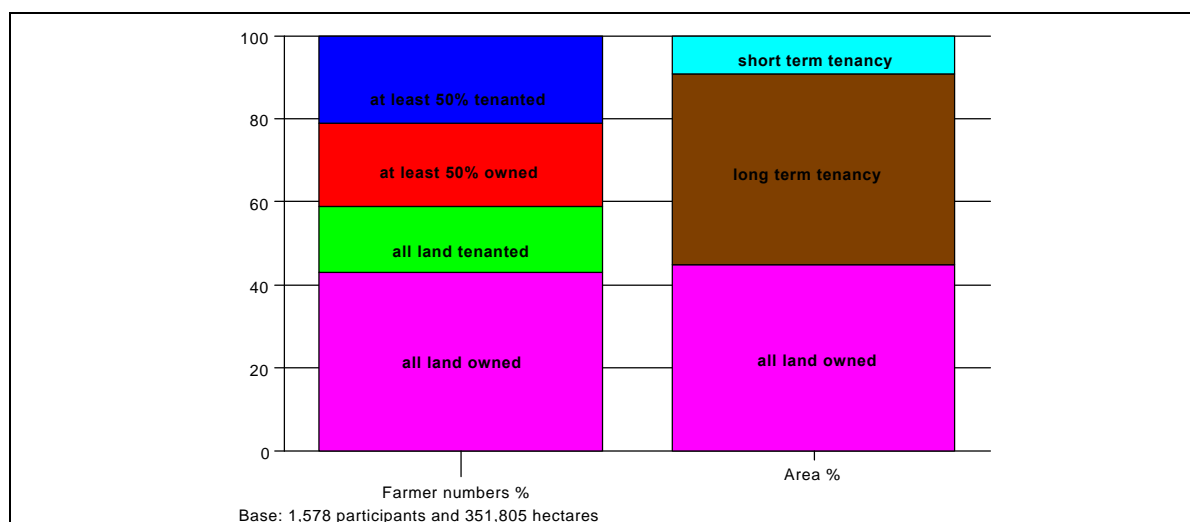


Figure 2.1 Ownership of land farmed by participants

Overall, about 159,000 hectares of the participants farmed land (45% of the total) is owned with about 192,000 hectares under tenancy arrangements (163,000 hectares of which are under long term tenancies).

f) Proportion of land farmed within the ESA boundaries and within the ESA scheme

Over 80% of all land farmed is in the various ESA boundaries. This varied between ESAs, within a range of 41% in the Test Valley and 91% in the Lake District. In terms of land entered

into the ESA scheme and subject to a **current** ESA agreement, 73% of the total area farmed by all the participants is in ESA agreements. Weighting up the survey responses to all participants in the scheme this equates to 257,000 hectares. The proportion of farmed land in agreements varied across the ESA examined from 23% in Breckland to 99% in Clun. The largest area subject to ESA agreements is however, in the Lake District (the weighted up area for the Lake District suggests a total eligible area of about 217,000 hectares of which 205,000 hectares are in the scheme). Whilst this total eligible area is very close to the actual eligible area, the area subject to ESA agreements is overstated, as the actual area is about 123,000 hectares (Source: MAFF).

g) Reasons for excluding land from ESA agreements

Seventy six participants gave reasons for not entering some land into the scheme. The main reasons cited were:

- not eligible for inclusion (25);
- not suitable for inclusion (15);
- didn't want to commit all land (15);
- not financially attractive enough (10: Table 2.5).

Table 2.5: Reasons for excluding land from ESA agreement

Reason	Number	%	Notes
Not eligible	25	33	Distributed across all regions, but highest incidence in Lake District and lowest in Clun
Not suitable	15	20	Highest concentration in Breckland
Did not want to commit all land	15	20	Highest concentration in Breckland
Not financially attractive enough	10	13	Mainly in Breckland and Test Valley
Acquired land after signing agreement	5	7	Mainly in Lake District
More suitable for intensive grass or arable production	2	3	Breckland only
Other reasons	4	4	eg, do not own the land
Total	76	100	

h) Main land use/enterprise mix

A broad profile of crops and enterprises is shown in Figure 2.2. About 12% of participants are largely arable farms and 7% mixed farms (about 50% arable, 50% grass). These are almost all located in Breckland, South Wessex and the Test Valley. About two thirds of the participants are entirely grassland and 12% largely grassland. These latter two grassland dominated uses are concentrated in the Lake District and Clun.

A breakdown of livestock enterprises and numbers kept is shown in Table 2.6. This highlights the dominance of sheep enterprises in the ESAs (kept on 80% of all farms), especially in the Lake District and Clun. The average (mean) flock size was about 1,200 sheep per farm keeping sheep. Where dairy and beef cattle were kept (dairy mainly in the Lake District and South Wessex, beef mainly in the Lake District and Clun) the average herd size was 100 and 112

animals/farm respectively⁶. For a more detailed breakdown of livestock information see Appendix 3.

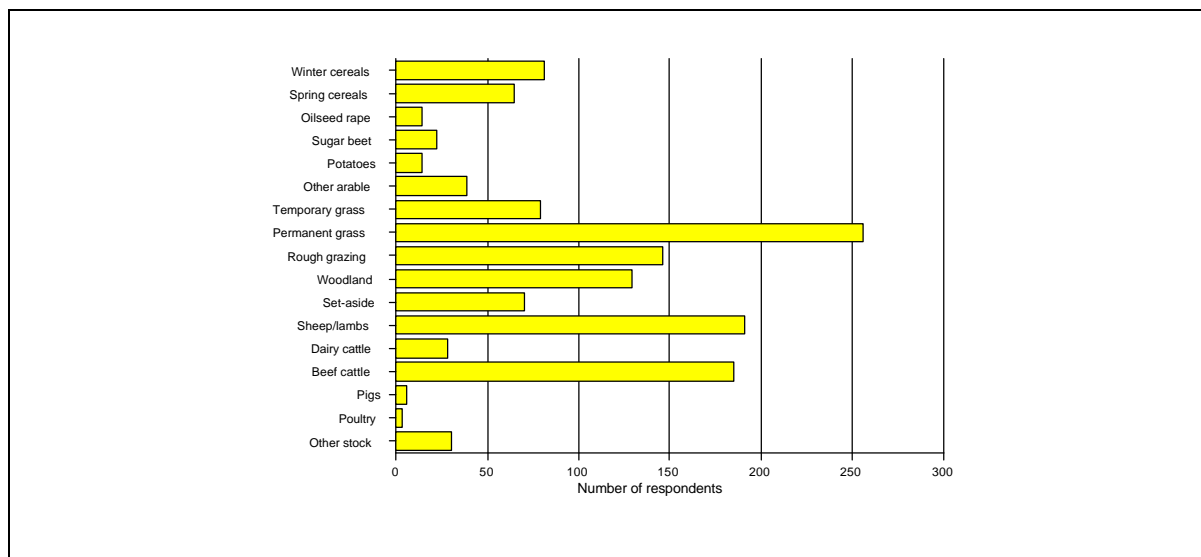


Figure 2.2 Profile of main enterprises amongst ESA participants

Table 2.6: Livestock numbers on participants farms

Livestock	Total numbers
Lowland ewes	110,960
Upland/hill ewes	660,100
Lowland lambs	166,350
Upland/hill lambs	529,800
Cows/heifers in milk	19,350
Calves for replacement	10,250
Suckler cows for beef	53,650
Other cattle	70,750
Sows and gilts	19,400
Other pigs	350,500
Table poultry	700
Laying birds	41,000

Base: 1,452 participants

i) Use of Common Land

Thirty nine participants grazed livestock on common land. These were almost all located in the Lake District (37), although one respondent respectively in Clun and the Test Valley grazed common land. Almost all grazed sheep only with only two grazing cattle and sheep and one

⁶ For the main ESA examined, the Lake District, the weighted up livestock numbers reasonably reflect actual numbers in the ESA, with the exception of sheep numbers which are probably overstated by about 200,000.

(Test Valley), grazing cattle only. The average number of sheep grazed on common land was 742 (an average of 731 in the Lake District and 2,000 in Clun). For almost all farmers, the use of common land was as shared grazing rights, with only three respondents having sole grazing rights. Where rights are shared, the average number sharing the rights was thirteen farmers.

Of those grazing common land, eight indicated that all of this land, and another two indicated that some of the land, was covered by an ESA agreement (all in the Lake District). For the remainder, twenty seven indicated that none of the common land was in an ESA agreement and two did not know/did not answer the question. The main reasons cited, (three respondents offered no reasons), for common land not being in an ESA agreement were:

- cannot get everyone to come into the agreement (15);
- stocking rate requirements are too strict (7);
- no-one was asked to enter the scheme (2);
- MAFF is perceived to have not responded to a request to enter land into the scheme (2).

In total the area of common land recorded as grazed by those interviewed was over 50,000 hectares. However, it is likely that this included a significant degree of double counting with many referring to the same area as others. The reader should note that the actual amount of common land in the Lake District is 67,330 hectares of which 16,392 hectares are in ESA agreements. The total number of stock grazed (weighted up to all ESA participants) is about 285,000 sheep⁷, 220 cattle and 200 horses. There is no concentration of stock grazing numbers by flock/herd size with the distribution split roughly one third each between flock/herd sizes under 400, from 400 to 849 and over 900.

j) Input usage

Table 2.7 shows details of the main inputs used on ESA participants farms in the last year. The main inputs used are, not surprisingly given to the dominance of livestock and especially sheep enterprises, livestock and feed purchases. Where inputs such as fertiliser and pesticide are purchased most are in the regions where arable farming is more important (eg, South Wessex Downs and Breckland). These regions are also the ones where greatest use of contractor services occur. Examination of the average level of purchases per participant⁸ (mean and median) shows that the average (mean) figures are somewhat skewed upwards because of the purchases of a limited number of larger farms, with the median figures probably giving a more representative average value of purchases.

⁷ Weighted up this relates to 386 farmers, 381 of which are in the Lake District. The authors consider that this probably overstates the actual numbers grazing common land. For the 39 survey respondents, the number of sheep grazed was about 28,500. Based on information provided by local MAFF officers, the authors consider the weighted up numbers to be over-estimated with actual numbers of sheep being nearer 200,000.

⁸ Per participant making a purchase **not all** participants.

Although livestock enterprises and associated input expenditure (ie, feed, livestock) dominated in the Lake District and Clun, these ESAs exhibit the lowest average (median) levels of expenditure for these inputs, with the highest levels recorded in South Wessex Downs and the Test Valley. These regions (plus Breckland) were also where the highest levels of median expenditure on pesticides and fertilisers occurred, in comparison to substantially lower levels of average expenditure in the Lake District and Clun (Table 2.7).

Table 2.7: Direct costs of participants in last year (£ - weighted up to all in the scheme)

Item	Total expenditure in last year (£ million)	Average expenditure for all who undertake expenditure	Median value of expenditure (£) for all making purchases	ESA specific comments
Livestock purchases	11.7	9,512	3,960	Median value highest in Test Valley (£6,900). Lowest in Breckland (£2,500).
Compound feed	11.0	8,623	3,580	Highest median value in Test Valley (£12,670). Lowest in Breckland (£490).
Protein concentrates	4.2	8,759	2,080	Median range was £500 in Breckland to £7,750 in South Wessex.
Hay/other feed	0.26	3,647	1,490	Median range was £800 in Clun to £8,400 in Test Valley.
Fertiliser	7.7	5,600	2,310	Polarised median usage. £14-15,000 in South Wessex and Test Valley to £1,980 in Lake District and £1,280 in Clun.
Pesticides	5.2	6,413	290	As fertiliser. Very high medians £15-16,000 in South Wessex, Test Valley and Breckland to £88 in Lake District.
Fuel, lubricants	4.14	3,030	1,730	Distributed broadly across all ESAs, but highest average (main and median) values in Breckland, South Wessex and Test Valley
Contractor services	4.04	3,370	1,420	Highest median value in South Wessex (£5,850). Lowest in Test Valley (£750).

Note: Information based on responses to input usage questions in the Survey.

k) Non-farming income

Approximately half of the participants (52%) have sources of non-farm income. This is broadly consistent across all of the ESAs although the highest proportion of farmers with non-farm income sources were found in the South Wessex Downs (64%) and the lowest proportion were in the Lake District (47%). A breakdown of the main non-farming activities is shown in (Table 2.8).

Table 2.8: ESA participants: non-farming income types unweighted (ie, survey results)

Type	Number	% of all participants	Comments
Off-farm employment	40	14	Broadly distributed across all ESAs (highest in Breckland)
Accommodation	40	14	Mainly in the Lake District
Contracting	17	6	Highest incidence in Clun
Leisure/Sports	17	6	Mainly in Breckland, South Wessex and Test Valley
Camping/Caravanning	11	4	Mainly in the Lake District (and Clun)
Forestry	11	4	Distributed across all ESAs
Farm Shop	11	4	Mainly Lake District and Clun
Haulage	5	2	Mainly Breckland
Processing	3	1	
Others	6	<u>2</u>	

Note: Some participants had more than one source.

Of the participants deriving income from non-farmed sources, 79% provided indicators of the range of income derived from this source (ie, 21% refused to provide answers). Within this group, the average annual income from non-farming income was about £38,500. However, this average is heavily influenced by 4 farmers who earn very large non-farming incomes (2 in Breckland, 1 in South Wessex and 1 in the Test Valley). If these farmers are removed, the annual average non-farming income was £9,500 with a range of £6,000 in Clun to £16,350 in the Test Valley.

l) Employment on the farm

A total of 6,780 full-time equivalent staff are employed on all farms in the ESAs surveyed (weighted up from the survey of 281 participants). Key features of the employment were:

- about 80% of employment is full-time and 85% of this full-time staff are family;
- non-family staff dominate part-time and casual employment;
- the highest concentration of family employment (both full and part-time is found in the Lake District and Clun with the highest concentration of part-time and casual staff found on farms in the South Wessex Downs and Test Valley);
- the average number of employees per participant farm was 4.3 within a range of 2.3 in the Lake District and Clun to 22.3 in Breckland. However, these average figures are somewhat skewed by the presence of four participants interviewed (two in Breckland, one in South Wessex and one in the Test Valley) which are large employers (also the four participants referred to earlier that have major non-farming business activities). If

these participants are taken out of the analysis, the average number of employees is 2.8 within a range of 2.3 in the Lake District and Clun to 4.9 in Breckland.

m) Main enterprises

Table 2.9 examines the importance of more than one enterprise in contributing to participants incomes. This shows that:

- the great majority depend on two or more farming enterprises as their main sources of income;
- 9% are mainly dependent on income from non-agricultural enterprises. These are mainly found in Breckland, Clun and the Test Valley where 26%, 15% and 44% respectively of participants in each ESA derive most of their income from non-agricultural sources;
- a single enterprise dominates income generation activities for 21% of participants. These were found mainly in the Test Valley (mostly arable dominated) and the Lake District and Clun where sheep enterprises dominate;
- the most common double enterprise mix was predictably beef and sheep especially in the Lake District and Clun. In Breckland the most common mix was arable and beef, in South Wessex arable and dairy and in the Test Valley arable and sheep;
- the ESA payments are perceived to account for an average of about 11% of total gross farm revenue across all participants. This average varied across the ESAs, from only 4% in the Test Valley rising to 12% in the Lake District and 15% in Clun. For farms under 50 hectares, the ESA payments were perceived to account for an average of about 14.5% of total farm revenue (within a range of 6.5% in South Wessex to 16.1% in the Lake District). For farms over 50 hectares, the average contribution to total farm revenue accounted for by the ESA payments was 10.2% (within a range of 1.3% in the Test Valley to 15.7% in Clun). A more detailed breakdown of enterprise contributors is given in Appendix 3.

Table 2.9: Main enterprise contributions to total household income (weighted by to all participants)

	Number of participants	%
Outside farming	146	9
One farming enterprise	338	21
Two farming enterprise	853	54
Three farming enterprises or more	241	16
Total	1,578	100

n) Ownership/land manager type

About two-thirds of the respondents are in family partnerships and a further quarter are sole proprietorships. The balance was accounted for by limited companies (5%) and other structural forms (eg, trusts). The limited companies are mainly located in Breckland, South Wessex Downs and the Test Valley.

o) Age of farmer

The age profile of the ESA participants is shown in Figure 2.3. The majority (57%) are in the range of 45 to 65. Between the ESA regions the age profile of those in the Lake District tended to be older than the other ESAs. This is a slightly older profile than among farmers as a whole - a recent related survey of farmers in Great Britain found that 50% were in the age range 45-65, 45% were under 45 and only 5% over 65.

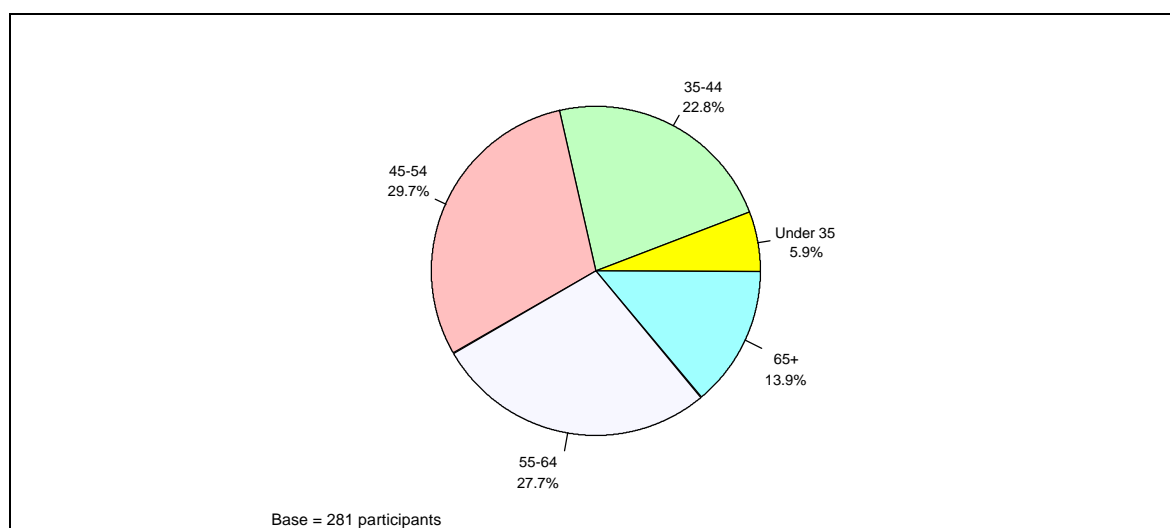


Figure 2.3: Age profile of farmers in participants survey

p) Membership of organisations

A profile of participants membership of various organisations is shown in 10.

Table 2.10: Membership of organisations

Organisation	% of all participants
NFU/FUW	73
Country Landowners Association	30
FWAG	6
RSPB	8
National Trust	13
Country Wildlife Trust	6
Local hunt	29
Tourist Authority	5
Countryside Movement	4
Game Conservancy	3
BFSS	2
Greenpeace	1
CPRE	1
WWF	1
CPSA	1
BASC	2
None of the above	11

The main organisations which participants are members of are Farmers Unions and/or the Country Landowners Association.

q) Farm/business turnover in last twelve months

The range of business turnover in the last twelve months of the participants is shown in 4. This shows a broad range of turnover levels although the majority (62%) were under £120,000. The smallest business turnover level (under £40,000) were most numerous in Clun (44% of all participants in Clun) and those in the range £40,000 to £120,000 were most numerous in the Lake District (51% of participants in the Lake District). The highest concentration of those with turnovers over £160,000 were found in Breckland and South Wessex Downs (the majority of respondents in the Test Valley refused to give turnover range information).

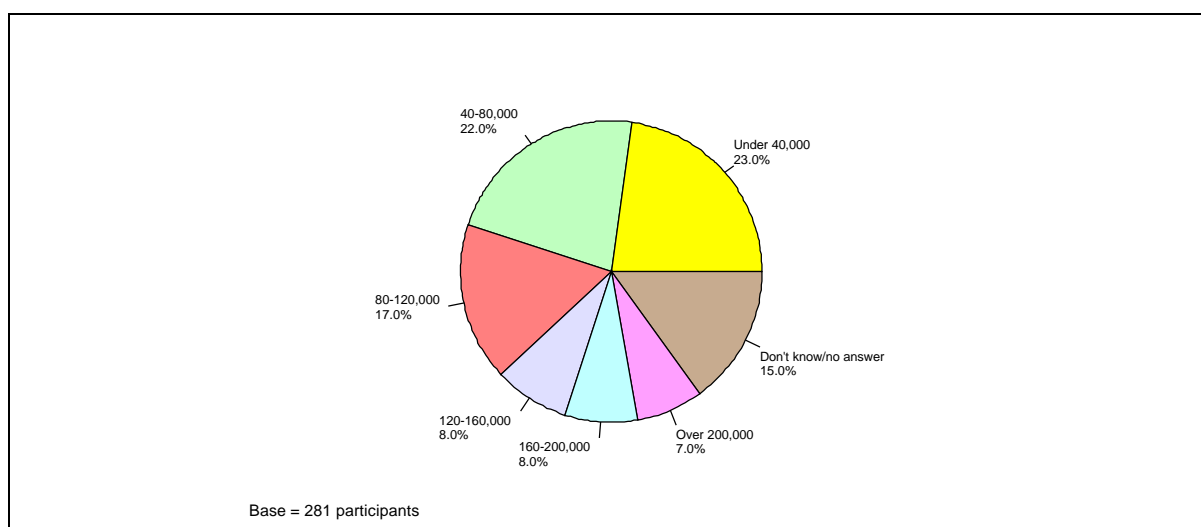


Figure 2.4: Turnover of business in last financial year: participants

2.3 Possible impact of ESA scheme withdrawal

The scheme participants were then asked a series of hypothetical questions about their likely future behaviour on the farm if the ESA scheme were to end in one year's time⁹.

2.3.1 Area farmed

The vast majority of ESA participants (87%) indicated that they would make no change to their farmed area. Five per cent indicated that they would increase the area farmed, 4% indicated that they would decrease the area farmed and the remaining 4% were 'don't knows'. The greatest number of those indicating an increase in area were in the Lake District but this related to only 5 participants surveyed (if grossed up to all participants in the Lake District is equivalent to about 50). The Lake District also provides the greatest number of those who would decrease their area (5 respondents).

In terms of the overall impact on area farmed, those planning to decrease the area farmed largely cancelled out those planning to increase the area farmed. The only ESA region where the net effect produced any significant result was in the Lake District where the results

⁹ The reader should note that in most cases the answers discussed are the weighted up responses to include all participants in the ESAs surveyed.

suggested a likely 1,080 hectare decrease in the total area farmed between the 10 farms indicating changes. If grossed up to all participants this equates to a decrease of about 10,500 hectares. The reader should however, note that the very small number of survey respondents indicating changes make such weighted up results unreliable.

2.3.2 Ownership

The ownership of the farm would remain unaltered for almost all farms (97%). Those indicating a possible change were mainly in the Lake District. About half of these indicating a possible change (1.5% of all participants) of ownership would sell their farm and the other half would see another family member take over.

2.3.3 Area devoted to crops

Eighty two per cent of participants would not alter the area planted to crops if the ESA scheme was discontinued in a year's time. Of the remaining participants, 14% would make changes and the balance (4%) were 'don't knows'. The highest incidence of change is likely to be in Clun and South Wessex Downs. The lowest incidence of change was recorded in the Test Valley and in the Lake District (Table 2.11).

The net effect of the likely changes in crop areas is limited when compared to the total crop/grass area of all the farms in the ESA (about a 5% decrease in total area, mostly grass). If the area changes indicated by the survey respondents are weighted up to all of the participants the **net** effect would be a decrease in crop/grass area of about 19,000 hectares. The main impact would be seen in the Lake District where about 19,500 hectares of grass would probably be taken out of grass production. In terms of arable crops, the impact would be small (an increase of about 1,800 hectares of cereals across all the ESAs of which 60% would be in South Wessex). However, these calculated weighted up changes are based on very low numbers of respondents indicating changes and are therefore not reliable/statistically significant.

Table 2.11: Changes in crop areas if ESA scheme withdrawn in one year's time: by ESA (unweighted numbers)

	Lake District		Clun		South Wessex Downs		Breckland	
Total number indicating change	11		21		25		14	
Increase/start growing	7	Mostly grass	15	Mostly grass and some cereals	22	Mostly cereals	8	Mostly cereals
Reduce area	3	All grass	4	All grass	3	All grass	5	All grass
Don't know/not answered	1		2		0		1	
Average area increase (ha) (where given)	5.8		13.0		40.4		7.4	
Average area decrease (ha) (where given)	641.2		18.7		111.3		41.5	
Net effect on crop area (ha)	-1,888.5		+93.5		+191.8		-136.5	

Note: Due to small numbers of responses to each question the results have not been weighted up to all participants. Also, data for the Test Valley is not presented due to very low numbers indicating changes.

2.3.4 Impact on crop yields

Farmers response to questioning about whether they would seek to compensate for the loss of ESA payments by increasing yields were split roughly 50% would aim to increase yields, 45% would not and 5% didn't know. Those who would aim to increase yields were found across all ESAs although the greatest number were in the Lake District (50 respondents). The ESA where the greatest proportion of all participants would seek to increase yields was Clun (60% or 37 respondents) and the ESA with the lowest proportion of participants who would seek to increase yields was the Test Valley (24% or 6 respondents).

The main 'crop' for which yield increases would be sought is grass (90% of those indicating they would seek an increase in yield). This response was consistent across all of the ESAs, although the highest numbers were in the Lake District and Clun. The only other crop for which a reasonable proportion of those indicating that they would seek yield increases was cereals, (1% or 24 respondents). These were mainly located in Clun, Breckland and South Wessex Downs.

The level of yield increases targeted varied from 0-5% for some, to over 50% for others (about 5% respectively of those targeting yield increases). Nearly 40% did however, feel unable to

suggest a target level of yield increase. Where levels of yield increase were nominated, the average increase suggested was 20-30% for grass and about 6-8% for cereals. These increases would be applicable (if grossed up to all ESA participants) to an approximate area of about 58,000 hectares of grass and 5,000 hectares of cereals.

2.3.5 Impact on input costs

Participants were then asked if they might aim to compensate for loss of ESA income by reducing input costs. The responses were:

- about half of all respondents do not believe that input costs could be reduced or yields increased (the highest number of farmers making this statement were in the Lake District, although the greatest number relative to total participants in an ESA were in the Test Valley);
- the other half perceive that input costs could be reduced/yields increased. The highest concentration of respondents making this statement (absolute numbers and relative to numbers in the individual ESA) were in the Lake District and Clun.

Where changes in input usage were considered to be possible, the main findings were (weighted up to all participants):

- *fertiliser*: an increase in usage of about 17,000 tonnes across all ESA participants, of which 85% would be applied to grass (mostly in the Lake District and Clun). The balance would be applied to cereal crops (about half in Clun and the rest roughly equally between South Wessex and Breckland);
- *pesticides*: an increase in expenditure of about £300,000 per year across all ESA participants. About two-thirds of this increased expenditure would be used to spray grass and one-third on cereals. The regional breakdown of this increased usage is similar to that for fertilisers;
- *other input changes*: a number of other 'unquantifiable' changes were suggested by some participants. These included changes to varieties grown (17% of participants indicating input changes or 9% of all participants; mainly for grass and winter cereals), use of better quality seed (25% of participants indicating change in input use: almost all grass), increased cultivations (17% of participants indicating input changes; almost all grass) and changes in the time of sowing (3% of participants indicating input changes; grass and cereals).

2.3.6 Impact on livestock numbers

Forty four per cent of participants indicated that any withdrawal of the ESA scheme would impact on livestock numbers. Eighty five per cent of these were located in the Lake District and Clun. A breakdown of the responses by ESA are shown in Table 2.12.

Table 2.12: Changes to livestock numbers if ESA scheme withdrawn in one year's time: by ESA (unweighted)

ESA	Lake District		Clun		Breckland		S Wessex Downs		Test Valley	
	Number	Comments	Number	Comments	Number	Comments	Number	Comments	Number	Comments
Total number indicating change	62		39		11		22		5	
Increase/start keeping	54	37 sheep 16 Beef	35	25 Sheep 15 Beef	6	2 Sheep 3 Beef	18	7 Sheep 8 Beef 3 Dairy	4	Beef
Reduce/stop keeping	5	4 Sheep 1 Beef	3	2 Sheep 1 Beef	5	1 Sheep 4 Beef	4	3 Sheep 1 Beef	1	Beef
Don't Know (+/-)	3		1		0					
Number of additional stock (Where indicated)	9,346	9,080 Sheep 266 Cattle	3,330	3,165 Sheep 165 Beef	31	All beef	916	750 Sheep 149 Beef 17 Dairy	252	Beef
Number of reduced stock (Where indicated)	2,721	2,701 Sheep 20 Beef	193	112 Sheep 81 Beef	1,408	1,250 Sheep 158 Beef	770	726 Sheep 44 Beef	13	Beef
Net change in stock numbers	+ 6,625	+ 6,379 Sheep + 246 Beef	+ 3,237	+ 3,053 Sheep + 184 Beef	-1,377	-1,250 Sheep -127 Beef	+ 146	+ 24 Sheep + 125 Beef + 17 Dairy	+ 239	Beef
Net change in stock if <u>weighted up</u> to all participants with livestock	+ 68,154	+ 65,620 Sheep + 2,534 Beef	+ 11,225	+ 10,600 Sheep + 625 Beef	-4,100	-3,720 Sheep -380 Beef	+ 430	+ 70 Sheep + 310 Beef + 50 Dairy	+ 470	+ 470 Beef

Note:

1. Due to small numbers of respondents to each question the results have **not** been weighted up to all participants (with exception of the final row).
2. Due to the survey oversampling large farms especially in the Lake District, the weighted up changes probably overestimate the potential changes by about 20% in respect of sheep numbers.

2.3.7 Impact on livestock husbandry

Only 21% of participants indicated that any withdrawal of the ESA scheme would result in changes to livestock husbandry management. Nearly half of these were located in the Lake District with the balance distributed evenly across the other ESAs. The main changes proposed were rearing more sheep and adopting more flexible management systems (Table 2.13).

Table 2.13: Changes to husbandry management if ESA scheme withdrawn in one year's time: by ESA (unweighted)

ESA	Lake District		South Wessex Downs	
	Number	Comments	Number	Comments
Total number indicating change	29		16	
Rear more on farm	10	Mainly sheep	11	Mainly beef
Increase quality	9	Mainly sheep	3	Mainly beef
Spend more time on stock	3	Sheep and beef	1	Beef
Have less time for stock	2	Sheep and beef	0	-
Will adopt more flexible systems	8	Mainly Sheep	2	Sheep and beef
Rear fewer on farm	0	-	3	Sheep and beef
Keep stock longer	0	-	3	Sheep and beef
Cut breeding costs	0	-	2	Beef
Less able to be flexible	0	-	1	Beef (in arable reversion)
Other	7	Sheep and beef	2	Beef

Note: Results not provided for Clun, Breckland and Test Valley where the number of respondents indicating change was very low (respectively 6, 5 and 5)

2.3.8 Impact on bought-in feed use

Thirty five per cent of participants would change their usage of bought-in feed if the ESA scheme was discontinued. Three-quarters were from the Lake District and a further 12% from Clun.

Table 2.14 shows that the main feed changes are all positive and mainly concern use of compound feed. These changes would occur mainly in the Lake District and Clun where livestock farming dominates.

Table 2.14: Expected changes in bought-in feed usage (% of those indicating that feed use changes would be made)

	Compound feed	Concentrates	Straights	Hay
Expecting to increase use	54	14	12	18
Expecting to decrease use	27	2	4	7
Net change (tonnage - weighted up to all participants in ESAs)	+ 950	+ 160	See concentrates (includes straights)	nil

2.3.9 Impact on machinery requirements

Only 14% of participants indicated that any withdrawal of the ESA scheme would result in changes to machinery requirements. A third of these would use contractors more and a quarter would use their own machinery more. The only other impacts indicated were reduced purchases, more on-farm repairs and increased purchases (17%, 13% and 8% respectively of those indicating change). Two thirds of all machinery changes would be made in the Lake District and Clun.

2.3.10 Impact on labour use

Just over a fifth (21%) of all participants thought that if the ESA scheme was discontinued, changes would be made to labour use. Key features of the responses were:

- the main change envisaged was longer hours being worked by family labour (14% of all respondents or two-thirds of those indicating labour use changes). Within these, the majority would work extra hours (eg, weekends) and reduce the hours of employed non-family labour;
- the other main impacts identified were reduced number of workers employed (4% of all respondents), increased number of employed staff (3% of all respondents) and less work for the family (3% of all respondents ie, by reducing hours employed/less overtime);
- nearly 90% of the labour changes envisaged were in the Lake District and Clun.

2.3.11 Impact on non agricultural income

The vast majority of ESA participants (89%) indicated that any ending of the ESA scheme would not affect current or future plans for the development of non-agricultural sources of income. The main change envisaged was greater interest in their development (almost all located in the Lake District and Clun). The main plans/comments of clarification given included examining scope for letting accommodation (9 respondents), would think seriously about developing non-agricultural sources of income (8 respondents), would seek outside employment (4 respondents), examine scope for developing camping/caravanning (3 respondents) and develop woodland (2 respondents).

2.3.12 Impact on income

After taking into consideration changes referred to in the sub-sections above (as a result of possible discontinuation of the ESA scheme), participants were asked to provide broad magnitudes of likely changes in their farm income. The key features of the responses (see Table 2.15) were:

- 12% of all participants perceive that their net farm income would increase compared to 61% who perceive that their net farm income would fall;
- about a fifth of all participants think that there would be no change to their farm income level;
- the focus of concern about possible adverse impact on farm income is in the Lake District and Clun. Those indicating possible positive impact on farm income are also in

these two ESA regions although the limited number of respondents indicating possible positive impact may make these results insignificant and unreliable;

- by farm turnover and farm size range: for those indicating possible positive changes in farm income, these were mainly concentrated amongst farms with turnovers over £160,000. The numbers indicating positive changes were also slightly higher in the over 100 hectares farms than in those under 100 hectares. For those indicating negative changes in farm income, these were mainly concentrated amongst farms with turnovers under £80,000 and those under 100 hectares;
- there was a significant link between those expecting an increase in income or no change and those expecting to increase their crop areas if the ESA scheme was discontinued (ie, there was a concentration of those expecting to increase income amongst those who will increase their crop area);
- the majority of the participants expecting their income level to increase and/or stay the same were found amongst those expecting to seek increases to crop yields and livestock numbers.

A breakdown of responses by ESA is given in Appendix 3.

Table 2.15: Impact of discontinuing the ESA scheme on farm income

Changes	% of participants	Key features by ESA
Increase by 20% plus	2	Highest concentration in Clun
Increase by 10-19%	2	Highest concentration in Lake District
Increase by 1-9%	1	No ESA specific features
Don't know (level increase)	7	No ESA specific features
Decrease by 1-4%	13	Highest concentration in Breckland and Lake District
Decrease by 5-9%	9	Highest concentration in Lake District
Decrease by 10% plus	18	Almost all in Lake District and Clun
Don't know level (decrease)	21	No ESA specific features
Expect no change	22	Broadly across all ESAs. Highest numbers in Lake District but highest share relative to all participants in each ESA in Breckland and South Wessex
No opinion given	5	No ESA specific features
TOTAL	100	

2.4 Problems experienced in meeting management conditions in each ESA tier

2.4.1 Lake District

Few participants indicated problems with meeting the management conditions (Table 2.16) with the exception of:

- heather fell (31% of those in the tier);
- meadows (35% of those in the tier);
- enhanced heather fell (the only one respondent in this tier interviewed).

Where problems were identified, the main issues were fertiliser and timing restrictions, and stocking limits (Table 2.21). For more detailed (by ESA) breakdown of problems identified, see Appendix 3.

2.4.2 Clun

The main problem tiers are reversion of improved to unimproved grass, reversion of improved grass to rough grazing or reversion to permanent grass where 25%, 10% and 18% of tier participants experienced difficulties (Table 2.17). In terms of specific problems these were mainly weed control, poor grass performance, timing restrictions and limits on fertiliser applications (Table 2.21 and Appendix 3).

2.4.3 Breckland

Problems were experienced by some participants in all tiers except conservation headlands. These were most frequently mentioned by those in the river valley grass tier (Table 2.18). In addition, the majority of those in reversion to heathland and uncropped wildlife strips also identified difficulties, although in both cases the numbers in these tiers was low (only 3-4 interviewed in each tier). Therefore, it is difficult to assess whether these difficulties are representative of all in each tier. The nature of the main problems were weed control and not being able to spray (Table 2. 21).

2.4.4 South Wessex Downs

Very few in the all land tier had problems with the management conditions in this tier. However problems were experienced by participants in the tiers permanent grass and downland turf (Table 2.19), where 28% and 19% respectively of all tier participants indicated difficulties. Half of the respondents (small base of 12 interviewed) in downland turf creation also experienced problems with this tier management conditions. The main problems were weed control and poor grass performance (Table 2.21).

2.4.5 Test Valley

There were few who experienced problems with meeting the management conditions for improved grass (Table 2.20). However, about a third of all participants in the unimproved grass tier and arable reversion experienced problems with the management conditions. The most significant problems were weed control and poor grass/crop performance (Table 2.21).

Of the problems indicated in Table 2.21 relating to management conditions, 70% were brought to the attention of respective project officers. Of these, 39% indicated satisfaction with the way in which the problems were resolved and 61% were not satisfied. The highest incidence of satisfaction were found in South Wessex Downs and the greatest number of dissatisfied participants were in the Lake District and South Wessex Downs (ie, in South Wessex views were somewhat polarised either very satisfied or dissatisfied).

Table 2.16: Difficulty found in meeting management conditions - Lake District by tiers

Tier	All land	Inbye	Intake	Fell without heather	Heather fell	Meadows	Pastures	Wetland	Enhanced heather fell	Wall
Unweighted base (interviewed)	26	96	57	14	13	17	28	35	1	27
Weighted base (total in tier)	267	988	586	144	134	175	288	360	10	278
Have had problems (%)	-	8	2	7	31	35	7	-	100	7
Not had problems (%)	100	89	95	86	69	59	82	100	-	81
Don't know/Not answered (%)	-	3	3	6	-	6	11	-	-	12

Table 2.17: Difficulty found in meeting management conditions - Clun by tiers

Tier	All land	Unimproved grass	Reversion of improved to unimproved grass	Reversion of improved grass to rough grazing	Reversion to permanent grass	Conservation headlands	Hedge
Unweighted base (interviewed)	59	53	20	10	11	None	21
Weighted base (total in tier)	205	184	69	35	38	None	73
Have had problems (%)	2	9	25	10	18	-	-
Not had problems (%)	98	91	75	90	82	-	100

Table 2.18: Difficulty found in meeting management conditions - Breckland by tiers

Tier	Heathland	Reversion to heathland	River valley grass	Uncropped wildlife strips	Conservation headlands
Unweighted base (interviewed)	13	3	36	4	3
Weighted base (total in tier)	39	9	107	12	9
Have had problems (%)	23	67	28	75	-
Not had problems (%)	27	33	72	25	100

Table 2.19: Difficulty found in meeting management conditions - South Wessex Downs by tiers

Tier	All land	Permanent grass	Downland turf	Downland turf creation	Arable reversion	Conservation headlands	Grassland enhancement
Unweighted base (interviewed)	42	40	37	12	5	5	10
Weighted base (total in tier)	123	118	109	35	15	15	29
Have had problems (%)	5	28	19	50	20	20	30
Not had problems (%)	95	72	81	50	80	80	70

Table 2.20: Difficulty found in meeting management conditions - Test Valley by tiers

Tier	Improved grass	Unimproved grass	Arable reversion
Unweighted base (interviewed)	8	20	3
Weighted base (Total in tier)	16	39	6
Have had problems (%)	13	35	33
Not had problems (%)	87	65	67

Table 2.21: Difficulties meeting management conditions (Unweighted: ie, all those surveyed)

Conditions Nominated	Number	ESA - Specific features
Weed Control/topping	33	Highest incidence in Breckland (difficulty experienced in all ESAs)
Grazing	20	Highest incidence in South Wessex Downs (also a problem in the Lake District)
Fertiliser restrictions	15	Highest incidence in Lake District and Clun
Poor sward	5	Almost all in Clun
Harrowing	1	Breckland
Other	10	Mostly Lake District
Problems Nominated		
Thistles/nettles and problem weeds	23	Spread across all ESAs
Poor grass/crop performance	19	Spread across all ESAs (except Breckland)
Timing restrictions	14	Mainly Lake District and Clun
Stocking limits	12	Mainly Lake District
Limits on fertiliser applications	11	Mainly Lake District and Clun
Not able to spray	10	Mainly Breckland and South Wessex Downs
Hand pulling ragwort	2	
Not allowed to mechanically control weeds	2	
Other	15	Mainly Breckland and South Wessex Downs

2.5 Ease of compliance with management conditions

A breakdown of participants perceptions about the relative ease/difficulty in complying with the management requirements of each ESA tier is shown in Table 2.22 to Table 2.26. The key features of these are:

- *Lake District*: compliance with most tiers was generally perceived to be reasonably easy although the meadows tier was considered to be neither easy or difficult. The main problem tier for compliance was heather fell where nearly a quarter of those in the tier considering the conditions being difficult to meet;
- *Clun*: the majority of all participants in each tier considered compliance to be reasonably easy. Greatest difficulty (albeit amongst a minority of participants in each tier) was found with conditions in the unimproved grassland, reversion to unimproved grass and reversion to permanent pasture tiers;
- *Breckland*: between about a half and two-thirds of all participants in each tier considered compliance with conditions to be relatively easy. The main problem tier was river valley grass;
- *South Wessex Downs*: the majority of all participants in each tier considered compliance to be reasonably easy. Greatest difficulty (amongst a minority of participants in each tier) was found with conditions for the downland turf creation, downland turf and permanent grass tiers;

- *Test Valley*: most participants found the conditions on all tiers reasonably easy to comply with. Arable reversion conditions were however, considered to be quite difficult to meet by one of the three in this tier interviewed.

Table 2.22: Ease of compliance: Lake District by tiers (% of participants in tier)

Tier	All land	Inbye	Intake	Fell without heather	Heather fell	Meadows	Pastures	Wetland	Enhanced heather fell	Wall
Unweighted base (interviewed)	26	96	57	14	13	17	28	35	1	27
Weighted base	267	988	586	144	134	175	288	360	10	278
Very easy	31	25	26	29	8	12	14	20	-	19
Quite easy	58	57	56	64	54	47	68	66	100	48
Neither easy nor difficult	11	15	16	7	15	35	11	11	-	7
Quite difficult	-	3	2	-	8	6	4	3	-	7
Very difficult	-	-	-	-	15	-	-	-	-	-
Don't know/not answered	-	-	-	-	-	-	3	-	-	19

Table 2.23: Ease of compliance: Clun by tiers (% of all participants in tier)

Tier	All land	Unimproved grass	Reversion of improved to unimproved grass	Reversion of improved grass to rough grazing	Reversion to permanent grass	Conservation headlands	Hedge
Unweighted base (interviewed)	59	53	20	10	11	None	21
Weighted base	205	184	69	35	38	None	73
Very easy	25	23	15	30	18	-	38
Quite easy	56	40	55	50	46	-	33
Neither easy nor difficult	15	23	15	20	9	-	19
Quite difficult	4	14	15	-	9	-	5
Very difficult	-	-	-	-	9	-	-
Don't know/not answered	-	-	-	-	9	-	5

Table 2.24: Ease of compliance: Breckland by tiers (% of participants in tier)

Tier	Heathland	Reversion to heathland	River valley grass	Uncropped wildlife strips	Conservation headlands
Unweighted base (interviewed)	13	3	36	4	3
Weighted base	39	9	107	12	9
Very easy	23	-	31	-	67
Quite easy	38	67	31	50	-
Neither easy nor difficult	15	-	22	50	-
Quite difficult	8	33	11	-	33
Very difficult	8	-	-	-	-
Don't know/not answered	8	-	5	-	-

Table 2.25: Ease of compliance: South Wessex Downs by tiers (% of participants in tier)

Tier	All land	Permanent grass	Downland turf	Downland turf creation	Arable reversion	Conservation headlands	Grassland enhancement
Unweighted base (interviewed)	42	40	37	12	5	5	10
Weighted base	123	118	109	35	15	15	29
Very easy	50	35	46	25	-	40	20
Quite easy	40	38	32	25	40	20	50
Neither easy nor difficult	7	10	6	8	20	20	20
Quite difficult	3	13	11	34	20	-	-
Very difficult	-	4	5	-	-	-	10
Don't know/not answered	-	-	-	8	20	20	-

Table 2.26: Ease of compliance: Test Valley by tiers (% of participants in tier)

Tier	Improved grass	Unimproved grass	Arable reversion
Unweighted base (interviewed)	8	20	3
Weighted base	16	39	6
Very easy	25	25	33
Quite easy	50	60	33
Neither easy nor difficult	25	5	-
Quite difficult	25	10	33

2.6 Satisfaction with payment levels

A breakdown of participants level of satisfaction with current payment levels for each tier is shown in Tables 2.27 to Table 2.30. The main features are:

- *Lake District*: high incidence of satisfaction with payment levels were expressed for those in the all land tier, reasonable levels of satisfaction (more than half of participants in each tier indicating the rates were reasonably fair/generous) for inbye, wetland, fell without heather, intake and pasture. Payment levels were however, considered to be on the low side for heather fell and meadows (Table 2.27);
- *Clun*: the majority of participants in the tiers reversion of improved grass to rough grazing, reversion to permanent grass and all land consider the current payment rates to be reasonably fair/generous. General dissatisfaction with the levels of payment were however, expressed for unimproved grass, and especially hedges (reversion to unimproved grass had a 50%:50% broad split between those satisfied and those not satisfied) (Table 2.28);
- *Breckland*: the greatest level of dissatisfaction with payment levels was recorded for river valley grass, where about 10% of those in the tier thought the payment rates to be far too low and a further third though them to be a bit on the low side. Two of the three interviewed in the tiers reversion to heathland and conservation headlands, and two of the four in uncropped wildlife strips considered the payment levels to be a bit on the low side (Table 2.29).
- *South Wessex Downs*: the responses relating to satisfaction levels with payment rates showed clear divisions between different tiers. The majority of all participants in downland turf creation, arable reversion, conservation headlands and grassland enhancement were dissatisfied with payment levels. About 50% of those in the downland turf tier were satisfied and 50% dissatisfied with the payment levels whilst for the remaining two tiers of all land and permanent grass there was general satisfaction with the level of payments (Table 2.30);
- *Test Valley*: the majority of all participants in each tier found the level of payments to be reasonably satisfactory. The tier in which the greatest level of concern was raised (38% of those in the tier) was for improved grass (Table 2.31).

Table 2.27: Satisfaction with payment levels: Lake District by tiers (% of all participants in tier)

Tier	All land	Inbye	Intake	Fell without heather	Heather fell	Meadows	Pastures	Wetland	Enhanced heather fell	Wall
Unweighted base (interviewed)	26	96	57	14	13	17	28	35	1	27
Weighted base	267	988	586	144	134	175	288	360	10	278
Much too low	8	10	7	7	15	18	4	9	-	7
A bit on the low side	12	25	32	29	31	29	36	26	-	30
Reasonable fair	77	52	49	50	54	41	46	57	-	33
Fairly generous	3	6	4	-	-	6	7	2	-	4
Don't know/not answered	-	7	8	14	-	6	7	6	100	26

Table 2.28: Satisfaction with payment levels: Clun by tiers (% of participants in tier)

Tier	All land	Unimproved grass	Reversion of improved to unimproved grass	Reversion of improved grass to rough grazing	Reversion to permanent grass	Conservation headlands	Hedge
Unweighted base (interviewed)	59	53	20	10	11	-	21
Weighted base	205	184	69	35	38	-	73
Much too low	14	13	10	-	18	-	24
A bit on the low side	30	45	40	20	27	-	43
Reasonable fair	54	40	50	80	45	-	29
Fairly generous	-	-	-	-	10	-	-
Don't know/not answered	2	2	-	-	-	-	4

Table 2.29: Satisfaction with payment levels: Breckland by tiers (% of participants in tier)

Tier	Heathland	Reversion to heathland	River valley grass	Uncropped wildlife strips	Conservation headlands
Unweighted base (interviewed)	13	3	36	4	3
Weighted base	39	9	107	12	9
Much too low	8	-	11	25	-
A bit on the low side	23	67	31	25	67
Reasonably fair	69	33	44	50	33
Fairly generous	-	-	11	-	-
Don't know/not answered	-	-	3	-	-

Table 2.30: Satisfaction with payment levels: South Wessex Downs by tiers (% of participants in tier)

Tier	All land	Permanent grass	Downland turf	Downland turf creation	Arable reversion	Conservation headlands	Grassland enhancement
Unweighted base (interviewed)	42	40	37	12	5	5	10
Weighted base	123	118	109	35	15	15	29
Much too low	13	11	16	50	20	40	10
A bit on the low side	21	30	30	17	60	20	50
Reasonably fair	62	55	49	25	-	20	40
Fairly generous	2	2	-	-	-	-	-
Don't know/not answered	2	2	5	8	20	20	-

Table 2.31: Satisfaction with payment levels: Test Valley by tiers (% of participants in tier)

Tier	Improved grass	Unimproved grass	Arable reversion
Unweighted base (interviewed)	8	20	3
Weighted base	16	39	6
Much too low	-	10	-
A bit on the low side	38	15	-
Reasonably fair	62	55	100
Fairly generous	-	15	-
Don't know/not answered	-	5	-

2.7 Changes to the nature of payment

2.7.1 Response to a 'two part tariff' (comprising a fixed entry payment plus annual payments/hectare)

The participants were next asked to comment on an option for changing the nature of payments made in the ESA scheme. This option involved the payment of a fixed sum simply for entering the scheme (irrespective of the amount of land entered) plus annual payments per hectare committed.

The nature of the responses to this hypothetical option for change to the scheme were:

- 26% all respondents thought this was a better option than the current arrangements. These were distributed across all ESAs although the highest incidence (absolute numbers and proportion of participants in the ESA) was in the Lake District. The main reasons given for this response were it would improve the general level of income and would benefit small farmers relatively more than larger farmers;
- 31% of all respondents perceived this to be not as good as the current scheme. These were also distributed across all ESAs although the highest incidence (absolute numbers) were in Clun, Breckland and the Lake District. Also, as a proportion of participants in each ESA, there was high incidence in South Wessex Downs. The main reasons cited for this response were the current scheme is satisfactory and this might encourage some to join the scheme for 'the wrong reason' (ie, money only);
- 29% of the respondents thought that this would make no difference. These were distributed across all ESAs fairly evenly although the highest incidence as a proportion of participants in an ESA was in the Test Valley. The main reasons given for this answer included expectation that overall payments received would not alter, the present scheme is satisfactory and the area in the scheme being fairly small so that the level of payments (including any additional payments) received would continue to be unimportant relative to revenue from other sources;

The balance of respondents (13%) indicated 'don't know' to this question and indicated that they would require more detailed information before being able to make further assessments.

2.7.2 Response to a signing-on fee

Participants were next asked to respond to the offer of a one-off payment for renewing their agreements in addition to continuing to receive the current scheme payment levels (the one-off fee offered was £500 to those interviewed on odd dates (143 respondents: 51%) and £1,000 to those interviewed on even dates (138 respondents: 49%). A summary of the responses is shown in Figure 2.4.

The main feature of the responses are:

- not surprisingly a higher proportion of those offered £1,000 (46%) than those offered £500 (33%) thought that this would be better than the current scheme arrangements and hence a greater incentive to remain in the scheme;
- 42% of those offered £500 and a third of those offered £1,000 considered that these additional payments would make no difference to their decision to stay in/leave the scheme;
- the pattern of responses was broadly consistent across all ESAs although in the Lake District a higher proportion than the average (about half of all participants) considered that the offer of an additional one-off payment would make no difference to their decision to stay in/leave the scheme.

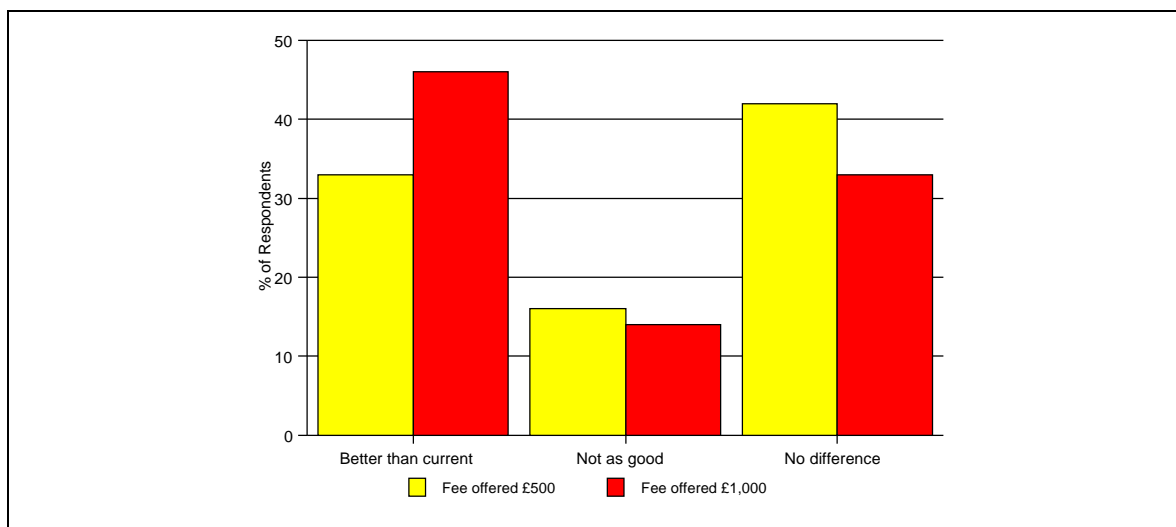


Figure 2.5 Responses to offer of a fixed one-off fee to re-new agreement

The reasons given for the various responses were the same as given for the 'two-part tariff' question (see above).

2.8 Attitudes towards the ESA scheme

2.8.1 General attitudes, advantages and disadvantages

A broad range of attitudes towards the scheme were expressed by participants (Table 2.32). The main positive attitudes (expressed fairly consistently across all of the ESAs) related to the improved appearance of farms, better for wildlife, flora etc. The other main positive attitude or feature expressed related to the financial contribution of the scheme. This was a feature amongst farmers in the Lake District and Clun where most of the participants indicating 'that the scheme had made it possible for them to stay in farming' were also located. The positive attitude towards the financial contributory aspects of the scheme were lowest in South Wessex

Downs and the Test Valley - these two ESAs were also where most of the (few) participants who considered that they would have been better off outside the scheme came from.

The main disadvantages of the scheme were associated with reduced flexibility in management, restrictions on stocking rates, the rules/regulations/paperwork and having to change farming practices. The highest concentration of those expressing dissatisfaction/disadvantages with the scheme came from South Wessex Downs and the Test Valley. It should however, be noted that the incidence of positive attitudes and identification of advantages were significantly more numerous than the negative attitudes and identification of disadvantages (Table 2.32).

This underlying positive attitude towards the scheme was also apparent from 79% of all participants indicating that they would recommend the scheme to others (Table 2.5) and only 3% indicated that they would discourage others from entering the scheme. Although positive attitudes were widespread across all of the ESAs, the highest incidence of positive endorsement was found in the Lake District and Clun and the lowest incidence in South Wessex Downs and the Test Valley (the latter being where all of those indicating that they would discourage others from entering the scheme were located).

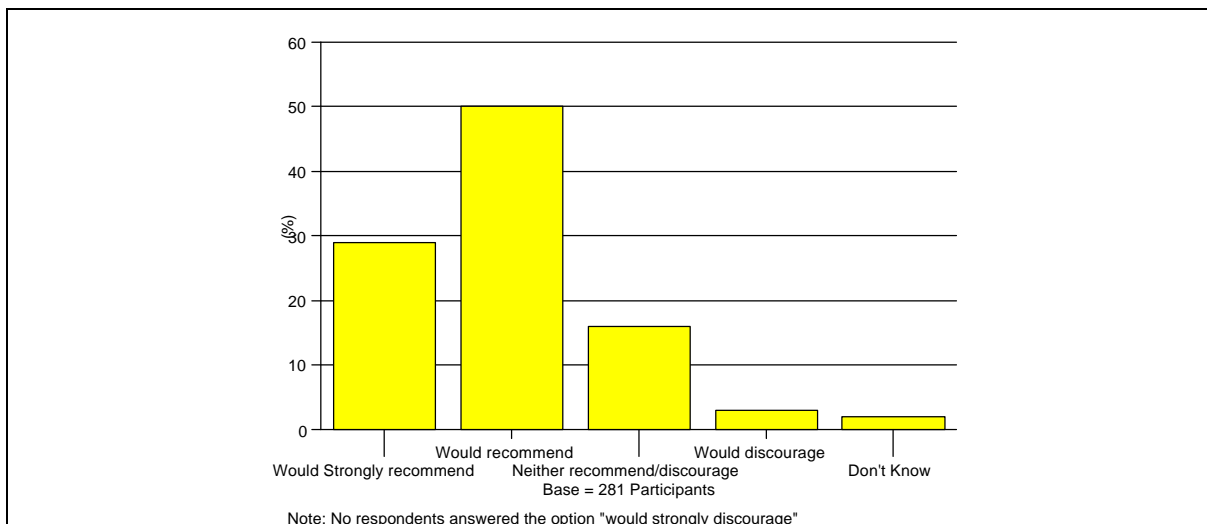


Figure 2.5: Whether would recommend ESA scheme to others

Table 2.32: Main general attitudes (positive and negative) towards the scheme

Attitude feature	Proportion of participants indicating endorsement to feature (%)	ESA specific features
Participation made the farm more attractive	59	Above average response in Clun and below average in Test Valley
Has resulted in more birds, wildlife and plants	49	Consistent across all areas
Cost more at first but these now under control	31	Above average feature in South Wessex and Test Valley, below average in Lake District
Has taken some of the worry out of farming	30	Above average feature in Clun, below average in South Wessex and Test Valley
Cost more than expected to meet conditions	26	Consistent across all ESAs
Too much paperwork involved	24	Consistent across all ESAs
Has made it possible to remain in farming	24	Above average response in Lake District and Clun, below average in Breckland
Takes up a lot of management time	22	Consistent across all ESAs
Has required significant changes to farming practises	14	Consistent across all ESAs
Are constantly being checked up on	9	Consistent across all ESAs
Would have been better off not participating	8	Above average response in South Wessex
Advantages of scheme		
Financial benefit	63	Above average Lake District and Clun, below average in South Wessex and Test Valley
Improves farm appearance	32	No ESA specific features
Conservation	20	Above average Breckland and Test Valley, below average Lake District and Clun
Little extra work involved	14	Above average South Wessex and Test Valley, below average Breckland
Not difficult to meet conditions	5	
Improves/rests land	4	
Involves less work	3	
Easier to control stock	2	
Improves public image of farming	2	
Those unable to identify advantages (ie, said no advantages)	4	No ESA specific features

Attitude Feature	Proportion of participants indicating endorsement to feature(%)	ESA Specific Feature
Disadvantages of the Scheme		
Less flexibility in management	28	Above average in South Wessex and Test Valley
Have to reduce or cannot increase stocking rates	12	Above average in Lake District, South Wessex and Test Valley
Rules/regulations	12	No ESA specific features
Having to change farming practice	9	No ESA specific features
Paperwork	8	Above average in South Wessex and Test Valley
Not able to spray to deal with weed problems	6	Above average in Breckland and Test Valley
Financial disadvantages/inadequate rewards	4	Above average in Breckland and Test Valley
Those unable to identify disadvantages (ie, said no disadvantages)	33	Below average in South Wessex and Test Valley

2.8.2 Where participants learned about the ESA scheme

A range of sources were cited as the primary way in which participants found out about the scheme. The main source (54% of participants) was MAFF/ADAS, followed by 'through farmers meetings', reading in the press, from other farmers, advertisements in the press, the NFU and in the post/mailshot (Table 2.33). There were no significant differences in the nature of responses by different ESA region.

Table 2.33: Where participants learned about the scheme

Source	%
MAFF/ADAS	54
Farmers' meetings	22
Reading press	12
Other farmers	7
Press adverts	6
NFU	5
Post	5

2.8.3 Main factors persuading farmers to join the scheme

The primary reason given for joining the scheme (given by 69% of all respondents) was the financial benefits of the scheme. This reason was particularly important for participants in Clun and the Test Valley where 89% and 80% respectively of participants in these ESAs gave this as the main reason for joining. The second most significant reason given for joining the scheme was interest in conservation (38% of all respondents gave this as a reason for joining). This reason was given by an above average number of farmers (ie, the share of farmers citing this

reason in an ESA as a percentage of all farmers in the ESA was higher than 38%) in South Wessex Downs and the Test Valley and by a below average number in Clun and the Lake District.

Although several other reasons/influences were given by some participants for joining the scheme (eg, did not require changes to existing farm practices, encouragement from MAFF/ADAS, advised by a friend) the proportion of farmers giving these reasons were less than 10% of the total.

2.8.4 Attitude to renewal and timing of renewal

The ESA participants were asked to consider renewal on the same terms as their present contracts and to indicate a timing option that they would be most and least likely to accept. A summary of their responses to the four main options is shown in Table 2.34.

This shows that the 90% of participants would be likely to renew membership on the same terms as present with the majority preferring (70% of all respondents) to wait until the expiry of their current contract before taking up renewal rather than renewing now if this option were available (20% of all respondents would renew now if this option were available). The most common reason for waiting until current contract end before renewal was wanting to 'wait and see' rather than commit now (about 10% of respondents). Some gave additional reasons such as perceiving that payment levels might rise in the next few years and not wanting to commit to another 10 years just yet because general economic circumstances might change. Also for those 'renewing' (now or at current contract end), a common reason given (by a quarter of respondents) was satisfaction with the scheme. For the small minority of participants indicating a desire to leave the scheme, the main reason given was inadequate payment levels.

There was no significant difference in the nature of responses by ESA although the small number indicating that they would leave the scheme were located in South Wessex Downs and the Test Valley.

Table 2.34: Most/least likely option for renewal

Options	(%)	
	Most likely to accept	Least likely to accept
Wait until end of current contract and re-new	70	2
Re-new as soon as possible	20	15
Wait until end of current contract and withdraw	4	3
Withdrawal as soon as possible	3	73
Don't know	3	7

2.9 Perceptions about general developments in the future

2.9.1 Likely future ownership and farm size changes

The majority of participants (76%) do not expect any change in the nature of ownership on their farms over the next five years with a further 12% considering any changes only likely to be intra-family changes. Only 2% of respondents thought their farm would be likely to be sold¹⁰. There were no significant differences in the nature of responses between ESAs.

In relation to changes in the size of farms, about two-thirds do not expect to make any changes over the next five years. In addition to the 2% of participants who expect to sell their farms, a further 23% expect to acquire some further land. These were broadly distributed across all of the ESAs examined although there was an above average number (ie, more than 23% of all participants in an ESA) in the Lake District, and South Wessex Downs and a below average number in Clun and Breckland. Only 6 respondents out of the 65 who indicated that they expected to acquire land suggested amounts of land they expected to acquire. This amounted to about 3,000 hectares. There was only one respondent who expected to sell land who suggested an actual area for sale.

In the case of retirement most farmers thought that other family members would take over the farm (51%) or were uncertain about what would happen when they retired (33%). A further 10% would probably sell the farm and 6% would let/rent out the farm. There were no significant differences in the nature of responses by different ESA.

2.9.2 Likely future changes in enterprises

About three-quarters (78%) of participants do not anticipate making any changes to their farm enterprises in the next five years. The highest number of farmers indicating that changes are likely were in the Lake District (where the majority of ESA participants are located) although in terms of concentration per ESA (% of participants in an ESA) this was highest in South Wessex Downs (30%) and lowest in Breckland (16%). Of those expecting to make changes (20% of all participants), about half were in sheep, just under half in beef and a quarter in dairy and arable crops. The beef and sheep changes came predominantly from the Lake District and Clun, the dairy changes mostly from South Wessex Downs and the arable changes mainly from Breckland.

In the majority of cases for all of the proposed enterprise changes (about 60-65% of those indicating a change) there is likely to be an increase in yields, area or livestock numbers. The remainder plan to either reduce numbers or areas or go out of an enterprise altogether.

¹⁰ The balance were roughly equally split between those who think that there will be fewer owners/partners and those who think there will be more owners/partners.

2.9.3 Likely future interest in non-farming income

Participants expected future dependence on non-farming sources of income were:

- *for those with existing sources of non-farm income (140 interviewed or 787 if weighted up to all in the scheme): 70% expect no change. Of those expecting change (27%¹¹) these were mainly located in the Lake District, South Wessex Downs and the Test Valley where 40%, 41% and 36% respectively of participants in each ESA expect changes in their level of dependence on non-farming income. There was significantly below average expectation of change in the other two ESAs. Broadly, about two-thirds of the participants expect dependence on non-farming income to increase;*
- *for those without existing sources of non-farm income (141 interviewed or 791 if weighted up to all participants) 78% expect no change. Of those expecting change (5%: the rest answered don't know) these were mainly located in Breckland and the Test Valley. As with those with existing non-farm sources of income, about two-thirds expect greater dependency on non-farm sources in future;*
- *the main nature of proposed changes (where given) were increased use of properties for holiday lets (28% of those expecting a change), and an increase in the provision of leisure facilities (19% of those expecting a change).*

2.9.4 Expected changes in the nature of farm support over the next five years

A breakdown of farmers expectations relating to future farm support is shown in Table 2.35.

Key features are:

- the main expected change in the **nature** of support expressed by 55% of participants is a general reduction in support levels (ie, even though asked about the nature of support, most responses were related to the level of support: see below). This was broadly reflected across all of the ESAs;
- the second and other main significant expected change is for increased linking of support to environmental conditions (24% of participants). This was broadly reflected across all of the ESAs although significantly more than 24% of those in South Wessex Downs and significantly less than 24% in the Test Valley expected this change;
- in relation to expected changes to the **level** of support, nearly two-thirds of the participants expect levels to fall, about 10% think support levels will increase and about 15% expect levels to remain the same (the balance answered 'don't know'). Those expecting support levels to decrease were more heavily concentrated in South Wessex and the Test Valley (ie, the proportion of participants in each of these ESA expecting

¹¹ The balance of 3% answered don't know.

support levels to decrease was greater than the proportion of all participants expecting a decrease in the level of support). Those expecting support levels to increase were mainly in Breckland and the highest incidence of those expecting support levels to stay the same were in the Lake District;

- farmers 'on balance' expectations about whether they expected their farms to benefit or lose from likely future changes in the nature of farm support showed that about half expect to lose out. This sentiment was consistent across all ESAs although less so in the Lake District where there were greater levels of positive expectations (ie, where the majority of those expecting to benefit from support changes were located). Nevertheless, about a third of all participants indicated don't know - uncertainty about what will happen to future support and the likely impact on them;
- even though half of the participants thought that they would lose out from future changes in farm support levels, a higher proportion (63%) were quite/very optimistic about the future prospects for their farm. Levels of optimism about future farming prospects were generally higher in the Lake District, Clun and Breckland and below average in South Wessex Downs and the Test Valley.

Table 2.35: Expected change in EU support

Expected change	% of total expecting change	ESA specific comments (where relevant)
Reduction in support levels	55	No ESA specific features: broadly reflected across all regions
Increased link of support to environmental candidates	24	Broadly reflected across all ESAs although above average in South Wessex Downs and below average in Test Valley
Increased support for less intensive farming	7	Above average responses in Breckland and South Wessex, below average in Test Valley
Change from headage to area payments (livestock)	5	Only raised as an issue in Lake District and Clun
Depends on government/election	4	Mainly Lake District
Reduction in quotas	3	Broadly across all regions
Others	4	
No change anticipated	9	Above average in Breckland and Test Valley, below average in South Wessex (no-one)
Don't Know	15	
Level of expected change in support		
Drop substantially	26	Above average South Wessex and Test Valley, below average Lake District
Drop a little	37	Above average South Wessex, below average Test Valley
Increase substantially	1	
Increase a little	8	Above average Breckland, below average South Wessex and Test Valley (none)
Stay about the same	15	Above average Lake District, below average all other ESAs
Don't know	13	

Expected change 'On balance' expectation	% of total expecting change	ESA specific comments (where relevant)
To benefit	17	Above average Lake District, below average all other ESAs
To be a loser	50	Below average Lake District
Don't know	33	Broadly reflected across all ESAs

2.10 Changes in ESA payment levels

After the farmers surveyed had discussed the possible impact of the ESA being withdrawn, their general attitude towards the scheme and likely reaction to renewal on the same terms and conditions, they were asked about changes in the level of payments. Each farmer was asked to consider a reduction in the level of all payments in all tiers by one third¹² and asked to respond in one of four alternatives:

- a) Would totally reject the offer;
- b) Would be pretty likely to reject it;
- c) Be very unhappy about it, but feel that they would probably have to accept it;
- d) Accept it as a reasonable offer.

Unless option d) was selected, the question was then asked again but quoting a rate of payment reduction of 20%. This process was then continued until option d) was selected for discrete payment reduction levels of 12.5%, 5%, no change in the level of payment and then onto (if necessary) increases in the level of payment of 5%, 12.5% and 20%. An increase in the payment of 20% was the limit of options asked.

The rationale for using this approach to the questioning was to try to establish 'realistic' responses from farmers to different (reduced) payment rates. Among participants the issue is complicated by farmers being accustomed to the current set of payment levels and being aware that the scheme and payment levels are due for review. The farmer is therefore not very likely to volunteer the information that he would actually accept a lower payment rate than he is currently getting, and may deliberately over-bid or state a price of acceptance if asked to indicate such a price on a price "thermometers" or clock. The essence is that, instead of asking the farmer what price he would require to remain in the scheme, he is offered a price/payment level and asked whether he would accept or reject it. If he accepts, he is offered a lower price, if he rejects he is offered a higher price.

The results and analysis are presented in terms of the cumulative response as uptake curves and the report focuses on the two main uptake curves relating to option d) 'the narrow definition' and option c) 'the broad definition'. These were chosen for the focus of analysis

¹² Farmers were however not asked to respond to this question separately for payment in each tier. This was because of the large number of different tiers that some could potentially be in which would have significantly complicated and lengthened interview times to unacceptable levels.

because MAFF wish to explore the level of farmer sensitivity to changes in payment levels and to identify the payment levels at which most participants would be prepared to accept and/or remain in the scheme. Figure 2.6 to Figure 2.11 show the results for each ESA.

Examining the results, the following observations can be made:

a) All ESA regions (total participants: Figure 2.6)

- if payment levels were reduced by one third only about 3% of participants would consider the payment levels to be reasonable and only 30% would (reluctantly) accept;
- at the current payment levels just over half of all participants consider the rates to be reasonable and if maintained at time of possible renewal of ESA contracts, 85% would accept them;
- even if payment levels were increased by 20% about 1.5% of participants would still reject them and hence probably leave the scheme (as against about 15% who might leave the scheme if the payment rates were unaltered);
- these responses are consistent with the earlier answers given relating to satisfaction with payment levels where 17% of all participants indicated that payment levels were too low.

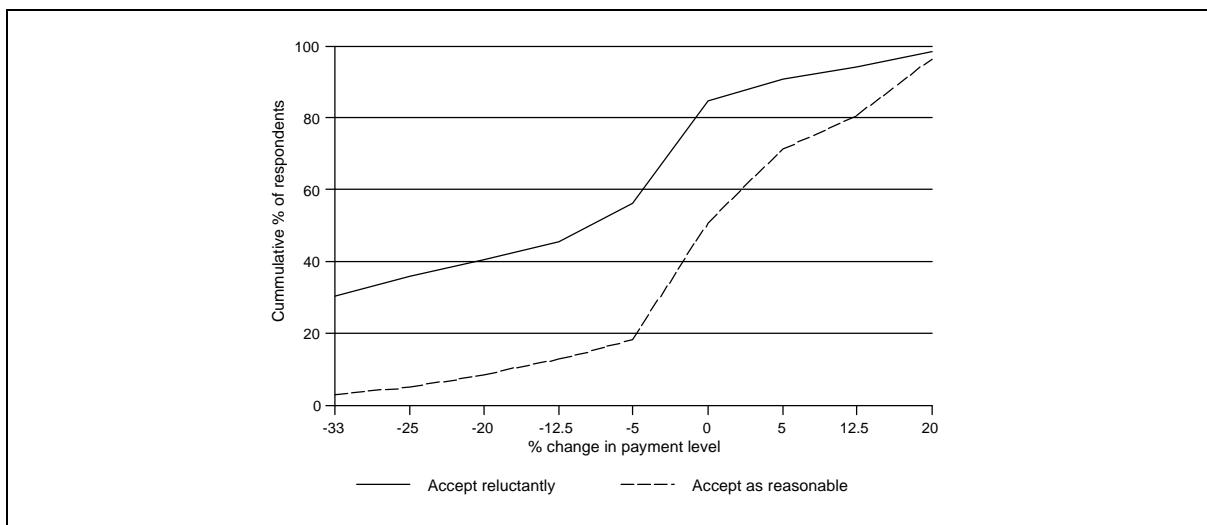


Figure 2.6 Reaction to changes in payment levels: All participants. Payment levels at which 'accept as reasonable' and would probably accept reluctantly'

b) Lake District: (Figure 2.7)

- about 4% of participants would consider a payment reduction of one third to be reasonably acceptable and a further 34% would (reluctantly) accept this level of reduction;
- 26% of current participants would consider the current payment levels to be reasonable and 74% would accept them if maintained at time of possible renewal of their ESA contracts. At the tier level the proportion of participants in each tier that would accept reluctantly the current payment if offered at time of renewal was between 72% for heather land and 93% for all land;
- if payment levels were increased by 20% all participants indicated that these would be acceptable. An increase in payment levels of 12.5% would probably induce 90% of participants to stay in the scheme and would induce all participants in all tiers except heather fed (97% would accept this) to stay in the scheme (all these would stay in the scheme if payment rates were increased by 20%);
- the responses discussed above are consistent with the earlier answers given relating to satisfaction with payment levels (the proportions of all participants in each tier perceiving payment levels to be far too low (shown in Table2.27)

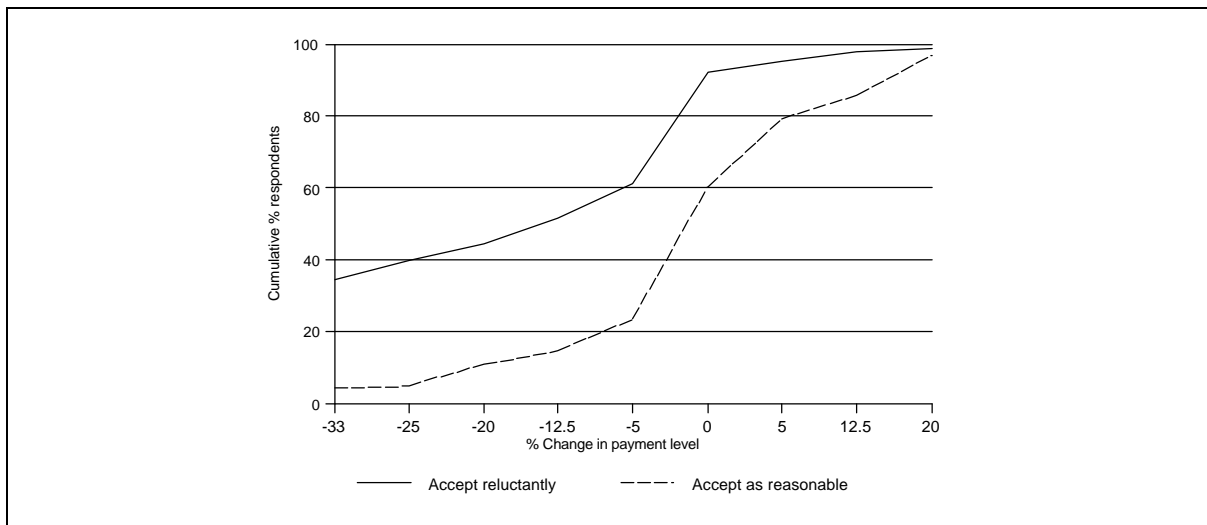


Figure 2.7 Reaction to changes in payment levels: Lake District. Payment levels at which 'accepted as reasonable' and 'would accept reluctantly'

c) Clun: (Figure 2.8)

- a one third reduction in payment levels would be rejected by all participants in Clun. At a reduction of 25%, about 5% would consider the rate to reasonably acceptable and a further 21% would (reluctantly) accept this level of reduction;

- 60% of current participants would consider the current payment levels to be reasonable and 92% would accept them if maintained at time of possible renewal of their ESA contracts. The tiers in which the lowest number of participants would accept the current levels at renewal were all land, hedges and unimproved grass where 71%, 74% and 76% respectively of participants would accept the payment level. It is however, important to recognise that in this ESA the option to leave/stay in different tiers is more restricted than in the other ESAs, with the all land effectively being a whole farm tier. If participants reject payment levels in this tier, they effectively reject the scheme as they cannot take up other tiers without taking up this tier;
- if payment levels were increased by 20% almost all (99%) of participants indicated that these would be acceptable. Thus, an increase in payment levels of 20% would probably induce only an additional 7% of participants to stay in the scheme (1% would possibly still leave/reject them) with the vast majority of participants finding current payment levels acceptable. Those considering this level of payment to be inadequate would be mainly those in the hedges and all land tiers;
- the responses discussed above show that farmers in Clun have probably 'overbid' the payment rates they would accept in future when compared with the earlier answers given relating to satisfaction with payment levels (the proportions of all participants in each tier perceiving payment levels to be far too low shown in Table 2.28 were generally lower for the tiers all land, unimproved grass, reversion of improved to unimproved grass, reversion of improved grass to rough grazing, reversion to permanent grass and hedges). Only for hedges were the levels of dissatisfaction with payment levels shown in Table 2.28 consistent with the responses given to the price change questions.

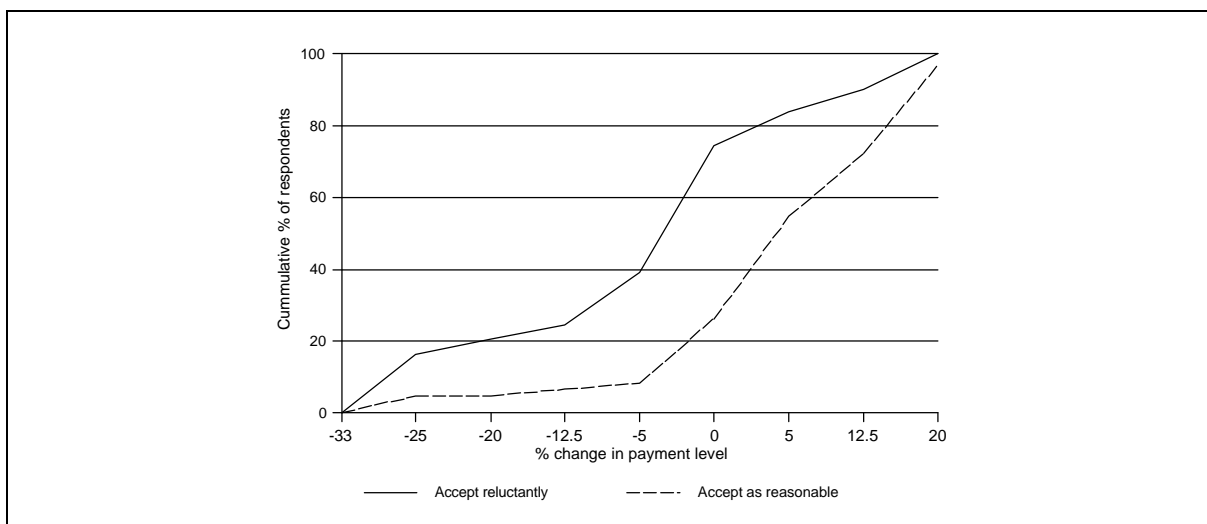


Figure 2.8 Reaction to changes in payment levels: Clun. Payment levels at which 'acceptable as reasonable' and 'would probably accept reluctantly'

d) Breckland: (Figure 2.9)

- about 4% of participants would consider a payment reduction of one third to be reasonably acceptable and a further 48% would (reluctantly) accept this level of reduction;
- 65% of current participants would consider the current payment levels to be reasonable and 88% would accept them if maintained at time of possible renewal of their ESA contracts. The main "problem tiers" is heathland where only 76% of those in the tier would accept the current payment level at renewal;
- if payment levels were increased by 20%, 97% of participants indicated that these would be acceptable. An increase in payment levels of between 0 and 5% would probably induce 90% of participants to stay in the scheme. Those still considering increases in the payment levels of 12.5% and 20% to be inadequate are mainly those in the heathland tier where 6% would still reject a 20% increase in payment rates;
- the responses discussed above are broadly consistent with the earlier answers given relating to satisfaction with payment levels (the proportions of all participants in each tier perceiving payment levels to be far too low as shown in Table 2.29 for the tiers heathland, reversion to heathland, river valley grass, uncropped wildlife strips and conservation headland). Although those in the uncropped wildlife strips tier showed greater levels of satisfaction with current payment levels at the price testing questions than at earlier questions (ie, their responses were a little inconsistent when compared to Table 2.29).

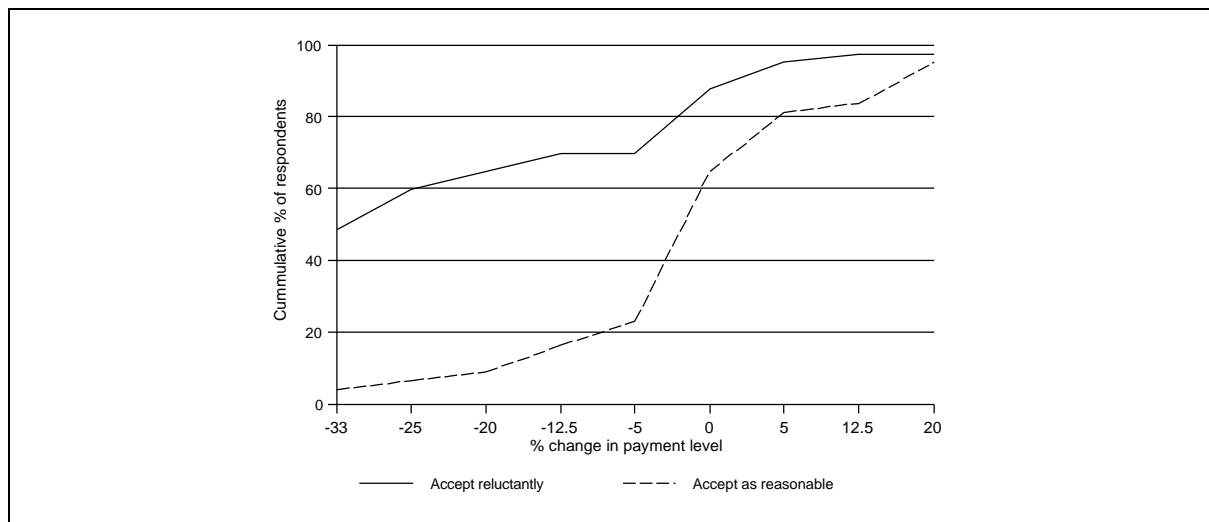


Figure 2.9 Reaction to change in payment levels: Breckland. Payment levels at which 'accepted as reasonable' and 'would probably accept reluctantly'

e) South Wessex Downs: (Figure 2.10)

- a one third reduction in payment levels would be accepted as reasonable by 4% of participants and reluctantly accepted by 36% of participants in South Wessex Downs;
- 57% of current participants would consider the current payment levels to be reasonable and 83% would accept them if maintained at time of possible renewal of their ESA contracts. The main problem tiers are downland turf creation, all land, permanent grass and downland turf where about a quarter of participants in each tier would not accept the current payment levels at time of possible renewal;
- if payment levels were increased by 20% (the only exception would be for downland turf creation) almost all participants indicated that these would be acceptable. An increase in payment levels of about 5% would probably induce 90% to stay in the scheme;
- the responses discussed above are broadly consistent with the earlier answers given relating to satisfaction with payment levels (the proportions of all participants in each tier perceiving payment levels to be far too low in Table 2.30)

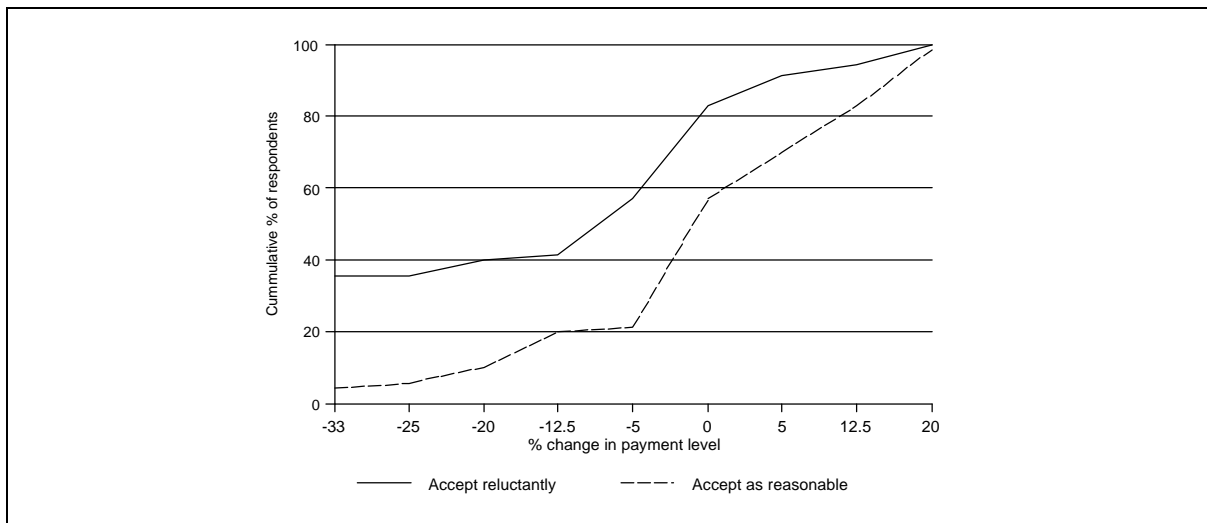


Figure 2.10 Reaction to changes in payment levels: South Wessex Downs. Payment levels at which 'accepted as reasonable' and 'would probably accept reluctantly'

f) Test Valley: (Figure 2.11)

- about 7% of participants would consider a payment reduction of one third to be reasonably acceptable and a further 32% would (reluctantly) accept this level of reduction;
- 51% of current participants would consider the current payment levels to be reasonable and 78% would accept them if maintained at time of possible renewal of their ESA contracts. The main problem tier is unimproved grass where 73% of those in the tier would not accept current payment levels at time of renewal;
- if payment levels were increased by 20%, 88% of participants indicated that these would be acceptable. Thus, an increase in payment levels of 20% would probably induce only an additional 10% of participants to stay in the scheme (12% would possibly still leave/reject them). Those who would reject a 20% increase in payment level were mainly in the unimproved grass tier;
- the responses discussed above show that farmers in the Test Valley have probably 'overbid' the payment rates they would accept in future when compared with the earlier answers given relating to satisfaction with payment levels (the proportions of all participants in each tier perceiving payment levels to be far too low in Table 2.30)

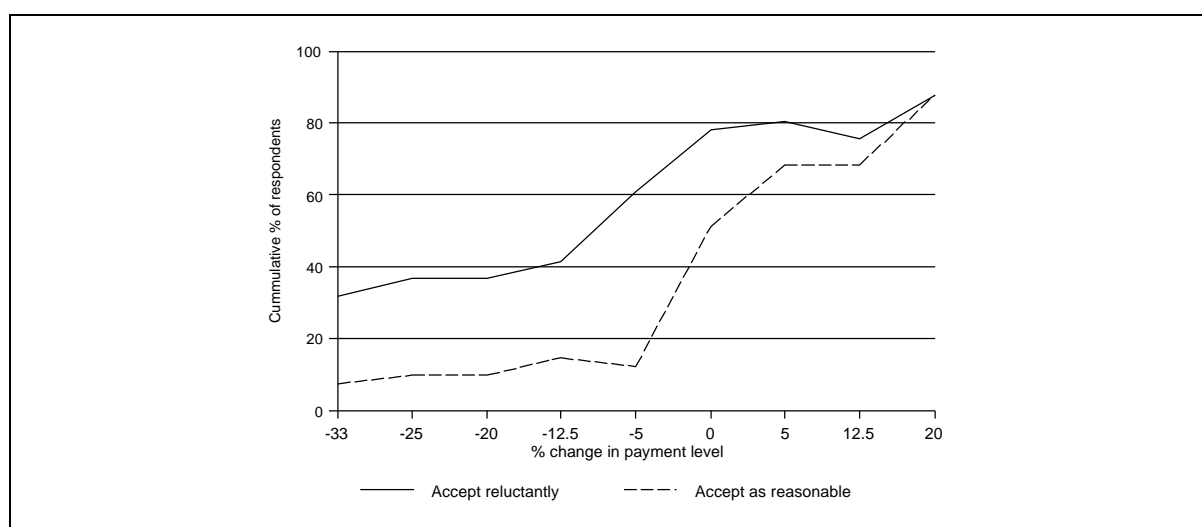


Figure 2.11 Reaction to changes in payments: Test Valley. Payment levels at which 'accepted as reasonable' and 'would probably accept reluctantly'

g) Other criteria

Examination of the price response questions by a number of other criteria identified:

- *age*: there was no significant difference in the nature of responses by age of farmer with those in the higher age groups (45-65) providing broadly similar response to those under 45;

- *farm and turnover size*: there was also no distinctive feature in the nature of responses by these criteria. It is also important to note that differences in responses by these criteria can be identified at the survey level mainly because larger farm and turnover size farms are more heavily concentrated in the ESAs of Breckland, South Wessex and the Test Valley. However, **within** each ESA, there is no significant difference in the nature of responses by those criteria. Also, at the ESA level, differences in responses tended to be mostly linked to tiers (ie, land type). Once responses had been disaggregated to this level, any further examination of responses by additional 'lower level' criteria such as farm size and turnover produced responses from very low numbers in each criteria (eg, number of participants in the Lake District, in the all land tier who were satisfied with current payment level, in the turnover category (£80-160,000)). This significantly reduced the reliability of any conclusions that might be drawn from such data.

2.11 Income effects

In this sub-section, the results of the participants responses to questions about changes in yields, livestock numbers and input usage (see sub-section 2.3) have been used to estimate (where possible) potential income changes on farm businesses.

a) Arable enterprises

Assumptions and approach

- the analysis has been undertaken for the two main crops for which yield and input changes were provided in the survey; grass and cereals;
- changes (net increases) in arable output were calculated using information provided to the questions relating to yield changes. Comparisons were made with the 'base' position on areas and yields drawn from responses to earlier questions in the survey;
- hay is assumed to be produced on temporary grassland, whilst permanent grassland is utilised for the production of grazing grass (ie, this assumption is not based on survey responses, but professional assessment of common practice);
- net changes in and the base position for cash returns (output) were calculated using average prices of £110/tonne and £73.5/tonne for cereals and hay respectively and £38.6/tonne for grazing grass (based on John Nix Pocketbook (1997));
- net income changes were calculated by examining the difference between net cash returns and fertiliser and pesticide costs only¹³;
- all ESA-specific analysis was based on regional-specific average responses to the survey with the exception of yields for hay and grazing grass (no base yield information was provided). For hay and grazing grass, an average yield of 9 tonnes/hectare was used for the Lake District and Clun whilst an average yield of 10 tonne/hectare was used for all other regions under examination.

¹³ Whilst not covering all variable costs, this includes the two key variable costs for crop production and the two inputs for which the vast majority of changes would occur if changes were made to the ESA scheme.

Impact

A summary of the key income impacts is shown in Table 2.36 and 2.37. The key features are:

- the net output changes would be increases of about 240,000 tonnes of hay/grazing grass and 4,275 tonnes of cereals;
- the net impact on cash receipts would be +£10 million for grass and +£0.47 million for cereals. These changes are equivalent to increases of about 18% and 1.7% respectively for grass and cereals;
- additional costs associated with increased use of fertilisers and pesticides would be +£2.1 million and +£300,000 respectively;
- the net changes in income across all of the participants that would undertake changes to yields and input use would be an increase of £8.3 million. In terms of changes in net income per hectare this equates to roughly +£53.4/hectare for grass and +£9.8/hectare for cereals (calculated by dividing net income foregone by the number of hectares on which yield will be increased);
- the main changes in net income would occur in the Lake District and Clun (Table 2.37). In relation to income changes per hectare on which yield/input changes would be expected the average change was between £22/hectare in Breckland and £50/hectare in Clun. For the ESA where the bulk of the changes would occur (Lake District) the average increase would be about £48/hectare.

It is important to recognise that the analysis above is largely based on the responses given by the participants to the survey. A key feature to highlight is the significant increase in average yield expected by the farmers who will make changes to grass production. As the participants did not provide base yield information for grass production it is difficult to fully assess whether the proposed changes are reasonable (the provision of base yield figures for cereals shows that the proposed changes for cereals are reasonable). If the proposed yield increases were applied they would most probably be on the permanent pasture and temporary grass areas rather than the poorer, rough grazing areas. In total this area equates to about 110,000 hectares (after taking into consideration the likely reduction in grass area if the ESA scheme was discontinued) and would imply that all of this area would be subject to grass yield increases. In addition a significant part of the area on which yield increases would be sought may be on rough grazing/unimproved grassland, some of which may have been previously converted from permanent and intensively managed grass during participation in the ESA scheme. Without further questioning of some of the participants it is difficult to assess probable intention. Against this background, our analysis was made under the key assumption that hay is mainly produce on temporary grass and permanent grassland is used mainly for grazing. Under this assumption the authors consider the income change impacts discussed relating to both cereal and grass production to be reasonable although the changes associated with grass production are probably overestimated possibly by 15-20% (it should be recognised that the sample bias in favour of large farms in the Lake District is probably the cause of this over estimation).

Table 2.36: Income change impact if ESA scheme curtailed, as a result of changes to yield and input usage: arable enterprises (weighted up to all participants)

	Grass	Cereals	Total
Area on which change will occur (ha)	153,000	8,360	161,660
Change in output (tonnes)	241,700	4,275	245,975
Change in output (£)	+ 10,171,780	+ 470,280	+ 10,642,060
Change in input use (£)	+ 1,983,500	+ 388,130	+ 2,371,630
Net impact on income (£)	+ 8,188,280	+ 82,150	+ 8,270,430
Net impact/hectare on which change will occur (£)	+ 53.4	+ 9.8	+ 51.1

Table 2.37: Income change impact if ESA scheme curtailed as a result of changes to yield and input use: arable enterprises by ESA

ESA	Net income change (£)	Income change per hectare where change expected (£)
Lake District	+ 578,000	+ 48.5
Clun	+ 1,519,000	+ 50.05
Breckland	+ 92,750	+ 22.46
South Wessex Downs	+ 458,700	+ 47.73
Test Valley	+ 78,000	+ 47.60

*b) Livestock enterprises**Assumptions and approach*

- analysis was undertaken for the two main livestock activities sheep and beef enterprises for which livestock number and input changes were provided. It is presented per breeding animal;
- base performance rates (eg, lambs or calves per ewe or cow) were calculated from information provided by the respondents to early questions in the survey;
- changes (net increases) in livestock output were calculated using information provided to the questions relating to livestock number changes;
- net changes in and the base position for cash returns (output) were calculated using average prices of £35, £39 and £330 respectively for hill lambs, lowland lambs and calves (based on John Nix Pocketbook (1997));
- net income changes were calculated by examining the difference between net cash returns and changes to the main variable costs of compound feed, protein feed/straights and hay. The following standard prices for these products based on current average 1997 rates were used: compound feed £140/tonne, concentrates £250/tonne and hay £80/tonne;
- all ESA-specific analysis was based on regional-specific average responses to the survey. Initial attempts to calculate net income forgone on this basis did however, produce results that were considered to be unrealistic and the analysis was re-examined using median data (ie, median flock and herd sizes, median expenditure on inputs).

Impact

A summary of the key income impacts is shown in Table 2.38. The key features are:

- the net output changes would be increases of about 73,800 sheep and 3,600 beef cattle. In terms of stocking densities, these are likely to increase by roughly 4% in the Lake District and Clun the main ESAs for which changes would occur. In contrast, reductions in livestock numbers in Breckland would result in a decrease in stocking densities of about 10%;
- the net impact on cash receipts would be +£1.7 million; about £1.2 million from sheep and £0.5 million from beef;
- additional costs associated with increased use of bought-in feed would be +£275,000;
- the net changes in income across all of the participants that would undertake changes to livestock numbers and feed use would be an increase of £1.5 million;
- the main changes in net income would occur in the Lake District and Clun. Nevertheless, in Breckland the net impact would be negative as a number of participants are likely to give up livestock production.

In interpreting the above analysis it is important to recognise that the data from the Test Valley and Breckland is derived from a small number of original survey participants which reduces the reliability of the analysis for these regions. Also, further analysis to derive impact changes per forage hectare has not been possible because the data available from the survey and other 'proxy' sources such as the Farm Business Survey does not provide enough detail or cover the wide range of data requirements¹⁴. Also, the sample bias of large farms in the Lake District probably resulted in an overestimate of the impact of discontinuing the scheme on sheep numbers by about 20%.

Comparing the analysis relating to changes in arable/grass enterprises and the livestock enterprises, this shows that in general a discontinuation of the ESA scheme would result in an intensification of some enterprise activities on some farms. Where livestock enterprise activities are likely to intensify this will mainly be via the rearing of increased numbers of ewes and lambs for which feed will mainly be derived from intensifying on-farm production of forage rather than buying in additional feed. This also suggests that a considerable part of the 'apparent' increase in net income from intensification of grass production is probably 'more theoretical than practical'. In other words, much of the increased grass production would not

¹⁴ To successfully derive margins per forage hectare would necessitate information about the extent to which the participants feed animals from forage grown on farms and the yields, costs etc of this production. To have collected such information in the survey would have required longer interviews and consequently made them too long (hence compromising the collection of the other data considered to be of higher priority). As an alternative, the FBS data available tended to be too general to adequately represent the ESA regions. For example, the FBS survey covering Clun covers the whole Midlands region and therefore the livestock enterprise results provided are an average representation of this region which is not typical of the Clun region.

be sold to realise the recorded increases in cash receipts and would be used within the farm business as feed for the increased number of livestock kept.

Table 2.38: Income change impact if ESA scheme discontinued as a result of changes to livestock numbers and feed purchases

	Lake District	Clun	Breckland	South Wessex	Test Valley	Total
Stocking rate change %	+4	+4	-10	+1	+7	-
Change in output (£)	+1,433,940	+295,470	-137,670	46,320	103,080	1,741,140
Change feed purchases (£)	+149,760	102,290	-1,680	25,660	-1,400	274,630
Net impact on income (£)	+1,284,180	+193,180	-135,990	20,660	+104,480	1,466,510

2.12 Comparison of income effects with uptake data

It was originally intended (at the start of the project) to attempt to compare the income effects with the results of the price testing by plotting alongside the uptake curves, the estimated income loss from participation experienced by farmers in the scheme. This has not been undertaken primarily because, at an early stage in the research it was agreed with MAFF that the survey research should focus on participant future intentions rather than the impact of scheme membership on farm businesses and income. As a result, it has not been possible to collect the necessary base data to plot the 'income effects'.

Nevertheless, some analysis of the income effect and uptake curve is possible. Drawing on the analysis and survey results reported in this and earlier sub-sections, it is evident that there is a significant degree of consistency in the results. Key features are:

- if the ESA scheme was discontinued the main 'reaction' by participants would be to intensify production (aiming to increase yields and livestock numbers), although it is important to recognise that at least half of the participants would still not expect to or perceive it possible to make such changes;
- the nature of the yield, area and livestock number changes indicated by the participants suggest that most of the intensification would take the form of keeping more livestock and feeding these animals mostly from increased on-farm production of grass/forage;
- the estimated income effects of changes from discontinuing the scheme (exclusive of the impact of loss of payments) are limited. The net impact on gross income of the livestock and cropping changes examined amounts to about +£60/hectare on the land where change would occur (assumed to be on about 160,000 hectares: Table 2.36) or about +£28/hectare across all of the land in the scheme. Nevertheless, as indicated the use of most of the additional grass production for on-farm use, means that these figures are probably an overestimate of the positive impact on income from intensification. These positive income effects compare with the loss of ESA payments roughly equal to £113/hectare (based on survey data relating to area in the scheme, average estimated share of ESA payments in total revenue and average total revenue). Therefore, it is not surprising

that the majority of participants perceive that they would be worse off if the scheme were to discontinue. About half do not perceive that they could offset the loss of ESA payment revenue by intensification and many who would seek to intensify would fail to fully offset the loss of payment revenue. There are, exceptions who do perceive that they can offset the payment revenue loss, and these were mainly found amongst the participants that indicated they would seek to intensify, amongst the larger farmers (over 100 hectares and over £160,000 turnover) and in ESAs such as South Wessex Downs and the Test Valley where the lowest proportion of total farm areas had been put into the scheme (ie, where dependency on the scheme has been lowest);

- d) the inferences drawn from the analysis of impact if the scheme was withdrawn are also consistent with the price testing responses. Specifically, if ESA payment levels were reduced by one-third, the majority in all ESAs would not accept such cuts and would presumably leave the scheme. The highest concentration of rejection of such a level of payment cut was in Clun where the highest level of ESA scheme dependency occurs (99% of all eligible land is in the scheme) and South Wessex Downs where there was a high concentration (relative to total numbers in the scheme) of participants indicating dissatisfaction with elements of the scheme. In the other three ESAs, about a third of the participants (nearly half in Breckland) would accept a 33% cut in payment levels. These tended to be participants who were less dependent on the scheme, and larger farms (over 100 hectares and over £160,000 annual turnover). Cross examination of different survey question responses also suggested that a significant proportion of these participants were also ones that considered they could and would intensify their farming enterprises to offset loss of ESA payments if they left the scheme/the scheme was discontinued.

3 ESA non-participants

3.1 Survey design

The main features of the non-participants' survey design were as follows.

a) Interview method

All interviews were conducted personally with ESA non-participants. The reasons for conducting personal interviews were as indicated in sub-section 2.1 although an additional reason was to provide for consistency in comparisons with the participants survey.

b) Stratification and size of sample

The sample size and stratification criteria were agreed at the outset with MAFF. A total of 150 non-participants were surveyed to provide results that were broadly comparable with scheme participants in the ESA II and III regions and were reasonably statistically significant. This sample was stratified to give a reasonable representation of the three ESA regions to be examined, farm type and farm size within each ESA region. MAFF provided a base list of non-participants based on annual census returns and candidates for interview were selected on a random basis from this¹⁵. A breakdown of the interviews achieved is shown in Table 3.1. This shows that the responses and interviews achieved were in line with the targets set.

In total, 365 non-participants on the base list were contacted in order to achieve the number of interviews of 140. The main reasons for the relative high number of refusals, rejections and non-contacts were farms being too small or not a farm (including those under 10 hectares in size and therefore considered for the purposes of this study, too small to be comparable with representative farms in the scheme), lack of time available, no reply after three separate attempts to contact and the base information relating to addresses, telephone numbers being incorrect which accounted for 35%, 13%, 16% and 18% respectively of the total rejections.

The average length of interview was 42 minutes.

c) The questionnaire and timing

The survey was conducted between the last week in March and the first week of May 1997 to a questionnaire designed in consultation with MAFF. A copy of the questionnaire is shown in appendix 1. The main subjects addressed were:

- base information about the farm (eg, age of farmer, enterprises, turnover, inputs used, outputs, non-farm activities, size of farm);
- knowledge and awareness of the ESA scheme;
- reasons for not joining the scheme and key aspects that might induce joining;
- types of land, landscapes on their farms;
- perceptions about general developments in the future;

¹⁵ Originally Clun was excluded from the survey. The Test Valley was later excluded because of a lack of adequate numbers of farmers in the ESA to survey.

- reaction to price/payment offers for entry of different land types into different tiers of the scheme.

Table 3.8: Interviews achieved relative to breakdown of ESA non-participants

ESA	Total number of addresses provided from census	Target number for interview	Interviews achieved
Lake District	1,800	50	52
Clun	not applicable	0	0
Breckland	340	50	49
South Wessex Downs	69	50	40
Test Valley	not applicable	0	0

Note: Failure to meet target in South Wessex Downs was because only 40 non-participants were identified as willing to be interviewed. The remainder were unable to be contacted or rejected for being 'not a farm/too small'.

3.2 Base features of non-participants

The reader should note that all figures reported for this survey are unweighted and refer to the non-participants interviewed only. Without details of all farms and land owned in each region it is not possible to weight up the results, as is possible in the participants survey.

a) Area farmed

A breakdown of the area farmed and its main uses is shown in Table 3.2. Of the nearly 17,110 hectares of land farmed by non-participants 58% is down to grassland (compared to 80% for the participants)¹⁶.

¹⁶ The very high share for grassland recorded for the participants survey is the weighted up share for all participants. The weighting up process is heavily influenced by the dominance of the Lake District where almost all land is down to grass. If the unweighted participants figures are used, 61% of the total is down to grassland.

Table 3.2 Land usage of non-participants' farms

Usage	Area (ha)
	all non-participants
Winter cereals	3,734
Spring cereals	795
Oilseed rape	440
Sugar beet	518
Potatoes	26
Other arable	810
Temporary grass	1,870
Permanent grass	6,326
Rough grazing	1,861
Woodland	427
Set-aside	304
Total	17,111

Base: 141 non-participants

The average area farmed by all non-participants was approximately 121 hectares, ranging from an average of 104 hectares in the Lake District to 212 hectares in South Wessex (Table 3.3). The average area farmed was not skewed by the presence of a few very large farms (as in the participants survey) with the mean being similar to the median areas (also very similar to the median average areas for the participants surveyed).

Table 3.3: Area farmed by non-participants in ESAs

Area	Numbers farming in each size category			
	Lake District	Breckland	S Wessex	Total
Under 20ha	7	19	2	28
20-49ha	9	7	7	23
50-99ha	17	12	9	38
100-199ha	13	8	10	31
200 plus ha	6	3	12	21
Average area farmed (ha)	103.6	65.8	212.5	121.4

Base: 141 non-participants

b) Land ownership

Forty per cent of the non-participants own all of the land they farm whilst for 11%, all land is rented. For the remainder, farmed land is a mix of owned and rented (Figure 3.1). About 45% of the non-participants rent some land on a long term lease basis and 25% rent on a short term basis. Outright ownership is greatest in Breckland (where 47% of non-participants own their farmland totally) and lowest in the Lake District where 31% of non-participants totally own the land they farm.

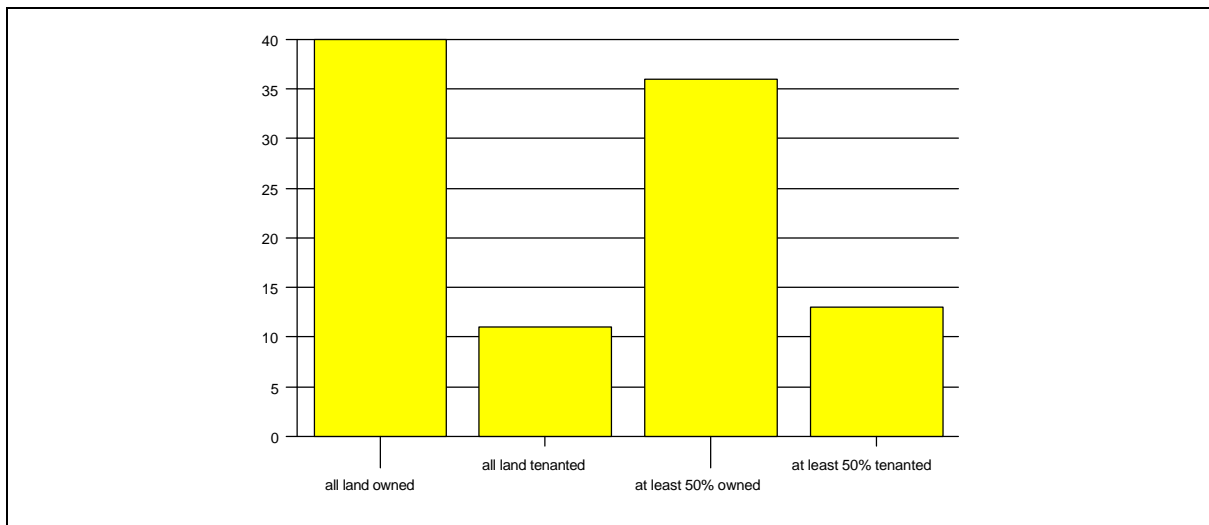


Figure 3.1 Ownership of land farmed by non-participants

Overall, about 10,610 hectares of the non-participants farmed land (62% of the total) is owned with the balance under tenancy arrangements (split roughly equally between long and short term tenancies). These ownership features are broadly similar to the participants although the level of outright ownership is a little higher for the non-participants.

c) Main land use/enterprise mix

A broad profile of crops and enterprises is shown in 11. Six per cent of non-participants are entirely arable (all in Breckland) and a further 21% largely arable (all in Breckland and South Wessex). About 55% of the non-participants are entirely grassland and 13% largely grassland. The grassland dominated uses are concentrated in the Lake District.

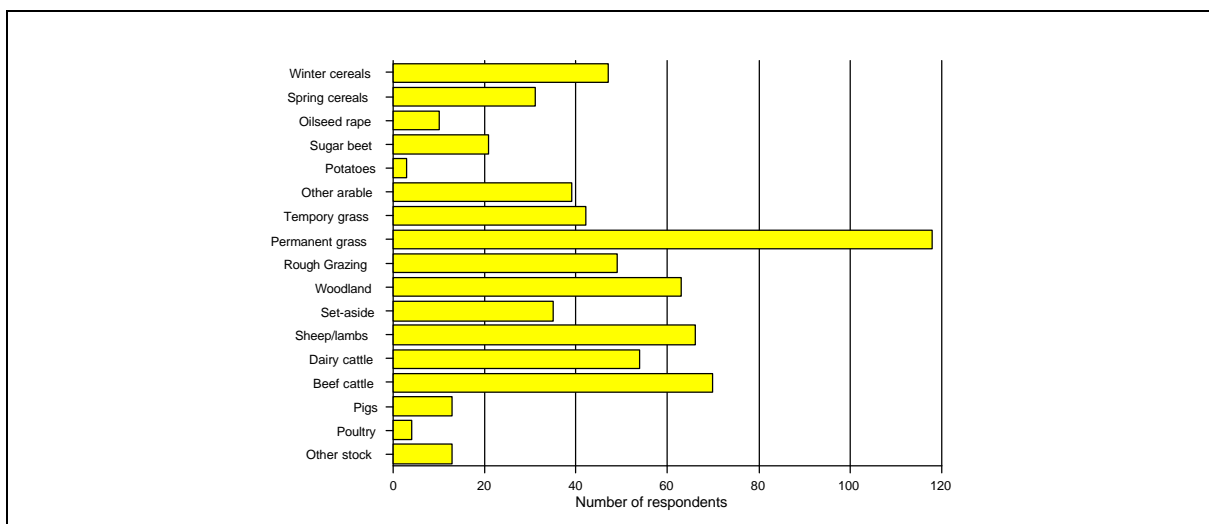


Figure 3.2 Profile of main enterprises amongst non-ESA participants

A breakdown of livestock enterprises and numbers kept is shown in Table 3.4. This highlights similar features to the participants survey whereby sheep enterprises dominate, especially in the Lake District.

The average flock size was about 870 sheep per farm keeping sheep. Where dairy and beef cattle were kept the average herd sizes were 88 and 111 respectively. For both dairy and beef herd sizes these are broadly similar to the participants. For sheep, the average flock size for the non-participants is significantly lower than the participants (1,200).

Table 3.4: Livestock numbers on non-participants farms

Livestock	Total numbers
Lowland ewes	7,493
Upland/hill ewes	14,174
Lowland lambs	10,546
Upland/hill lambs	24,447
Cows/heifers in milk	4,641
Calves for replacement	2,129
Suckler cows for beef	1,557
Other cattle	4,621
Sows and gilts	1,422
Other pigs	36,766
Table poultry	12
Laying birds	21,524

Base: 141 non-participants

d) Use of Common Land

Ten non-participants graze livestock on common land. These were all located in the Lake District. The livestock grazed were almost all sheep with only two respondents grazing cattle and sheep. The average number of sheep grazed on common land was 544 (compared to the average of 742 in the participants survey). All of the farmers share their grazing rights with the average number sharing the rights being twenty farmers.

Of those grazing common land, two indicated that all of this land was covered by an ESA agreement and another one indicated that some of the land was covered by an ESA agreement.

For the remainder, six indicated that none of the common land was in an ESA agreement and one did not know/did not answer the question. The main reasons cited, (six respondents offered no reasons), for common land not being in an ESA agreement were:

- cannot reduce stock numbers to comply with regulations (3);
- cannot get everyone to come into the agreement (3).

In total (unweighted) about 15,000 hectares of common land was recorded as grazed by non-participants of which about 4,550 hectares is within ESA agreements. However, this probably overstates the physical area grazed in ESA agreements because of double counting of the same area by respondents. The total number of stock grazed is about 5,440 sheep and 21 cattle. Non-participants use of commonland for grazing is very similar to usage by participants except in one area; the average number of stock grazed on commonland by non-participants is significantly lower than participants.

e) Input usage

Table 3.5 shows details of the main inputs used on non-ESA participants farms in the last year.

The main inputs used are, not surprisingly given to the dominance of livestock and especially sheep enterprises, livestock and feed purchases. Where inputs such as fertilisers and pesticides are purchased, most are in the regions where arable farming is more important to the non-participants (eg, South Wessex Downs and Breckland). These regions are also the ones where greatest use of contractor services occur. Examination of the average level of purchases per participant¹⁷ (mean and median) shows that the average (mean) figures are somewhat skewed upwards because of the purchases of a limited number of larger farms, with the median figures probably giving a more representative average value of purchases. This is most noticeable for feed purchases where a small number of respondents in South Wessex and Breckland (including one intensive pig producer) have skewed the mean figures. The median level of usage of most inputs was similar to the participants survey although non-participants usage of bought-in feed, fertilisers and pesticides tended to be higher than participants usage.

A comparison of the median value of usage between participants and non-participants (8) shows that non-participants expenditure on almost all inputs is higher than participants expenditure, especially bought-in concentrate feed and fertilisers. Participants however, have a higher median level of expenditure for bought-in hay and livestock purchases.

¹⁷ Per participant making a purchase **not all** participants.

Table 3.4: Direct costs of non-participants in last year (£)

Item	Total expenditure in last year (£)	Average expenditure for all who undertake expenditure	Median value of expenditure (£) for all making purchases	Ratio median value to participants median value	ESA specific comments
Livestock purchases	1,020,000	13,767	3,725	0.94	80% in Lake District
Compound feed	5,040,000	56,655	7,630	2.13	Two thirds in Breckland (figure skewed by one very large pig producer)
Protein concentrates	437,500	15,093	3,750	1.8	Two thirds in South Wessex Downs
Hay/other feed	138,100	3,214	1,320	0.88	As compound feed 50% South Wessex, 25% each in Lake District and Breckland
Fertiliser	848,500	7,202	3,720	1.6	Split roughly 50% South Wessex and the balance evenly between the other two regions
Pesticides	560,000	6,441	675	2.33	Mainly Breckland and South Wessex (about 45% each)
Fuel, lubricants	525,100	4,139	1,875	1.08	Distributed broadly evenly across all three ESAs
Contractor services	518,000	4,885	1,944	1.37	Highest value in South Wessex (60%). Balance split roughly evenly between the other two ESAs

Base: 141 non-participants

f) Non-farming income

Approximately half of the participants (50%) have sources of non-farmed income. This is broadly consistent across all of the ESAs although the highest proportion of farmers with non-farm income sources were found in the Lake District (56%) and the lowest proportion with non-farm income sources were in Breckland (41%). This distribution and relative importance of non-farming income was consistent with the participants survey where about half of the respondents derived income from non-farm sources. A breakdown of the main non-farming activities is shown in (Table 3.6).

Table 3.6: ESA non-participants: non-farming income types unweighted (ie, survey results)

Type	Number	Comments
Off-farm employment	20	Broadly distributed across all ESAs
Accommodation	13	Mainly in the Lake District and Breckland
Contracting	29	Highest incidence in South Wessex and Breckland
Leisure/Sports	5	Broadly distributed
Camping/Caravanning	10	Mainly in the Lake District
Forestry	6	Mainly Breckland
Farm Shop	4	Mainly Breckland
Haulage	5	Mainly Breckland
Processing	1	
Others	11	
TOTAL	104	

Note: Some participants had more than one source.

Of the non-participants deriving income from non-farm sources, 90% provided indicators of the range of income derived from this source. Within this group, the average annual income from non-farming income was about £19,800. However, this average was heavily influenced by several farmers in Breckland with relatively high levels of non-farming income. If the median level of income is used, this is £3,100 within a range of about £2,500 in Breckland to about £3,875 in South Wessex. The averages are lower than the median in the participants survey (£9,520).

This is probably partly due to the limited coverage of the non-participants survey (eg, there is no coverage of the Test Valley where the highest levels of non-farm income were found in the participants survey) although it may also be that those in the ESA scheme tend to be generally less specialised agricultural producers than those outside the scheme.

g) Employment on the farm

A total of 395 full-time equivalent staff are employed on the non-participant farms surveyed (141 non-participants). Key features of the employment were:

- about 80% of employment is full time and 75% of this full-time staff are family;
- non-family staff dominate part-time and casual employment;

- the highest concentration of family employment (both full and part-time is found in the Lake District with the highest concentration of part-time and casual staff found on farms in the South Wessex Downs and Breckland);
- the average number of employees was 2.8 within a range of 2.3 in the Lake District to 3.2 in Breckland.

All of the above features are consistent with the participant survey findings, although the range for the average number of employees was a little narrower. The median numbers were broadly similar (slightly lower) to the mean numbers in both surveys.

h) Main enterprises

Table 3.7 shows the importance of more than one enterprise in contributing to income amongst ESA non-participants. Key features include:

- 11% are mostly dependent on non-agricultural enterprises. These are mainly found in Breckland where 24% of non-participants derive most of their income from non-agricultural sources;
- a single enterprise dominates income generation activities for 35% of non-participants. These were also found mainly in Breckland (mostly arable dominated). This was the most common enterprise number/mix;
- two enterprises dominate income generation activities for about 28% of non-participants. These double mix enterprises included arable, dairy, beef and sheep enterprises with livestock being the main income generating activities in the Lake District, arable and sheep being the main mix in South Wessex Downs and arable/non-farming in Breckland (the non-farming activities were mainly non-farming jobs).

Table 3.7: Main enterprise contributions to income (unweighted)

	Number of participants	%
Non-agricultural sources account for the main source of income	16	11
Farms with only one enterprise accounting for all income	50	35
Farms with two enterprises accounting for all income	40	28
Farms with three or more enterprises accounting for all income	35	26
Total	141	100

i) Ownership/land manager type

About sixty per cent of the respondents are in family partnerships and a further third are sole proprietorships. The balance was accounted for by non-family partnerships (4%) and limited companies (3%). The limited companies are all in Breckland and South Wessex Downs. This ownership distribution is similar to the participants although there was a slightly higher proportion of the participants as family partnerships than the non-participants.

j) Age of farmer

The age profile of the ESA non-participants was also broadly similar to the participants although whilst the largest group (49%) were in the age range 45 to 65, this was lower than the proportion of participants in this age range (57%). There was no significant difference in age profiles between the three ESA regions examined.

k) Membership of organisations

Non-participants' membership of organisations was very similar to those of the participants. Almost three-quarters are members of Farmers Unions and about a third, members of the Country Landowners Association.

l) Farm/business turnover in last twelve months

The range of business turnover in the last twelve months of the participants is shown in Figure 3.3. Compared to the participants this shows that a significantly lower proportion of non-participants (52% as compared to 62% for the participants) were under £120,000. However, this mainly reflects the non-coverage of Clun in the non-participants survey where a relatively high proportion of participants with turnovers under £120,000 were located.

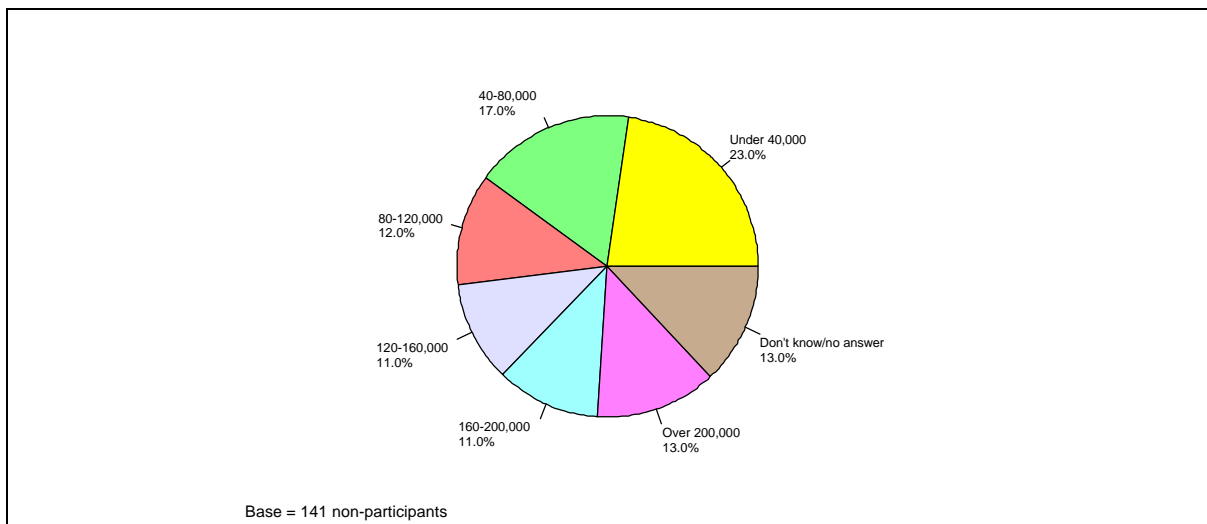


Figure 3.3: Business turnover in last financial year: non-participants

The smallest business turnover levels (under £40,000) were most numerous in Breckland and those in the range £40,000 to £120,000 were most numerous in the Lake District. The highest concentration of those with turnovers over £160,000 were found in Breckland and South Wessex Downs, showing a degree of income group polarity in Breckland at high and low levels.

The average level of turnover amongst the non-participants was about £128,000 compared to over £160,000 for the participants.

3.3 Awareness and attitudes to the ESA schemes

The non-participants were then asked a series of questions about their awareness, understanding and attitude to the ESA scheme.

3.3.1 Eligibility for claiming financial support or qualification for agri-environmental

Table 3.8 shows the level of awareness relating to eligibility for various agri-environmental schemes. The main features of the responses are that there are high levels of awareness of eligibility for the ESA scheme relative to other schemes. However, there are still about one third of the non-participants perceiving that they are not eligible for the ESA scheme.

Table 3.8: Perceived eligibility for agri-environmental schemes

Scheme	% of respondents perceiving eligibility	ESA specific comments
ESA	68	Broadly distributed across all three ESAs but highest awareness in Lake District
NSA	4	All Breckland
Countryside access	4	Lake District and South Wessex only
Countryside Stewardship	9	Broadly distributed across all three ESAs
SSSI	10	Mainly South Wessex
Less favoured areas	8	All Lake District
Other	6	
None	16	Mainly Breckland
Don't know	4	

3.3.2 Attitudes to ESA participation

For those non-participants who were aware that their farms were in an ESA, just under half (42 respondents) had seriously considered entering the scheme and had made enquiries and a further 16 had seriously considered entry but not made enquiries. These were broadly distributed across the three ESA regions surveyed, although the highest incidence of consideration was in the Lake District and the lowest level of consideration in Breckland. The reasons given for not participating are shown in 11. This highlights the main reasons cited as the scheme being unsuitable for their farming systems, the number of rules/conditions and inadequate financial incentives. A limited number also indicated reasons which relate to the provision of information, publicity and marketing of the scheme. These reasons were broadly distributed across the three ESAs examined although the concerns about the suitability, level of rules and financial incentives were mostly drawn from respondents in the Lake District and South Wessex Downs. The other, lesser important reasons were mainly given by respondents in Breckland (this region was also where most respondents who didn't think their land was eligible or thought the scheme had not been fully explained were located).

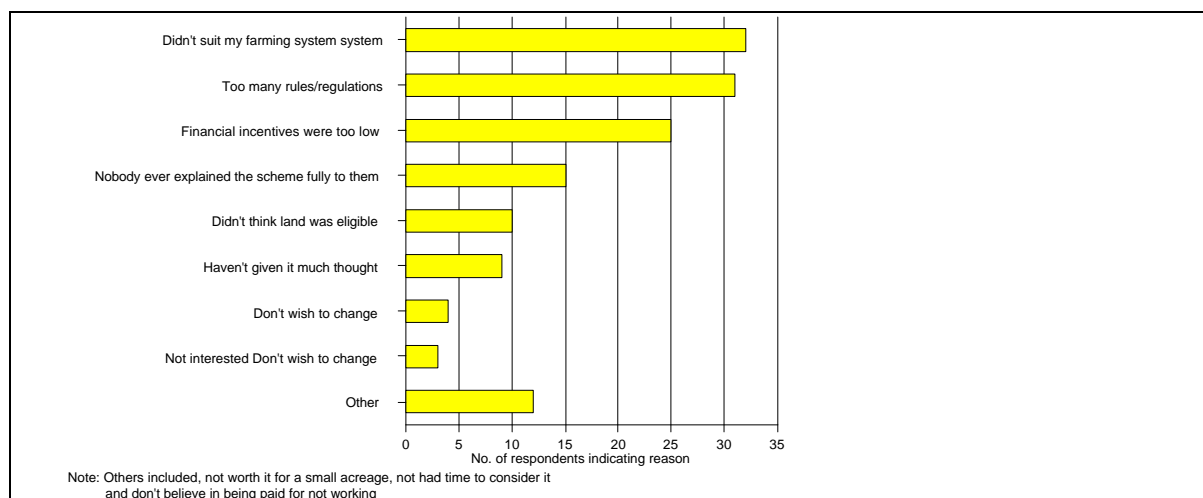


Figure 3.4: Reasons for not participating in the ESA scheme

3.3.3 Knowledge of farmers in the ESA scheme

About 60% of the non-participants (85) knew of other farmers in the ESA scheme with the majority (54) having talked to participants about their experiences. Whilst these were distributed across all three ESA regions surveyed, the highest incidence of knowledge of farmers in the scheme (and discussions with) was in the Lake District with lowest level of awareness of others in the scheme being in Breckland and to a lesser extent South Wessex Downs.

Where the non-participants were aware of other farmers in the ESA scheme about half (40) thought that these farmers were quite/very satisfied with the way in which their participation had developed. Only ten respondents (12%) thought that the participants they had spoken to were dissatisfied (the balance answered "don't know"). There were no distinctive differences in the nature of responses by ESA.

3.3.4 Factors influencing potential participation

The most important factors that would persuade non-participants to join the ESA scheme were:

- payments would have to be enough to meet extra costs or cover income foregone (61 respondents);
- payments would have increase total income in addition to meeting extra cost (56 respondents);
- if scheme entry made life easier (even if full costs were not covered: 7 respondents).

These factors were expressed fairly consistently across all three ESAs surveyed. It should however, be noted that 14 respondents would not participate at all (because of the restrictions in the scheme). These were mainly in the Lake District and South Wessex Downs.

3.3.5 Expected contribution from ESA participation

The non-participants were asked to provide broad magnitudes of likely changes in their farm income if they joined the scheme (ie, impact on **net** farm income). The key features of the responses (Table 3.9) were:

- 8% of all non-participants perceive that their net farm income would increase compared to 13% who perceive that their net farm income would fall;
- about a third of all non-participants think that there would be no change to their net farm income level;
- the focus of concern about possible adverse impact on farm income is in the Lake District. Those indicating possible positive impact on farm income were also in the Lake District;
- the bare minimum percentage increase in farm income that would be required before non-participants would consider joining the ESA scheme was an average of 17% (those specifying an increase would be required: 49). This was within a range of 13.9% in Breckland to 22.1% in South Wessex. It should however, be noted that a quarter of the non-participants (evenly distributed across the three ESAs) would not expect an increase in income;
- there was no significant difference in the nature of responses to the expected impact of ESA membership on farm income by farm turnover size.

Table 3.9: Impact of joining the ESA scheme on net farm income

Changes	Number of Participants	%	Key features by ESA
Increase by 5% plus	7	5	Highest concentration in the Lake District
Increase by 1-4%	4	3	Mostly South Wessex
Don't know/no opinion given	71	50	No ESA specific features
Decrease	19	13	Highest concentration in Lake District
Expect no change	40	29	No ESA specific features
TOTAL	141	100	

3.4 Types of land on non-participants farms and potential interest in ESA entry

A breakdown of the types of land that broadly coincide to some of the main ESA tiers in each of the three ESAs surveyed is shown in Table 3.10.

Table 3.10: Types of land on non-participants farms (possible tier eligibility)

Land type	Number of respondents		
	Lake District	South Wessex	Breckland
Arable/leys	13	29	30
Inbye	36	18	9
Intake	20	12	11
Meadowland	13	8	3
Downland turf	0	20	0
River valley grass	2	9	6
Other permanent grass	27	16	15
Headlands	0	6	10
Fell without heather	14	0	0
Fell with heather	4	0	0
Wetland	6	1	3

Respondents were then asked to consider which of these land types they would most likely nominate for entry into the ESA scheme if they were to join the scheme (they were asked to assume that scheme payments would be in the form of annual area payments). The main features of the responses were:

a) Lake District: the main interest focused on inbye, intake, other permanent grass and fell without heather (respectively 67%, 31%, 42% and 25% of all non-participants interviewed in the region);

b) South Wessex: the main land types that would be considered for entry into the ESA scheme were arable/leys, downland turf, inbye and other permanent grass (60%, 43%, 33% and 28% respectively of respondents in the region);

c) Breckland: the main interest focused on arable/leys and other permanent grass where 53% and 29% respectively of non-participants in the region indicated these land types as their main choices for possible scheme entry.

3.5 Perceptions about general developments in the future

3.5.1 Likely future ownership and farm size changes

The majority of non-participants (68%) do not expect any change in the nature of ownership on their farms over the next five years with a further 16% considering any changes only likely to be intra-family changes. Only 5% of respondents thought their farm would be likely to be sold¹⁸. There were no significant differences in the nature of responses between ESAs and these responses were almost identical to the participants survey.

¹⁸ The balance were "don't knows".

In relation to changes in the size of farms, about 55% do not expect to make any changes over the next five years. In addition to the 2% of participants who expect to sell their farms, a further 31% expect to acquire some further land. These were broadly distributed across all of the ESAs examined although there was an above average number (ie, more than 31% of all participants in an ESA) in the Lake District, and a below average number in the other two ESAs.

Ten respondents out of the 44 who indicated that they expected to acquire land suggested amounts of land they expected to acquire. This amounted to about 850 hectares of which about 20% would be within current ESA boundaries. There was only one respondent who expected to sell land who suggested an actual area for sale.

When asked about the possible impact of retirement, most farmers thought that other family members would take over the farm (45%) or were uncertain about what would happen when they retired (28%). A further 11% would probably sell the farm and 5% would let/rent out the farm. There were no significant differences in the nature of responses by the three ESAs examined and these results were almost identical to the participants responses to the same questioning.

3.5.2 Likely future changes in enterprises

About 60% of non-participants do not anticipate making any changes to their farm enterprises in the next five years. The highest number of farmers indicating that changes are likely were in the Lake District (26 respondents or 50% of those indicating change). Of those expecting to make changes (40% of all non-participants), over a third were in dairy (19 non-participants), just over 20% in beef (11 non-participants) and 15% in sheep (8 non-participants). The dairy, beef and sheep changes came predominantly from the Lake District and the arable changes (8 respondents) mainly from Breckland and South Wessex.

In the majority of cases for all of the proposed enterprise changes (about 60% of those indicating a change) there is likely to be an increase in yields, area or livestock numbers. The remainder plan to either reduce numbers or areas or go out of an enterprise altogether. As with the responses relating to ownership and farm size, these changes were broadly in line with those given by the ESA participants, although the proportion of non-participants expecting changes to their enterprises was lower than the participants.

3.5.3 Likely future interest in non-farming income

Non-participants expected future dependence on non-farming sources of income were:

- *for those with existing sources of non-farm income (72 respondents)* 60% expect no change. Of those expecting change (38%¹⁹) these were evenly distributed across the three ESAs. Broadly, about 60% of the non-participants expect dependence on non-farming income to increase (ie, the relative share and level of farm income will fall);

¹⁹ The balance of 2% answered don't know.

- *for those without existing sources of non-farm income (69 non-participants):* 80% expect no change. Of those expecting change (4%: the rest answered don't know) these were all located in the Lake District. As with those with existing non-farm sources of income, all expect greater dependency on non-farm sources in future;
- *the main nature of proposed changes* (where given) were increased use of properties for holiday lets (17% of those expecting a change), and an increase in the provision of leisure facilities (17% of those expecting a change) and retirement (20%).

3.5.4 Expected changes in the nature of farm support over the next five years

A breakdown of farmers expectations relating to future farm support is shown in Table 3.4, Table 3.11.

Key features are:

- the main expected change expressed by 62% of non-participants is a reduction in support levels. This was broadly reflected across all three ESAs;
- the second most significant expected change is for increased linking of support to environmental conditions (8% of non-participants). This was mainly in the Lake District;
- in relation to expected changes to the level of support, 80% of the non-participants expect levels to fall, 4% think support levels will increase and about 8% expect levels to remain the same (the balance answered 'don't know'). Those expecting support levels to decrease were more heavily concentrated in South Wessex. The limited few expecting support levels to increase were mainly in the Lake District;
- farmers 'on balance' expectations about whether they expected their farms to benefit or lose from likely future changes in the nature of farm support showed that just over half expect to lose out. This sentiment was consistent across all ESAs. Nevertheless, about a third indicated don't know - uncertainty about what will happen to future support and the likely impact on them;
- even though over half of the non-participants thought that they would lose out from future changes in farm support levels, a similar proportion (56%) were quite/very optimistic about the future prospects for their farm. Levels of optimism about future farming prospects were broadly similar across the three ESAs surveyed.

The above responses are very similar to those expressed by the ESA participants although the proportion of non-participants expecting support levels to decrease and to "lose out" as a result was higher than amongst scheme participantd.

Table 3.11: Expected change in EU support (non-participants)

Expected change	% of total expecting change	ESA specific comments (where relevant)
Reduction in support levels	62	No ESA specific features: broadly reflected across all regions
Increased link of support to environmental candidates	8	Mainly Lake District
More rules and regulations	4	No ESA specific feature
Change from headage to area payments (livestock)	1	
Depends on government/election	4	Mainly Lake District
Reduction in quotas	4	Mainly South Wessex
Others	9	
No change anticipated	7	No ESA specific features
Don't Know	11	
Level of expected change in support		
Drop substantially	43	Above average South Wessex, below average Lake District
Drop a little	37	Above average Breckland, below average South Wessex
Increase substantially	1	
Increase a little	3	
Stay about the same	8	Mainly Lake District and Breckland
Don't know	8	
'On balance' expectation		
To benefit	13	Broadly reflected across ESAs
To be a loser	57	Broadly reflected across ESAs
Don't know	30	Broadly reflected across ESAs

3.6 ESA payment levels required for scheme entry

After the farmers surveyed had discussed the possible land types they might be interested in entering the ESA scheme, each farmer was asked to consider various levels of payments for each land type²⁰. The approach to the price questioning was the same as applied to the participants except that the interviewer started with the lowest price and then asked the respondent to indicate one of four alternatives:

- a) Would totally reject the offer;
- b) Would be pretty likely to reject it;
- c) Be very unhappy about it, but feel that they would probably have to accept it;
- d) Accept it as a reasonable offer.

Unless option d) was selected, the question was then asked again but quoting a higher rate of payment. This process was then continued until option d) was selected for discrete payment increase levels which varied according to land type.

The results and analysis are presented in terms of the cumulative response as uptake curves and focuses on the same two main uptake curves relating to option d) 'the narrow definition' and option c) 'the broad definition' as presented for the participants survey. These were chosen for the focus of analysis because MAFF wish to explore the level of farmer sensitivity to changes in payment levels and to identify the payment levels at which most non-participants would be prepared to enter the scheme. Figure 3.5 to Figure 3.9 show the results for each of the main land types considered.

Examining the results, the following observations can be made:

a) All land types

As the responses to options c) and d) were virtually identical in all cases, cumulative response curves for option d) only are presented. This essentially reflects the fact that non-participants will only consider joining the scheme if they perceive payment levels to be reasonable. Of the land types examined, the three most common types chosen were arable/ley, inbye and other permanent grass (also downland turf in South Wessex). These are discussed below.

²⁰ Farmers were asked to respond to this question separately for payment levels up to a maximum of three different land types.

b) Arable/ley (Figure 3.5)

- at the highest payment level offered (£14/hectare) about a third of non-participants would consider the payment levels to be reasonable;
- in the Lake District, none of the non-participants with this land type considered either the current payment level (£12/hectare) or event the highest payment level offered to be reasonable;
- in Breckland and South Wessex, 35% and 42% respectively of non-participants with this land type considered the highest rate offered (£14/hectare) to be reasonable. At the current payment rate of £8/hectare in South Wessex, about 12% of the non-participants in this ESA would consider this as reasonable (this land type/tier is not part of the Breckland scheme).

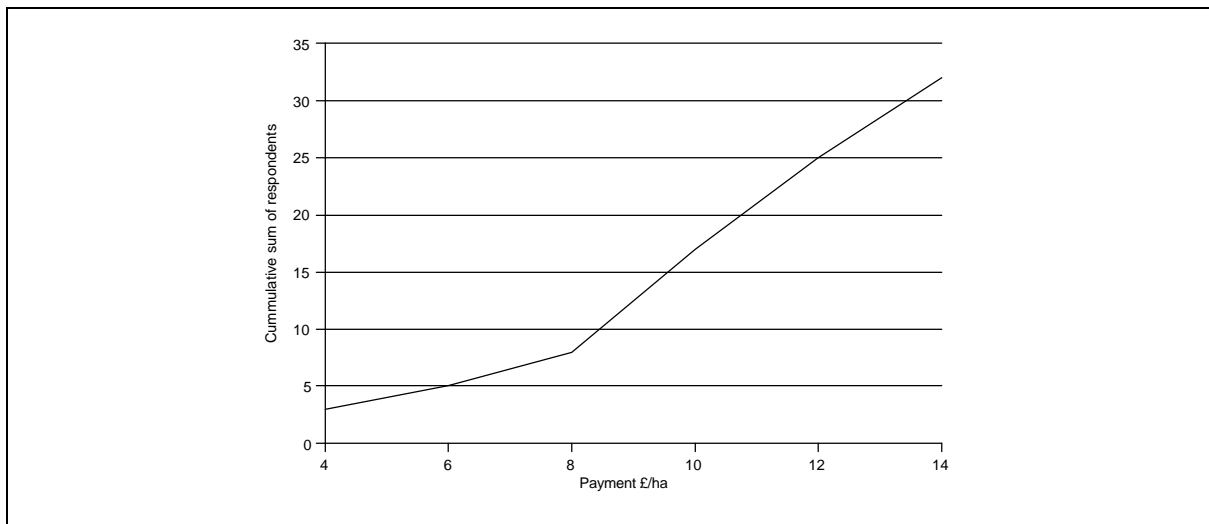


Figure 3.5: Reaction to payment level offers: payment levels at which respondents would accept as reasonable: arable/ley

c) Inbye (Figure 3.6)

- a third of all non-participants with inbye land types would consider the highest payment level (£55/hectare) to be reasonably acceptable;
- the range of non-participants with inbye land types that would consider the highest payment levels to be reasonable was between 29% of those in the Lake District and 46% in South Wessex. It is however, important to recognise that the inbye tier does not operate in the South Wessex and Breckland ESA schemes. In the Lake District where the tier applies, at the current payment rate of £47/hectare, 20% of the non-participants would consider this as a reasonable payment level.

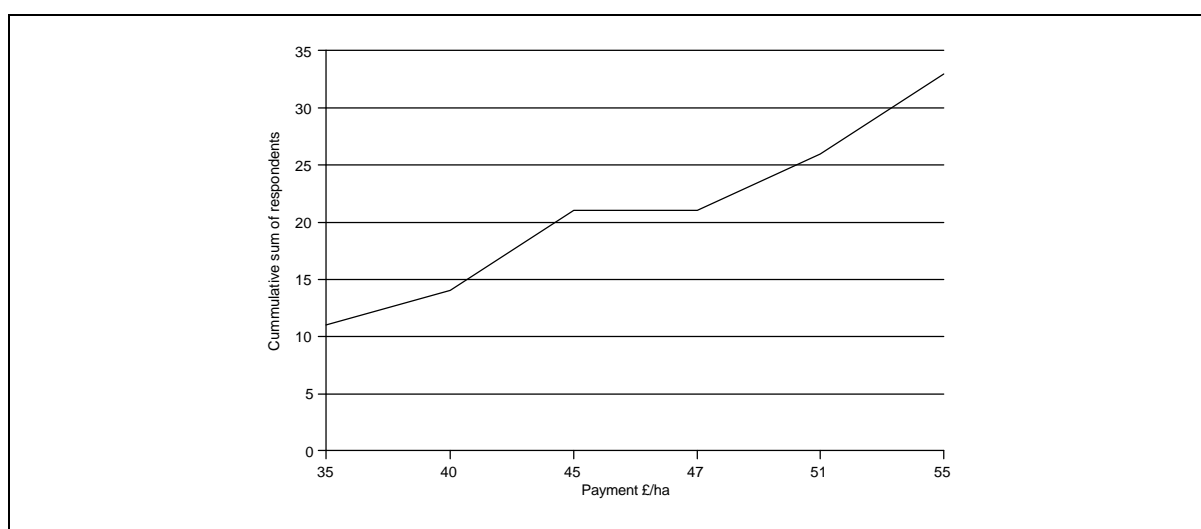


Figure 3.12: Reaction to payment level offers: payment levels at which respondents would accept as reasonable: inbye

d) Other permanent grassland (Figure 3.7)

- at the highest payment levels offered (£56/hectare), 43% of non-participants with this land type would consider this to be reasonable;
- at this level of payment, 45%, 57% and 32% respectively of all non-participants in South Wessex, Breckland and the Lake District with this land type would consider this a reasonable level of payment. This land type/tier - as responded to by the non-participants does whoever not operate in the Breckland and Lake District ESAs. For South Wessex Downs, where the tier is relevant to the current scheme, 9% of the non-participants would consider the current payment rate of £45/hectare as a reasonable level of payment.

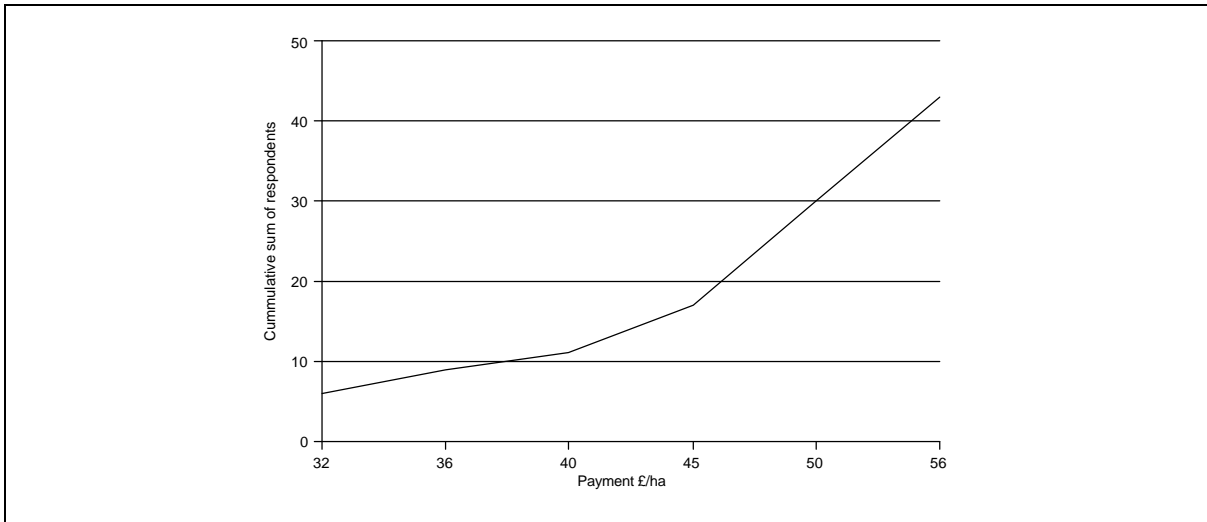


Figure 3.7: Reaction to payment level offers: payment levels at which respondents would accept as reasonable: other permanent grass

e) Intake (Figure 3.8)

- a maximum of 37% of all respondents with this land type would accept as reasonable the highest level of payment offered (£27/hectare);
- at this level of payment the proportion of respondents with this land type in each of the three ESAs which would accept the payment level was 14%, 6% and 17% respectively for the Lake District, South Wessex and Breckland. This particular tier does however only apply to the Lake District ESA (ie, the conditions discussed with the respondents related to the Lake District tier) where 9% of the non-participants would consider the current payment level of £22/hectare as reasonable.

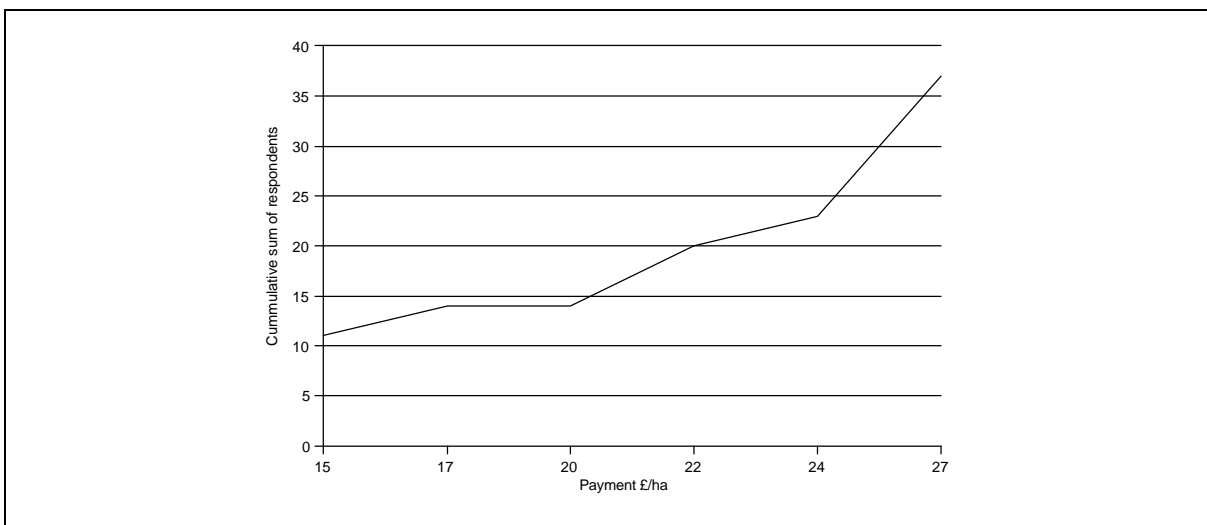


Figure 3.8: Reaction to payment level offers: payment levels at which respondents would accept as reasonable: intake

f) Downland turf (Figure 3.9)

- this land type is applicable only in South Wessex Downs, where 65% of the non-participants with this land type would consider the highest payment level of £65/hectare to be reasonable and at the current payment level of £55/hectare, 29% of all non-participants would consider this to be reasonable.

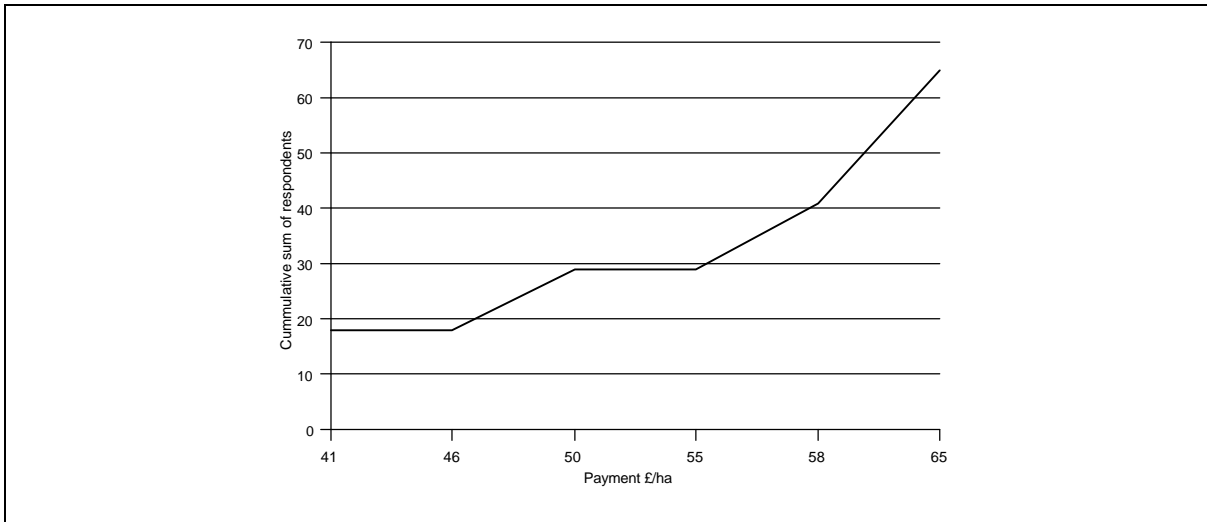


Figure 3.9: Reaction to payment level offers: payment levels at which respondents would accept as reasonable: downland turf

4 Summary of key findings of the participants and non-participants surveys and comparisons

To assist the reader in assimilating the main features, results and key similarities/differences, these are summarised in Table 4.1 to Table 4.5 below.

4.1 Summary of key features and comparisons: participants and non-participants

Table 4.1: Summary of key features and comparisons: participants and non-participants

Feature	Main similarities and differences
Base details of farms including size, ownership, enterprise mix, age	Broadly similar between the two. Balance of enterprise in favour of livestock relative to arable greater in participants. Similar ownership patterns, but with a marginally higher rate of outright farm ownership in non-participants. Participants survey was reasonably representative of ESA participants but probably over surveyed large farms especially in the Lake District. Reasonable coverage of all land types in each survey.
Input usage	Average usage of most inputs, especially bought in feed and inputs such as fertilisers and pesticides greater in non-participants.
Relative importance of non-farm income	Almost identical proportion derive some form of farm income between the two surveys and the same activities dominate (off-farm employment, contracting and accommodation). Average level of income derived is greater in participants.
Employment	Very similar employment patterns. Family labour dominate especially full-time. Non-family staff dominate part-time and casual. Similar average numbers employed.
Diversity of enterprises	Broadly similar except non-participants tend to be more specialised (higher proportion of single enterprise businesses).
Attitudes to participation/reasons for not joining	Majority of participants are very positive about the scheme. Main concerns and negative perceptions were underestimating time and costs involved and the administrative requirements. The main reasons for not joining amongst non-participants related to administrative requirements, level of changes required (unsuitability relative to farming system) and inadequate financial incentives. No significant difference in responses by ESA in either survey although dissatisfaction and reasons for not joining more a feature in South Wessex.
Motivation to join	Similar reasons endorsed by participants for joining and non-participants if they were to join. Financial benefit/considerations dominate although positive impact on the environment much more prominent a motivation amongst participants.
Use of commonland	Similar usage patterns in both participants and non-participants. Mainly sheep in the Lake District. Key difference is average number of sheep grazed on commonland is significantly higher for participants.
Perceptions about future activities	Both participants and non-participants have very similar views and expectations for the future. The majority of all respondents do not expect changes in ownership, enterprises, involvement levels in non-farm activities and size of farms in the next five years. The proportion of non-participants expecting to make changes is however, slightly higher than for participants.
Future policy impact	The majority of all farmers expect support levels to decrease and about half of all farmers expect to lose out. The second most expected change amongst all is increased linkage of policy to environmental conditions. Slightly more non-participants than participants expect to lose out from policy changes and are more pessimistic about their future in farming. These perceptions highlight the broad level of recognition amongst both participants and non-participants of the likely future nature of support facing UK agriculture in the long term.
Estimated contribution of scheme to gross income	Participants 11% (Range 4-15%) Expected contribution to join in non-participants: Average 17% (Range 14-22%).

Table 4.2: Summary of key impacts if ESA scheme discontinued

Aspect	Impact
Ownership of farm	No change
Area farmed	Almost all (87%) will make no change. Net impact of change is neutral with those increasing cancel out those decreasing.
Crop area	The vast majority (82%) would make no changes. Where change would occur this will be almost all grass (a net reduction of 7% of the total grass area across the ESAs). The cereal area would also increase by about 5%.
Yield changes	About half would aim to increase yields and most of this would relate to grass production. Highest incidence of change would be in Clun and the Lake District.
Input costs	About half would aim to change their use of inputs, with the main changes being related to increased fertiliser and pesticide use. These would be mainly used on grass and cereals. Highest incidence of extra use would be in Clun.
Livestock numbers	About 44% would change livestock numbers, mostly in the Lake District and Clun. There would be a net increase in livestock (about 55,000 sheep and about 3,000 beef cattle), mostly in the Lake District and Clun. However, there would be a net decrease in Breckland.
Feed use	About a third would change their feed usage (mostly in the Lake District and Clun). This would result in a net increase in the use of bought in feed.
Machinery/contractor use	14% would make changes, mostly more use of their existing machinery and use of contractors (again mainly in the Lake District and Clun).
Labour use	A fifth of participants would make labour changes, mostly increased hours for family labour and reduced hours for non-family. Very few changes in numbers employed would occur, with most labour changes being in the Lake District and Clun.
Non-farm income	Very little impact expected with about 10% indicating possible additional interest in such activities (mostly in the Lake District and Clun).
Impact on income	The majority (60%) would expect income to fall (concern about this was greatest in the Lake District and Clun). Those expecting to increase their income level and/or expect no change were mostly amongst those that would seek to compensate for loss of ESA payments via intensification and changes in enterprises. These were also mainly in farms with turnovers over £160,000 and farm sizes over 100 hectares.

Table 4.3: Summary of key impacts if some changes made to nature of scheme

Aspect	Impact
Reaction to changing payment basis to fixed entry fee plus annual payments	Only about a quarter thought this to be better than the current scheme, mainly in the Lake District. Main reason = more income and would benefit small farmers relatively more than larger farmers. Most thought the current scheme to be satisfactory and did not need changing and/or the proposed change was not significant.
Reactions to being offered a one-off payment to re-new agreements	Most thought this to be better than the current scheme although about 40% thought this would make little difference to their decision to stay/leave the scheme.
Where heard about the scheme	Most common source was MAFF/ADAS.
Attitude to renewal	90% would renew if offered on current terms, but most of these would prefer to wait until contractual renewal dates than renew now if offered. Those most likely to leave the scheme found in South Wessex and Test Valley.

4.3 Problem areas in existing ESA scheme

Table 4.4: Problems with existing scheme

ESA	Problem Tiers	Issues
Lake District	Meadows Heather fell	Input and timing restrictions, stocking limits. Payment levels too low.
Clun	The three reversion to unimproved grass tiers	Fertiliser and timing restrictions, weed control. Payment levels too low for unimproved grass and hedges.
Breckland	River valley grass	Weed control, grazing and pesticide use restrictions. Payment levels too low in conservation headland and reversion to heathland.
South Wessex Downs	Permanent grass Downland turf Downland turf creation	Grazing and pesticide use restrictions, weed control. Dissatisfaction with payment levels in most tiers, except all land and permanent grass.
Test Valley	Unimproved grass	Weed control and poor grass performance. Dissatisfaction with payment levels for unimproved grass.

4.4 Impact of changing ESA payment levels

Table 4.5: Summary of price testing responses

ESA	Proportion who would accept 30% cut in payment level (%)	Proportion that would accept current levels (%)	Proportion that would accept 20% increase (%)	Key points
Lake District	34	74	100	At current payment levels main problem tier is heather fell (28% would not accept). Responses consistent with earlier satisfaction responses.
Clun	0	92	99	Main problem tiers at current payment rates are all land, hedges and unimproved grass. Farmers probably overbid their responses to the questions for most tiers.
Breckland	48	88	97	Only problem tier at current payment rates is heathland. Responses consistent with earlier satisfaction responses.
South Wessex Downs	4	83	100	Main problem tiers at current payment rates are downland turf, downland turf creation, all land and permanent grass. Responses are consistent with satisfaction responses.
Test Valley	32	78	88	Main problem tier is unimproved grass. Farmers probably overbid their responses to questions for most tiers.
ALL	30	85	98.5	No significant difference in responses by farm size, turnover or age.
<u>Non-participants</u>				
South Wessex				
- arable ley		12		
- permanent grass		9		
- downland turf		29		
Lake District				
- in by		20		
- intake		9		

5. Comparing socio-economic impact across agri-environmental schemes

5.1 Introduction

Sections two to four focused on assessment in the ESAs II and III of the socio-economic impact of changing the nature of the ESA scheme and attitudes towards the scheme amongst both participants and non participants. This section reviews the documented socio-economic effects of other agri-environmental schemes in the UK (including earlier and other ESA analysis) so as to enable a comparison with the results of this study.

The section covers the following:

- an overview of other schemes examined;
- the socio-economic impact of schemes (where studies have been made and are in the public domain);
- examination of the potential impact of scheme withdrawal and/or payment changes (where studies have been made and are in the public domain);
- a comparison of the key findings of each study including the findings of this (forward looking stage II and III ESAs) study.

5.2 Schemes examined

The main schemes examined were as follows.

a) Sites of Special Scientific Interest (SSSIs)

Since 1949 there has been provision in UK legislation for the designation of Sites of Special Scientific Interest (SSSIs). Under this designation land is expected to be managed in a way that does not damage the natural resources of the land and since 1981, farmers of SSSIs have been required to notify the then Nature Conservancy Council (NCC), now English Nature, of any potentially damaging operations that they intend to make to the sites. The intention of notification (four months notice is required) is to provide the NCC (EN) with time to either persuade farmers to alter their plans and/or to negotiate a rate of compensation for 'not' implementing the proposed damaging activities or for adapting an agreed land management agreement²¹. There are currently approximately 45,000 hectares of SSSI sites in England under management schemes.

b) Woodland Grant Scheme

The Woodland Grant Scheme (WGS), administered by the Forestry Commission, provides incentives to create and manage woodlands on sites throughout the UK. There are a plethora of support payments ranging from planting grants to a community woodland supplement, although the main focus for the scheme is development/enhancement of existing woodland.

²¹A nature conservation order may be applied if the farmer proves uncooperative (Whitby and Lowe, 1994).

c) Farm Woodland Premium Scheme (FWS)

The Farm Woodland Scheme, launched in 1988 and later converted to the Farm Woodland-Premium Scheme (FWPS), has objectives of helping to diversify land use, enhancement of landscape, creation of new wildlife habitats, encouraging recreational use, expanding tourist interest, supporting farm income and rural employment, and to contribute to the UK's timber requirement. The FWPS provides both planting subsidies, and annual compensation payments for farm income foregone (applicants must first obtain approval under the Woodland Grant Scheme). This compensation is payable until woodlands provide their own income (between ten and forty years, depending on both tree species and management regime).

d) Farm Waste Grant Scheme

This scheme applies to Nitrate Vulnerable Areas, and provides a grant of 25% for expenditure up to £85,000 on installation/improvement to farm waste facilities.

e) Nitrate Sensitive Areas Scheme (NSAs)

This scheme was introduced by MAFF in 1990 as a pilot scheme with the aim to identify/test ways of reducing nitrate losses from agriculture to the groundwater, and covered about 10,700 hectares in ten areas. It was expanded in 1994 and now covers about 35,000 hectares in 32 areas of England.

The scheme has two main components, a basic and a premium element. The basic element comprises a package of measures including: adherence to recommended economic application rates for fertilisers; reductions below these levels for winter cereals and oilseed rape; a requirement for cover crops on land that would otherwise be bare over winter; a limit on annual organic manure applications; and, restrictions on the timing of applications of poultry manure and slurries.

The premium element offers payments for conversion of arable land to grassland with a choice of management options including: no fertiliser or manure applications (with or without grazing); permitted application of nitrogen up to 150kg/hectare per year with grazing; and the establishment of grassland under the auspices of the FWPS. Payments differ by area and agreements are made for five years.

f) Moorland Scheme

This scheme aims to encourage farmers to reduce stocking rates, observe a moorland management plan and to protect other environmental features on their land. The scheme is open to both owner occupiers and tenants, and common land may also be entered. Eligible land is within Less Favoured Areas, but outside ESAs. Applicants must enter at least 20 hectares of moorland containing at least 25% heather, and must agree to reduce their sheep flocks, for which a (£25) payment per ewe removed is made. There are also restrictions on input use, and management plans must be agreed. Agreements are usually for five years.

g) ESAs

ESA regions are those designated as being of national significance and distinct environmental interest. Within each ESA, farmers can enter land into the scheme and receive per hectare payments in return for maintaining or introducing pre-specified farming practices considered to

be more environmentally beneficial than normal, commercial practices. ESAs currently cover about 15% of the UK agricultural land (eg, more than one million hectares in England), although not all this eligible area has been entered into the scheme.

There is considerable diversity between ESAs: some are wetlands, some uplands, others cover mixed arable and grazing areas. However, they all have as a central feature of the maintenance and/or reintroduction of traditional, extensive livestock grazing systems. Most ESAs include provisions for restrictions on fertiliser use, stocking densities, use of herbicides and pesticides and installation of new drainage and/or fencing. Farmers may also adopt specified management practices for features such as hedges, ditches, woods, walls and barns.

Participants enter into a contract for the management of their land according to the prescriptions and payments set down in a number of tier options. The annual payments are set according to the management conditions imposed, hence rates of payments vary between areas, and also between tiers within ESAs. Payments for compliance with the less demanding maintenance options (Tier 1 demands) are lowest (eg, £12 per hectare per annum for arable and ley grass in the Lake District) and payments for land reversion with access are the highest, (eg, reaching £500 per hectare per annum in the Upper Thames Tributaries).

Payment levels were mainly determined on the basis of (average) extra costs incurred and/or output forgone from adopting the management prescriptions. The use of this flat rate payment mechanism implies that some participants tend to be over compensated and others under compensated for adhering to the management prescriptions.

h) Countryside Stewardship Scheme (CSS)

The Countryside Stewardship Scheme was initiated in 1991 under the auspices of the Countryside Commission, and is now administered by MAFF. The scheme focuses on target landscapes throughout England (except in designated ESAs), and offers both capital and annual payments for conserving, managing and re-creating valued landscapes whose survival and enhancement depends on certain agricultural practices. These 'valued landscapes' are: chalk and limestone grasslands; lowland heath; waterside landscapes; coastal land; uplands; historic parks/landscapes; and old meadow and pastures. In contrast to ESAs, where all eligible farms must be accepted if they apply to join, Countryside Stewardship is a discretionary scheme. This scheme also incorporates the former Hedgerow Incentive Scheme.

Participants may select landscape types and works to be carried out from a menu of management options.

i) Tir Cymen

This is the Welsh equivalent of the Countryside Stewardship Scheme, launched in July 1992 and administered by the Countryside Council for Wales. The aims and objectives of Tir Cymen are broadly similar to those of Countryside Stewardship. The scheme operates at three levels: firstly, there is a general payment for the whole farm for which the participant has to follow a code of good environmental practice. Secondly, additional payments are available for more restrictive management practices on identified habitats. Finally, specific capital payments can be made for environmental improvements carried out.

j) Habitat Scheme

The Habitat Scheme, established in 1994, aims to protect and enhance the wildlife value of water fringe, broadleaved woodland, species-rich grassland, and coastal belt habitats. The scheme operates across all of the UK and is separately administered by respective Departments of Agriculture in each country (ie, MAFF in England, SOAFD in Scotland, WOAD in Wales, and DANI in Northern Ireland).

The scheme is underpinned by several general management guidelines applying to all categories of habitat. These guidelines include:

- maintaining hedges, walls, fences and banks using traditional methods and materials;
- not removing hedges, etc., or constructing new hedges, etc. without approval;
- not draining land;
- not applying fertiliser (organic or inorganic), lime, fungicides, insecticides or herbicides (except for defined injurious species);
- conserving and maintaining all lakes, ponds and streams;
- not damaging or destroying features of archaeological or historic interest;
- retaining broadleaved trees;
- not removing boulders, or rocks from rocky outcrops;
- maintaining traditional farm buildings.

There are additional restrictions relating to each habitat category including specified stocking densities and constraints on certain operations. In return for adhering to these guidelines, scheme participants receive area payments (eg, £190 per hectare for water fringe habitats, £105 per hectare for broadleaved woodland, £110 per hectare for species-rich grassland, £100 per hectare for unimproved coastal belt and £245 per hectare for improved coastal belt).

5.3 Socio-economic impact of the schemes

Although the sub-section above highlights a number of agri-environmental schemes in operation in the UK, there have been few socio-economic assessments of their impact. At the time of writing (June 1997), the majority of socio-economic studies undertaken have concentrated on ESAs (the most important element of UK agri-environmental policy). The analysis below therefore focuses on these ESA evaluations although other studies relating to Countryside Stewardship, Tir Cymen, and the Farm Woodland Premium Scheme are also discussed below.

5.3.1 Farm Woodland Premium Scheme

Assessment of the economic impact of this scheme and its forerunner the Farm Woodland Scheme, was undertaken in Scotland and England. The assessment was largely based on farm survey work and covered 90 farmers in Scotland and 204 farmers in England (Crabtree and Appleton, 1992, Gasson and Hill, 1990). The main impacts identified were as follows.

a) Impact on labour (at the farm level)

In Scotland, the majority of planting was carried out by outside contractors and forestry consultants, with only 29% of blocks planted with farm labour. However, much of the

preparation work was carried out by farm labour. No additional jobs were created for on-farm labour, and no jobs were lost. The extra work provided for contractors was not quantified. The English study estimated that 37 additional jobs would be created over a ten year period, mainly amongst contractor labour (taking into account a net reduction in labour requirements as a result of reduced arable land usage).

b) Impact on input use and production (farm level)

The main impact was to reduce output of cereals, sugar beet, beans and peas, oilseeds, and grassland and forage; especially in England where most land entered into the scheme was formally arable land. On over half the area surveyed in Scotland (about 400 hectares) there was a loss in output as a result of planting, most notably where arable land had previously been planted. However, for a quarter of the farmers in Scotland, overall farm production was not reduced because previously set-aside land was put into the scheme or farming activities intensified on the remaining land (eg, by increasing stocking rates).

c) Impact on income (farm level)

The main costs associated with farm woodlands are establishment and management, and agricultural income forgone. Average establishment costs were identified as £1,750 per hectare for England and £963 per hectare in Scotland, although the variance around these averages for different species and labour type used was substantial. After taking into consideration the planting grant, an average net cost of £274 per hectare was incurred in Scotland. In relation to annual income the losses were partially offset by the annual payments made under the scheme but resulted in mean net losses for all land types of about £24 per hectare. There was however a high degree of variance according to different land types and land use forgone. Thus, in some cases there were mean net gains (where pre-scheme land was grass). Where woodlands were planted with timber production as the primary objective, the annualised cash flow for income more than compensated for the net costs of establishment and maintenance. In addition, a few farmers in England who used farm labour for establishment, and who qualified for the highest grant rate showed a positive net cash balance. In general, however net income impact was negative; average gross margin foregone was £420 per hectare for cash crops, and £457 per hectare for livestock. Excluding the potential sale of timber, the average participant in England suffered a net loss of £200 per hectare per year.

5.3.2 ESAs

Most of the published socio-economic assessments of ESAs relate to the first round of ESAs and were carried out between 1989 and 1991, with changes in farm income and farmer attitudes being considered important factors when reviewing the scheme. In almost all cases, detailed farmer surveys were carried out to identify trends in income, output, employment and attitudes of both scheme participants and non-participants.

The general objectives of the evaluations were:

- to estimate the effects of participation on farm inputs and outputs, including any changes on participants' land not entered into the scheme;

COMPARISON OF SCHEME IMPACTS

- to estimate the overall impact of the scheme in terms of production foregone and to calculate the Exchequer savings that could be expected;
- to investigate attitudes towards the scheme of both participants and non-participants.

In some regions, such as the Suffolk River Valleys, the North Peak, Breadaldene, and the Pennine Dales, an assessment of the impact of the scheme on the local economy and labour usage was also undertaken.

a) Impact on labour (at the farm level)

A summary of the changes to labour use in the ESAs is given in 8. Where estimates of the impact on labour requirements were carried out (eg, North Peak), results suggest that the impact on-farm labour requirements was minimal. However, there has been a significant increase in the use of services provided by contractors as a result of ESA related work, and the direct consequence of this has been increases in off-farm, full-time employment (eg, Breadalbane).

Table 5.1: Impact of ESA guidelines on labour

ESA Scheme	Summary of changes
The Broads*	Slight fall in both family and employed full-time labour
Somerset Levels and Moors*	Full and part-time labour employed in preference to casual
South Downs	85 to 125 full-time equivalent jobs created
Suffolk River Valleys	Estimated that the scheme retained 70 full-time jobs
Test valley	Use of additional contractors to top grassland
North Peak	27 full-time jobs created in shepherding and game-keeping
Pennine Dales*	No changes in on-farm employment, but an increase in contracting
Cambrian Mountains	No change in on-farm employment, but jobs may be being maintained
West Penwith	No change in on-farm employment
South West Peak	Increases in hedging and walling requirements, often supplied by contractors
South Wessex Downs	Increase in hedging requirements
Lake District	Increase in walling requirements
Breadalbane	33 full-time off-farm jobs created, mostly for fencing and dyking

* Actual question asked was concerned with effects if the scheme were to be withdrawn. The responses shown are therefore inferred.

b) Impact on input use and production (farm level)

The various studies show that ESA schemes have had an impact on the use of fertilisers, pesticides, herbicides and machinery. Machinery costs were reported to be higher as a result of entering land into an ESA scheme (eg, Shropshire Borders, Suffolk River Valleys), while use of inputs such as fertiliser and pesticides and herbicides were always lower. This is largely to be expected as most of the requirements involve reductions in input use.

In several areas and for most participants, the ESAs have had a minimal effect on crop output levels. For some, the only change has been a reduced level of forage production due to the restrictions on the hay/silage cutting dates. In the ESA of the Pennine Dales, for example, the buying-in of hay increased on 29% of agreement farms in response to hay yield losses resulting from adherence to the ESA management conditions.

For a few participating farmers (those who have opted for arable reversion, where available), there has been a substantial shift from arable to livestock production. In the Suffolk River Valleys it was estimated that between 1989 and 1992 the arable crop area on participants holdings had been reduced by some 2,455 hectares (about 29% of the area entering the scheme), while sheep and cattle numbers increased by over 6,000. The loss on income from sales of crops has therefore to some extent been offset by a rise in livestock gross margins.

There are stocking rate restrictions in most ESAs, and so in some cases there has been a movement away from intensive cattle and sheep farming. In the North Peak, livestock numbers (mostly sheep) had fallen by over 2,000 by 1989. Overall, the fall in grazing livestock units per farm has been limited. This has been mainly attributed to the most intensively used land not generally being put into the ESA agreements.

c) Impact on income (farm level)

Participation in the ESA Scheme has led to extra costs having been incurred on most farms involved (eg, clearance, maintenance of drainage ditches, stone wall repairs). In some cases a fall in income has occurred through loss of production and sales. In the vast majority of cases, the extra costs and loss in income have been more than outweighed by savings in fertiliser, lime and herbicide, and in particular, the ESA payments.

8 shows that a high proportion of the payments transferred to farmers were more than enough to offset the costs involved in complying with the ESA conditions. For example, in the Shropshire Borders ESA, of the £554,900 in total ESA payments, £471,000 `was used` to increase farm incomes. In the Somerset Levels and the Moors, the net incomes of the surveyed participating farmers rose by £97,300 as a result of ESA payments of £108,400 (ie, 90% of payments went directly to income and only 10% to cover costs).

This transfer of the ESA payments has been reflected in the income of participating farms, which has risen on average in all ESAs. The average yearly rise in income for each hectare of participating land varies substantially between ESAs, and between tiers within ESAs. The lowest estimated per hectare increases are in the South Wessex Downs (£4.70) and Exmoor (£11) ESAs, and the highest estimated increase in Breckland (Table 5.2). Where higher tiers of the ESAs involved converting land back to grassland, larger costs were involved, and this is reflected in lower per hectare income improvements.

Table 5.2: Impact on farming incomes, 1988/89 £'000s

ESA	Total ESA Payments £'000s	Total Income Increase £'000s	Income Rise per Farm £pa	Income increase £ha
The Broads			1,751	96
Somerset Levels/Moors			1,050	83 [T2 > T1]
South Downs			1,360	35 [T1 35;T2 21]
Breckland	464	413	3,623	106
Suffolk River Valleys 1988-92	4,723	2,901	1,686	80 [T1 60;T2 190;T3 15]
Test Valley	25	31	1,657	99
Shropshire Borders	554	471	2,507	35
North Peak 1988-1992	3,405	1,221		5-20
Cambrian Mountains	1,220	700	2,200	18
Avon Valley*		28.2	1,108	59
Exmoor*		296.7	1,154	11
Lake District*		1,571.5	2,965	27
North Kent Marshes*		188.2	4,826	64
South Wessex Downs*		65.1	651	4.7
South West Peak*		324.6	1,623	33

Notes: T = tier eg, T1 = tier 1

* Data for these ESAs is estimated for all participants, not just those interviewed

Source: Various MAFF published reports on impact of ESAs

5.3.3 Countryside Stewardship Scheme

This scheme has been evaluated for socio-economic impact in England from the perspectives of impact on labour (on and off farm), use of inputs, farm output and income (farm and non-farm).

a) Impact on labour (at the farm level)

Three-quarters of CS related work is undertaken by existing farm labour and a quarter is undertaken by outside contractors. The use of farm labour is particularly prominent for maintenance type work, whereas contractors are mostly associated with capital work. This suggests that the additional contractor work created by the CS Scheme has a more short term rather than long term impact since most, but not all, capital work tends to be undertaken in the first few years of an agreement. Any sustainable, large, positive impact on contractor work is therefore dependent on continued expansion of the CS Scheme both in terms of finances available and a willingness for farmers to enter the scheme. Contractor use was found mostly on farms with financial commitments over £40,000, where access and capital payments accounted for a significant part of total payments (ie, over 20%) and historic landscape types. Where outside contractors are used, the annual grossed up impact at the national level is equivalent to the hiring of about 48,250 man days (about 220 full-time job equivalents).

The overall impact of the CS Scheme on labour (on-farm) is extremely limited with the changes, where they occurred, being greatest among part-time rather than full-time labour, and among hired rather than family labour. The labour changes are also more prominent amongst participants with larger financial commitments (over £40,000 total), non-farmer owners, where capital payments account for 20%-50% of total payments, and for the chalk/limestone and historic landscapes. The net annual changes tended to be positive (when grossed up to a national level about 50 full time equivalent jobs).

b) Impact on input use and production (farm level)

About half of the scheme participants indicated that the CS Scheme had affected the use of inputs. Overall, the net annual impact of the CS Scheme is positive (a net positive impact at national level of about £0.3 million) with the largest positive impacts for the capital items of machinery purchases and fencing (mostly occurring as one-offs and short term purchases), and the largest negative impacts for fertilisers and crop protection/pesticides (which are more long term in nature). The longer term impact on input usage can be more readily associated with CS agreements in which revenue type payments dominate, whilst the shorter term (positive) impact on input usage can be associated with agreements where capital and access payments are more prominent.

A quarter of the scheme participants indicated that there had been changes in output/production. Overall, this impact is negative (at a national level equal to about minus (-) £4.9 million) with cereals and beef/cattle the sectors most affected. Output changes tended to be of a more long term nature than some of the short term input change impacts, and were greatest for participants with high levels of financial commitment (over £40,000), larger areas of land committed to the scheme, where access and capital type payments account for less than 20% of total payments (ie, where revenue payments dominate), and the waterside and historic landscape types.

c) Impact on income (farm level)

Although participants did not usually observe a change in income level, where changes did occur to total household income (farm and non-farm income), some positive impacts and some negative impacts were observed. However, there were more positive impacts than negative impacts. Changes in income ranged between +10% to +15% for positive changes, and -10% to -15% for negative changes. The positive income changes tended to be greatest for participants with smaller areas committed to the scheme, where the total financial commitment was under £40,000, where access type payments accounted for 20-50% of total payment type, capital type payments account for less than 20% of total payments, and for historic, uplands and chalk landscape types. The negative income changes were most prevalent amongst those with total financial commitments over £40,000, where revenue type payments accounted for less than 50% of total commitment, where the area committed to the scheme is greater than 100 ha, and amongst historic and waterside landscapes. Possible reasons why some farmers remain in the scheme despite recognising that the impact on income has been negative include reduced personal/family labour input (which is perceived to be positive for the individual) or the rationale for entering the scheme being based on non-income factors such as the value attached to environmental benefits.

5.3.4 Tir Cymen

a) Impact on labour (at the farm level)

Little change to family employment was identified from joining the Tir Cymen Scheme. Most of the (small) changes that were indicated were not attributed to the scheme, but were the result of farmers' sons/daughters joining the business, or spouses taking part-time jobs elsewhere. However, the possibility that these changes may have been triggered by the scheme could not be ruled out.

Non-family full-time and part-time employment was similarly largely unchanged as a result of scheme membership. However, there was a significant increase in the amount of casual labour employed (an increase of 98% on pre-scheme casual employment levels), this increase coincided with decreases in casual employment at the national level. Most of the extra casual jobs created were however, in only one pilot region, with the similar extra work being carried out by contractors in the other pilot regions. Many of the existing casual jobs were also maintained as a result of Tir Cymen. Overall, 511 extra casual jobs were reported to have been created, overall, in contrast to a loss of 19 (existing) casual jobs had the scheme not existed.

Total employment, as a result of Tir Cymen was estimated to be about 154.4 person years after five years, with most of this work being carried out by contractors.

b) Impact on input use and production (farm level)

Fertiliser use (measured using expenditure as a proxy) declined as a result of farmers joining the Tir Cymen Scheme, (there was also a shift to increased use of organic fertilisers). Although expenditure on pesticides and herbicides also declined, most participants did not attribute this to Tir Cymen, and only one farmer thought that arable headlands had reduced yields. Revenue from dairy production increased, as did revenue from leased out sheep quota. Lamb sales revenue, however, declined as a result of reduced stocking densities.

35% of farmers who had reduced the number of ewes on their farm attributed this change to Tir Cymen. In contrast, only 6% of farmers who had reduced their numbers of suckler cows did so because of scheme conditions, (more farmers increased the size of their suckler cow herd than decreased, although the majority (61%) reported no change).

c) Impact on income (farm level)

The net effect on farm incomes over the period of evaluation was an increase in farm income of £1,616. This is despite additional costs due to Tir Cymen of £324 and a decrease in revenue of £1,253. A rise in income for farmers not in the scheme of £951 per farm was also recorded. The net benefits of scheme participation was therefore £665.

5.4 Potential impact of scheme withdrawal and payment reductions

5.4.1 Potential impact of scheme withdrawal

The issue of what scheme participants would do in the case of an agri-environmental scheme being withdrawn has been examined in very few studies. The authors are aware of only the following:

- a recent (1996) examination of Stage I ESAs to identify likely reaction of participants to scheme modification and/or withdrawal;
- the baseline survey (1994) of some of the Stage II ESAs asking farmers to indicate their likely farming practice changes in the absence of joining the ESA scheme.

These were discussed further below.

a) Stage one ESAs

This evaluation exercise undertaken in the South Downs, Somerset Levels, West Penwith, the Broads and the Pennine Dales asked scheme participants (and non-participants) for their views on scheme withdrawal, and to indicate what their plans would be under such an eventuality.

With the exception of West Penwith, most respondents indicated that significant changes to farming systems and practices would be made if the scheme was withdrawn, (even in West Penwith, significant modifications would be made but by fewer participants).

Grassland management practices (designed to maintain the diversity of species and habitats) were indicated to be most at risk, should the scheme be discontinued. For example, in the South Downs and the Broads, grasslands were likely to be managed more intensively (through increased fertiliser applications, earlier stocking and cutting dates, increased stocking rates, and increased pesticide usage), or even returned to arable production in some cases. This is in spite of a small income reduction as a result of systems alterations and loss of ESA payments. In the light of this, the authors suggest that perhaps these results needed to be treated with caution as the respondents may have attempted to protect their own interests by threatening to intensify if the scheme were to be discontinued.

Hay meadows in the Pennine Dales were deemed to be most at risk to changes to more intensive grassland management, although most respondents insisted that walls, hedges and barns would continue to be maintained in the absence of the scheme. In West Penwith farming systems would be unlikely to change to any significant degree.

b) Stage two ESAs

In the baseline survey of Avon Valley, Exmoor, the Lake District, North Kent Marshes, South Wessex Downs, and the South West Peak ESAs, respondents were asked to indicate what would probably have occurred to their stocking and cropping plans had they not joined the ESA scheme. Although this questioning did not explicitly ask about the potential effects of scheme withdrawal, the responses allow some inferences to be made. The majority of farmers indicated that they joined the scheme because doing so involved little or no change to their farming

system. This, in the absence of significant policy and market changes suggests that the withdrawal from the scheme would also have little or no effect.

The study also indicated that some scheme participants have intensified their farming practices on land outside the scheme (since joining the scheme), but for reasons unrelated to the scheme.

In relation to this the authors of the study assessed the responses to indicate degree of risk relating to the habitats in each ESA and concluded that South Wessex Downs ESA was felt to pose a high potential risk, North Kent Marshes, Avon Valley and Exmoor were felt to represent medium risk, and South West Peak and the Lake District were felt to pose a low risk.

It is also of note that of nine respondents in Exmoor who claimed that they would have intensified their farming practices in the absence of joining the ESA, seven could (or would) not indicate what these changes would have been.

5.4.2 Potential impact of payment reductions

The authors are aware of this issue being assessed only in connection with stage I ESAs (South Downs, Somerset Levels, West Penwith, the Broads and Pennine Dales). Participants were asked whether they would continue to participate in the ESA scheme, consider continued participation, or would withdraw from the scheme (or tiers). Tier 1 is considered separately from the higher tiers because withdrawal from this tier implies complete scheme withdrawal. There was no indication as to whether respondents considering withdrawal from higher tiers would still participate in the basic scheme, although the implication from the question wording was that they would.

a) Tier 1

Generally, respondents would stay in the scheme if small reductions in payment levels were made. As the reductions become larger, respondents indicated less willingness to accept and would withdraw from the scheme. The South Downs provides a typical example. Whilst 11 respondents (out of 19) would accept £35/hectare (existing payment £40/hectare), offering reduced payments of £30/hectare prompted the majority of respondents (10) to change their definite acceptance to only a possible acceptance. As further £5/hectare reductions were offered, these respondents would gradually opt out of the scheme. At the lowest payment offered (£20/hectare), 4 respondents would still definitely participate in the scheme, 5 would consider participation, and 10 would withdraw.

Respondents in the Pennine Dales would also leave the scheme if payment levels dropped, although their reluctance to accept payment reductions tended to be stronger than in the South Downs. Of 94 respondents, 34 would not even consider continued participation at a rate of £80/hectare (existing rate £135/hectare) and at £70/hectare, 90 respondents would definitely cease participation. A reduction in payment rate to £50/hectare would leave only 1 respondent considering participation, the remaining 93 would definitely not participate.

b) Higher tiers

Without exception reduced payment rates for the higher tiers would prompt an earlier willingness to withdraw than for tier 1. This is probably attributable to the tighter (and more costly) management prescriptions imposed in higher tiers. If the payment rate is not perceived to provide adequate compensation, farmers appear not to be interested in participation. Reductions in payment rates offered for tiers 2 and 3 provoked similar reactions to those above in terms of the change from definite continuation through possible consideration to scheme withdrawal (although considerably less respondents than for tier 1 would entertain the possibility of remaining as scheme participants in respective tiers). The withdrawal of respondents from the relevant scheme tiers also began at a smaller level of payment reduction.

Again, the South Downs provides a typical example. A reduction from £35/hectare to £30/hectare (existing rate £40/hectare) for tier 2 (15 respondents) would result in three quarters of the respondents switching from continued acceptance to definite tier withdrawal. A £40/hectare reduction in payment rate from £250/hectare to £210/hectare (existing rate £290/hectare) for tier 3a would result in 5 out of 7 respondents moving from definite continuation to definite withdrawal, with 1 respondent "considering his options" (total of 16 respondents).

5.5 Comparison of evaluation findings

The scope of the socio-economic evaluations of the ESAs has been narrower in terms of factors examined than that covered in the evaluation of the CSS and TC schemes. For example, factors not analysed in the ESA studies, but examined in the CS study include inputs such as fuel, fencing, drainage, machinery purchases, gross sales of farm products and non-farm income.

Comparisons between the ESA and CS/TC evaluations are therefore restricted to fertiliser and pesticide/herbicide usage, labour and in particular, farm income changes. These are discussed below. In respect of comparisons relating to 'what if a scheme is discontinued and/or changed' questions, comparisons are restricted to studies of a limited number of ESA schemes.

5.5.1 Farm inputs

The CS evaluations show that over half the respondents indicated that their CS agreement resulted in changes in the use of inputs. Of those specifying a change in fertilisers and crop protection products, almost all stated that usage had decreased. This was very similar to the input changes identified under the ESAs where all ESA studies identified reductions in fertiliser application, and some identified decreased use of pesticides. The TC evaluations also found a reduction in fertiliser usage, but do not attribute decreases in pesticides to the scheme. Although the ESA II and III study did not specifically focus on the impact of scheme participation on input use, the response of farmers to a scenario in which the scheme is withdrawn suggested that about half would aim to increase input use, especially fertilisers and pesticides (by inference suggesting that the scheme had resulted in most reducing their use of these inputs).

These similar results are however, not surprising given the consistency of scheme conditions that require farmers to reduce input usage, especially fertiliser and pesticide applications.

5.5.2 Farm labour use

About 10% of CS survey respondents indicated a change in on-farm labour usage (most an increase), while nearly half of all respondents indicated that their CS agreements had increased their use of contractors and advisors. This feature is confirmed by the results of the ESA evaluations, where the impact on-farm labour requirements were minimal and the use of contractors had (in some cases) expanded significantly (eg, the North Peak, 27 full-time jobs were reported to have been created, which was over 20% of the 1987 labour force). This increase in labour requirement was mirrored by the TC survey respondents, where extra work associated with scheme membership is carried out by a mixture of casual workers and contractors (some work is also absorbed by on-farm labour).

The socio-economic assessment of the Farm Woodland Schemes in Scotland and England also confirmed the positive impact on off-farm labour with the majority of the tree plantings undertaken by forestry consultants and contractors.

Although the ESA II and III study did not examine the impact of scheme participation on labour use, the response of farmers to a scenario in which the scheme is withdrawn produced some consistent results; namely that the impact of change would be very small and the main losers would be non-family labour and contractors whose services would be used less (ie, those who benefited most from agri-environmental scheme membership would lose most on leaving the scheme).

5.6 Farm income

The CS evaluation (participants survey element) identified that, for about a quarter of respondents, a change in total income had occurred, with those indicating an increase being slightly more in number than those indicating a decrease in income. This contrasts, to some extent, with the results of the socio-economic analysis of the ESAs and the analysis of TC, which all showed an average increase in income per farm after scheme payments. This difference may reflect the restricted nature of the questioning in the CS survey in which scheme participants were responding to a postal survey and therefore were unable to seek clarification of some points. Some of the evidence from the CS survey report (eg, reasons cited for perceived changes in income) suggest that some farmers may have taken the CS payments into account when considering impact on income whereas others did not. In the ESA studies, where most of the surveys were face-to-face, most of the respondents took the ESA payment levels into account when assessing impact on income. In addition, the reader should note that the ESA evaluations estimated the average income gain per participating farm and by hectare under the scheme, whilst in the CS study income benefits were only measured in terms of whether they had gone up or down for each respondent (limitations of a postal survey), with no estimate being made of the average income increase/decrease per participant. The TC study identified on average farm income increased by £1,616 during the period examined by the study, of which £665 was directly attributed to scheme membership.

Average annual net income per hectare of land entered into the Farm Woodland Scheme was shown to have fallen (by £24 at that time, but which is not directly comparable with the later

CS, TC and ESA evaluations) with the highest annual loss occurring on lowlands. Where arable land was planted, net income fell. On unimproved, Less Favoured Area land and planted grassland, there was however a net income gain reported. This is similar to the impact on income observed in the CS study although as indicated above this may be attributable to some respondents including and some not including consideration of scheme payments in their income input assessments.

The evaluations all also show a fairly wide range of income impact. This can be mainly attributed to:

- all schemes being based on some extent on standard payments applied across a group of farms in a region and/or land type;
- different objectives and management prescriptions of the various schemes (eg, land management measures and regeneration are the basis of all CS agreements payments range between £15 and £275/hectare per year depending on the strictness of the guidelines), while the ESAs are concerned mostly with maintenance (Tier 1) and basic restrictions;
- CS and TC payments are also designed to produce additionality, and therefore are less likely to appeal to purely profit motivated farmers (Smith, 1997).

Again the ESA II and III analysis produced results that are consistent with the above analysis. Almost all of the participants indicated that the ESA payments made a positive contribution to gross income although this varied according to size of business and farm, region and proportion of the total farmed area committed to the scheme. The positive income contribution of the scheme was also highlighted by the majority perceiving that scheme withdrawal would adversely affect their income level.

5.7 Scheme withdrawal

The examination of the potential impact of scheme withdrawal identified a number of consistent features although the ESA II and III study considers these in more depth than the earlier studies. Key features include:

- changes (intensification) to farming practices via increased use of fertilisers, pesticides and feed and increased stocking rates for livestock. This intensification would occur mostly on grassland and vary between ESAs. Hence, intensification would probably occur most in the ESAs where arable farming is relatively more important (eg, South Downs, Broads, South Wessex) than livestock enterprises. In some cases there would also probably be some reversion of land from livestock to arable (eg, Breckland, South Downs), probably land that had been converted from arable to grassland in the scheme;
- a noticeable feature of the ESA II and III participants' responses to scheme discontinuation was to intensify grass production, most of which would be used to feed livestock on the farms. This is highly consistent with the findings of earlier ESA evaluations which indicated that a significant impact of joining the scheme (eg, in

Pennine Dales) had been reductions in forage production, especially hay. There would also be a reduction in the use of additional rented grazing land especially in ESAs like the Lake District where scheme participation probably resulted in stock removed from ESA land being re-sited on rented land not in the scheme and on commonland;

- the **net overall** impact of scheme withdrawal on gross farm income would be limited. This is because some farmers would compensate for the loss of payments by intensification of enterprises and/or the scheme payments contributed a relatively small share of gross income in the first place. It is however important to recognise that the Stage II and III study shows the wide divergence between participants - for some (eg, small farms under 100 hectares and turnovers less than £80,000, in Clun and the Lake District), the revenue derived from the scheme is an important part of total revenue and the scope for more intensively farming is limited. For such farmers removal of the scheme would have significant negative impact on income;
- the ESA II and III study of participants identified that about a half of respondents did not think that they could alter their farming practices if the scheme was withdrawn. To some extent this is consistent with some ESA-impact evaluations (eg, of ESAs I) where many farmers indicated that joining the scheme had resulted in minimal changes to farming practices. A reversion to a policy environment in which no ESA scheme existed would simply represent a no change position (presumably in many cases because of limited options for intensification) but a loss of income from ESA payments.

5.8 Changes (reductions) in payment levels

The main findings of the two studies to examine this issue (relating to Stage I ESAs and this study of ESAs II and III) are:

- at relatively low levels of payment reduction (eg, 5%) the vast majority of participants would remain in the scheme. As payment level reductions are increased the proportion of participants who would withdraw from the scheme increases. This does however vary between ESAs and tiers. Where farmers perceive certain tiers to be difficult (in both management and cost terms) to comply with and payment levels inadequate, any reduction in payment level would induce withdrawal from a tier. Also farmers in ESAs (I,II and III) where arable farming is relatively more important (eg, South Downs, South Wessex, Test Valley, Broads) tend to be those expressing greatest levels of dissatisfaction with current payment levels and willingness to leave the scheme if payment levels are reduced by only small amounts;
- even when payment levels are reduced significantly (eg, 20-30%), some participants would remain in the scheme. This reflects a combination of factors including 'inertia', ability to offset the payment reductions by other activities (eg, intensification of farm enterprises outside the ESA scheme area, non-farm enterprises) and joining the scheme for reasons other than simply the financial rewards (ie, keen interests in conservation).

6 Conclusions

This study has examined the socio-economic impact of introducing possible changes to the ESA scheme in the ESA regions II and III. It focused on potential changes in farming practices, attitudes towards the scheme and reaction to changes in the nature of the scheme.

6.1 Impact of discontinuing the scheme on current participants

If the ESA scheme was discontinued, the following main impacts would be likely to occur.

- a) There would be no changes to farm ownership structure and very little change to the total area farmed. Those indicating increases in the area farmed would largely cancel out those indicating a decrease in area farmed.

There would also be only limited change to cropping areas (about 80% of participants would not make changes to their cropping area). Where changes are envisaged these will be concentrated on grass where there would be a net reduction in the total grass area in these ESAs of about 7%. There would also be a 5% increase in the cereals area across the ESAs examined, mostly in South Wessex Downs and the Test Valley²². In some cases (mostly in Breckland and South Wessex Downs) there would probably be some participants who would convert land from extensive livestock production systems back to arable cropping (ie, reverse practices adopted when joining the scheme).

- b) Changes to yields would be much more widespread than cropping area changes with about half of current participants indicating that they would aim to increase yields. The main target for increased yields would be grass production (ie, increased forage production, mostly on improved pasture (temporary and some permanent pasture)) with these changes being concentrated in the Lake District and Clun. Limited increases in cereal yields would also be targeted, mostly in Clun, Breckland and South Wessex Downs. The average yield increases suggested were 20-30% for grass and about 6-8% for cereals. These target yield increases would be applicable to an approximate area of about 46,000 hectares of grass and 5,000 hectares of cereals. In output terms this would equate to increases of about 190,000 tonnes of hay/grazing grass and 4,275 tonnes of cereals²³. The majority of the

²² If the area changes indicated by the survey respondents are weighted up to all of the participants the **net** effect would be a decrease in crop/grass area of about 19,000 hectares. The main impact would be seen in the Lake District where about 19,500 hectares of grass would probably be taken out of grass production. In terms of arable crops, the impact would be small (an increase of about 1,800 hectares of cereals across all the ESAs of which 60% would be in South Wessex). However, these calculated weighted up changes are based on very low numbers of respondents indicating changes and are therefore not statistically significant.

²³ These figures are based on the weighted up responses to the participants survey but have been adjusted downwards for grass area and output by about 20%. This reflects the bias in the participants survey which probably overestimates the impact.

CONCLUSIONS

increases in grass/hay production would be used as forage for livestock reared on the farms (many of which would increase the numbers reared). This would in effect be reversing one of the most significant impacts of joining ESA schemes (reduction of forage, especially hay production).

- c) There would also be significant numbers of participants making changes to the number of livestock kept. About 40% of the participants would probably make changes with the net impact being an increase in sheep and cattle numbers of 55,000 (see also footnote 2) and 3,000 respectively. The majority of these changes would occur in the Lake District and Clun (a net increase of about 54,000 animals) although there would be a net decrease in the numbers of livestock kept in Breckland (about 4,100 animals) as some participants would cease to operate livestock enterprises. In terms of stocking densities, these are likely to increase by roughly 4% in the Lake District and Clun and decrease by about 10% in Breckland.
- d) About half of the participants would aim to make changes to their input use with the main changes being increased use of fertilisers (+ 17,000 tonnes across all ESAs) and pesticides (+ £300,000 across all ESAs). Such changes would mostly be applicable to grass crops although about 15% of the increased fertiliser and a third of the increased pesticide use would be on cereals. Most of these changes would occur in the Lake District and Clun although where changes were to be applied to cereals about half of this would occur in South Wessex Downs and the Test Valley.

Use of bought-in feed would also increase on about a third of participants farms (+ 1,100 tonnes of compound feed, concentrates and straights across all of the ESAs). The majority of these changes would occur in the Lake District and Clun.

There would also be a number of other 'unquantifiable' changes mostly changes to varieties grown, increased cultivations of grass/hay and changes in the time of sowing and cutting.

These input, husbandry and feed usage changes would largely redress changes made to farming practices as a result of joining the scheme.

- e) The impact on labour use would be limited. Only 20% of the participants envisaged making changes to labour use with the main changes being less use of contractors, reduced hours for employed labour (part-time/casual and overtime for full-time staff) and more hours for family labour. Very few changes to the numbers employed would occur. The majority of these labour changes would occur in the Lake District and Clun.
- f) There would be very little impact on non-farm activities although about 10% of participants indicated possible increased interest in exploring such opportunities if the ESA scheme was discontinued (mostly in the Lake District and Clun).
- g) The majority of participants (60%) would expect discontinuation of the scheme to have a negative impact on their total income with the highest incidence of negative impact

occurring in the Lake District and Clun. The likely net overall negative impact on farm income would however be limited with some participants aiming to offset the loss of ESA payments by intensifying farming activities. The net impact on gross income amounts to about + £60/hectare on the land where change would occur or about + £28/hectare across all of the land in the scheme. These positive income effects compare with the loss of ESA payments roughly equal to £113/hectare (based on survey data relating to area in the scheme, average estimated share of ESA payments in total revenue and average total revenue). Therefore, it is not surprising that the majority of participants perceive that they would be worse off if the scheme were to discontinue. This net impact does not take into account the wide divergence of possible impact across all participants and for some, removal of the scheme would have significant negative impact on income. Those expecting the impact on income to be negligible and/or positive were mostly those participants that would seek to compensate for the discontinuation of the scheme by intensifying production (targeting increased yields and livestock numbers and changes in the balance of enterprises) and mainly larger farms (those with turnovers over £160,000 and over 100 hectares in size and in South Wessex and the Test Valley). Some of these participants had also committed a relatively small area of their farm into the scheme and derived a low proportion of total farm revenue from scheme payments (ie, under 5%). Conversely, those expecting decreases were mainly amongst participants with less flexibility that did not think that they could increase yields/reduce input and feed costs significantly, those with relatively lower turnover levels and average size of farms, farms that had committed a significant part of their total farm area to the scheme and derived a significant proportion of their total farm revenue from ESA payments (ie, over 15%); these are found more heavily concentrated in Clun and the Lake District than the other ESAs.

6.2 Attitudes to the scheme and impact of changes in the basis of the scheme

The current scheme is held in high regard by most participants with the majority indicating positive comments and perceptions about the scheme. The financial contribution of scheme payments represents the main positive attribute to most participants, especially amongst participants in the Lake District and Clun where many indicated that the scheme had made it possible for them to stay in farming. The positive impact on nature conservation and landscape is also important to a significant proportion of those in the scheme.

The main disadvantages of the scheme were associated with reduced flexibility (eg, in management/practices, restrictions on stocking rates), and were mainly expressed from South Wessex Downs and the Test Valley. It should however, be noted that the incidence of positive attitudes and identification of advantages were significantly more numerous than the negatives attitudes and identification of disadvantages.

This underlying positive attitude towards the scheme was also apparent from nearly 80% of all participants indicating that they would recommend the scheme to others and very few (3%) indicated that they would discourage others from entering the scheme.

Against this background, the majority of participants do not consider changes to the *basis* of how the scheme operates to be beneficial relative to the current scheme. For example, only a

quarter of the participants thought that adding a scheme 'one-off' entry fee to the annual payment/hectare basis of the current scheme was an improvement even though it would increase the overall level of payments received. Such a change in the basis of payments (which would in effect favour small farmers relative to larger farmers) would however be most favourably received by some smaller farmers in the Lake District.

Where changes to the scheme are considered necessary, these mainly relate to specific management prescriptions of some tiers and payment rates at the tier level (see below).

6.3 Attitude to renewal

The vast majority of participants (85%-90%) would renew their current ESA contracts if offered on the current terms and payment rates. Those that would leave the scheme, if offered on the current terms and conditions, were those expressing negative attitudes towards the scheme and dissatisfaction with some tier management prescriptions and payment levels. The leavers would mainly be larger farms (over 100 hectares and over £160,000 annual turnover), located in the more arable dominated ESAs such as South Wessex Downs and the Test Valley. The Test Valley was also the ESA where the highest proportion of participants (12%) indicated that they would still reject staying in elements of the scheme (mainly the unimproved grass tier) even if payment rates were increased by 20%.

6.4 Impact of changes to payment levels

Examination of the potential impact of changes to the payment levels identified the following key points.

- a) If payment levels were reduced by one third only 30% of current participants would (reluctantly) accept such a cut and stay in the scheme. The willingness to accept such a cut in payment rates was highest in Breckland (nearly half would probably tolerate such a cut) and lowest in Clun where no-one would accept such a cut. The apparent irrational willingness to accept such a cut amongst a third of participants probably reflects a combination of factors including 'inertia' (having joined the scheme and perhaps made changes to farming practices, some cannot be bothered to change), ability to offset the payment reductions by other activities (eg, intensification of farm enterprises on land not in the scheme) and joining the scheme for reasons other than simply the financial rewards (ie, those with keen interests in conservation). In contrast the very strong rejection of cuts in payment levels in ESAs such as Clun reflects the relatively greater importance and dependence on ESA payments as a source of income and limited options for mitigating the loss of payments (eg, by intensification of enterprises on land not entered into the scheme).
It is however, important to recognise that in Clun the option to leave/stay in different tiers is more restricted than in the other ESAs, with the all land tier effectively being a whole farm tier. If participants reject payment levels in this tier, they effectively reject the scheme as they cannot take up other tiers without taking up this tier.
- b) At relatively low levels of payment reduction (eg, 5%) the majority of participants would remain in the scheme.

- c) If payment levels were increased by 20% almost all (98.5%) would remain in the scheme. A small proportion would however still leave the scheme as indicated above relating to attitudes to renewal.
- d) The level of willingness or otherwise to accept reductions in payment rates (and dissatisfaction with current and/or small increases in payment rates) is closely linked to specific 'problem' tiers. Where farmers perceive certain tiers to be difficult (in both management prescription compliance and cost terms) to comply with and payment levels to be inadequate, any reduction in payment level would induce withdrawal from a tier. Each ESA has its problem tiers although in all cases those indicating problems were in a minority of those in each tier. In Breckland and the Test Valley there is one main problem tier respectively, in the Lake District and South Wessex two problem tiers respectively and in Clun there are three problem tiers.
- e) There was no significant difference in the nature of responses by age of farmer to possible changes in the level of payments with those in the higher age groups (45-65) providing broadly similar response to those under 45.
- f) There was also no distinctive feature in the nature of responses by farm or turnover size other than at the ESA level where for example larger farm and turnover sizes tend to be more heavily concentrated in the ESAs of Breckland, South Wessex and the Test Valley. However, **within** each ESA, there is no significant difference in the nature of responses by those criteria. Also, at the ESA level, differences in responses tended to be mostly linked to tiers (ie, land type).

6.5 Non-participants

There does not appear to be many differences between the nature and type of farmers located in ESA regions that have and have not joined the ESA scheme. The main differences are:

- the balance of enterprises in favour of livestock relative to arable is greater amongst the participants;
- non-participants have higher average use of inputs such as fertilisers and pesticides and of bought-in feed;
- non-participants tend to be more specialised (ie, more dependent on one enterprise than participants), arable enterprises tend to be relatively more important²⁴ and they are slightly less dependent on non-farm activities;
- whilst the majority of all farmers expect support levels to decrease in the next few years and about half expect to lose out, slightly more non-participants than participants expect to lose out. This probably reflects the greater degree of specialisation amongst non-participants and the resulting greater exposure to changes in the nature and level of support (ie, non-participants derive a higher proportion of their income from enterprises

²⁴ Livestock enterprise still dominate but the relative importance of arable is slightly higher amongst non-participants than participants.

- that are currently supported by mechanisms that will assume decreasing importance relative to ESA-style support mechanisms);
- whilst some non-participants endorsed positive impact on the environment as a benefit of joining, these were less prominent than amongst the participants suggesting that non-participants are generally those with less positive interest in conservation and the environment than those who have joined the scheme.

Motivation for possibly joining the ESA scheme was largely driven by considerations of financial impact which would need to be reasonably positive. In general, the proportion of non-participants willing to accept the current payment rates was lower than amongst the participants, illustrating the additional incentive that would be required to encourage significant numbers of current non-participants into the scheme. It is, however important to note that some non-participants would be willing to accept current payment rates (eg, nearly a third for downland turf in South Wessex) and therefore some additional scheme participants could be attracted without increasing the levels of incentives. These non-participants tended to be mainly farmers who had limited knowledge about the scheme itself and/or thought that they were ineligible to join. For most of the non-participants, interest in joining the scheme would be directly related to the scheme providing positive gross income contributions that were, on average, higher than levels perceived to be derived by the current participants (ie, an average contribution of over 15% required by non-participants compared to 11% for participants). This suggests that the payment levels for each tier would have to adequately cover (higher) costs of management prescription compliance (as most non-participants perceive that they would have to make significant changes to their farming practices to join, these would probably have a higher average level than for current participants²⁵) and a higher level of incentive to join. Alternatively the current management prescriptions would have to be relaxed.

Whilst these features of non-participants reactions were broadly consistent across the ESAs examined, the highest concentration of those least interested in joining and/or requiring the highest levels of incentives were in South Wessex Downs - also one of the ESAs where the highest concentration of dissatisfied participants were located.

6.6 Effect on land not in the ESA scheme

The evidence relating to potential impact of withdrawing the ESA scheme on participants and differences between participants and non-participants suggests that some participants have intensified their farming activities on land not entered into the scheme. Notable examples include:

- *increased use of commonland* - the average number of livestock grazed on commonland (much of which is not subject to an ESA agreement) by participants is higher than the average number grazed by non-participants.

²⁵ Evidence from evaluations of impact of ESA scheme adoption on farming practices suggests that for the majority of initial entrants, adoption of scheme conditions required minimal changes to existing farming practices.

Should the ESA scheme be discontinued, it is possible that the average number of stock grazed on commonland might decline/be reversed. Nevertheless, as one of the main potential impacts of scheme withdrawal on participants would be to increase livestock numbers (mainly fed from expanding on-farm forage production), it is difficult to ascertain (without further research) what will happen to stock distribution across all land that farmers have access to for grazing;

- *increased use of land outside the scheme both within/outside the ESA for grazing.* Analysis of the impact studies of other ESAs suggests that this has been one effect of scheme membership. It is however difficult to assess whether scheme discontinuation would lead to some ESA participants giving up the additional land taken on for grazing in recent years. Some participants indicated that they would decrease the area farmed and/or used for grassland but were too few to provide reliable weighted up results at the scheme level. Also the purchase/rent of additional land for grazing was a growing feature of farming practice in the Lake District prior to the start of the ESA scheme.

6.7 Future intentions

Key features of farmer future intentions and perceptions about their future in farming were as follows.

- a) Both participants and non-participants have very similar views and expectations for the future. The vast majority do not expect to make changes in ownership, enterprise mix, involvement in non-farm activities or the size of their farms over the next five years (the proportion of non-participants expecting to make changes was slightly higher than the proportion of participants).
- b) The majority of all farmers expect support levels to decrease and about a half expect to lose out as a result of this (the proportion of non-participants expecting to lose out was slightly higher than the proportion of participants).
- c) The main change to the nature of policy expected²⁶ is increased linkage of policy support to compliance with positive environmental management prescriptions.

²⁶ Expressed by a minority of both participants and non-participants but nevertheless, the second most significant policy change expected after reductions in support levels.

6.8 Additionality and displacement¹

The findings of the research show possible evidence of both additionality and displacement as a result of the introduction and application of the scheme. Specifically:

a) Additionality

- The level of use of inputs and bought-in feed is higher amongst non-participants than participants. Also, if the scheme was to be discontinued, one of the main reactions would be increased use of inputs, hence reversing some of the scheme impacts. This highlights the positive impact of the scheme on input use where high input use is perceived to be detrimental to achieving environmental objectives of the scheme.
- About half of the participants would increase yields and nearly half would increase livestock numbers if the scheme was discontinued. This intensification of production illustrates how scheme withdrawal would reverse important impacts of the scheme on farming practices, especially in relation to livestock numbers kept and production of hay and forage. Nevertheless, this is to some extent offset by the other half of the participants who did not think that they could/would alter their farming practices if the scheme was withdrawn. Many of these farmers were probably ones that made minimal changes to farming practices when they joined the scheme²⁸ and therefore a reversion to a policy environment in which no ESA scheme existed would simply represent a no change position for farming practices.
- A feature of the scheme in Breckland was conversion of (intensive) arable to more extensive livestock enterprises. Should the scheme be discontinued this would probably be reversed with some current participants giving up their livestock enterprises and reverting to higher levels of arable production.
- Some participants most notably in Clun and the Lake District indicated that the scheme payments had enabled them to stay in farming. If the scheme had not been introduced these farmers would probably have left the sector with possible adverse effects on the maintenance of some landscape features (especially those that require minimal levels of care and grazing such as moorland).

b) Displacement/side effects

- There is some evidence that some farmers have sought to offset the management restrictions of the scheme by intensifying their use and grazing of land outside the scheme, especially commonland and by renting/purchasing additional land (some within and some outside ESAs). In the absence of the scheme some of this land might be sold, no longer rented and some livestock moved off commonland.

²⁷ Examined from a socio-economic rather than environmental perspective.

²⁸ Evidence presented in section 5: the examination of other socio-economic evaluations of UK agri-environmental schemes.

6.9 Concluding comments

Taken together the results of this study, suggest that the net socio-economic impact of making changes to the ESA scheme, as applied to the ESA II and III regions would be limited. However, there would be a wide variation in the level of impact at the ESA and individual level.

The extreme scenario examined - discontinuation of the scheme would induce a number of changes that would largely undo changes effected by farmers joining the ESA scheme over the last few years. This would result in intensification of mainly livestock (and some arable) enterprises, increased production of forage and more use of fertilisers and pesticides. Some land converted from arable to grass-based enterprises would also probably revert to arable. The main driving force for introducing such changes would be the desire to offset loss of revenue and income derived from ESA payments. Whilst some farmers would be able to initiate such changes (mainly larger farms, with some existing arable enterprises and a limited proportion of their farm area committed to the scheme), others have less flexibility and would find it difficult to offset the ESA income loss. These most vulnerable farms tend to be smaller farms (under 100 hectares and under £80,000 annual turnover), which have devoted a large proportion of their land to the scheme, or livestock dominated businesses and mostly located in Clun and the Lake District.

In respect of possible changes to the scheme, it is evident that the scheme is well thought of by most farmers. Very few current participants plan to leave the scheme if renewed on current terms and most would tolerate small decreases in payment levels. Problems with the scheme, where expressed are mainly related to specific management prescriptions and payment levels at the tier level and therefore the solutions for dealing with problems also lie at the tier level. Only in a minority of cases do tier level problems manifest themselves in broader levels of dissatisfaction with the scheme (most notably in the South Wessex Downs, Test Valley and Clun and it is here that the greatest risk of scheme leavers may occur).

Since the introduction of the ESA scheme there does not appear to be any change in the underlying rationale for the ESA policy. The majority of land so designated "as being of national significance and distinct environmental interest" remains as such and the scheme has undoubtedly contributed to the maintenance of these attributes by encouraging farmers to enter the scheme and adopt more positive conservation farming practices. Any dilution of the scheme, via reductions in payment rates or the extreme of discontinuation would pose a threat to a significant proportion of the land currently in the scheme as many current participants would intensify their farming activities. In addition, for some, the current scheme payments are a major contributory factor to them remaining in farming and their reduction/removal would result in some farmers probably leaving the sector. This may have adverse effects on the maintenance of some landscape features such as moorland in some of the vulnerable ESAs such as the Lake District.

Finally, the ESA scheme exhibits many of the features that are likely to assume far greater importance within the nature of future agricultural policy in the EU. Therefore, the rationale for retaining such a policy mechanism as an important component of UK agricultural policy for the

CONCLUSIONS

future has considerable merit. It would provide a sound base for implementing broader EU-level policies and is understood and perceived positively by most farmers in the scheme.

Appendix 1: Questionnaires

THESE ARE NOT REPRODUCED HERE, BUT COPIES MAY BE OBTAINED ON APPLICATION TO THE MINISTRY'S CONSERVATION MANAGEMENT UNIT.

(Email s.l.morgan@cm.maff.gov.uk)

Appendix 2: Questionnaire showcards

THESE ARE NOT REPRODUCED HERE, BUT COPIES MAY BE OBTAINED ON APPLICATION TO THE MINISTRY'S CONSERVATION MANAGEMENT UNIT.

(Email s.l.morgan@cm.maff.gov.uk)

Appendix 3: ESA specific breakdown of some responses

Table 1.1: a) Farms with sheep

Flock size	Lake District	Clun	Breckland	South Wessex	Test Valley	Total
Under 500	237	65	9	12	8	331
500-999	216	42	-	21	-	278
1,000-1,499	247	52	-	3	-	302
1,500 plus	267	35	9	9	-	320
Average flock size	1,245	1,090	1,156	910	240	1,202
Median flock size	986	1,020	851	102	735	250

Base = 1,231 participants

Table 1.2: b) Farms with dairy cattle

Size	Lake District	Clun	Breckland	South Wessex	Test Valley	Total
Under 40	62	-	3	-	-	65
40-99	51	-	-	-	-	51
100-149	21	-	3	21	-	45
150 plus	10	-	-	21	4	35
Average herd size	81	-	67	158	301	101
Median herd size	40	-	67	146	301	50

Base = 196 participants

Table 1.3: c) Farms with beef cattle

Size	Lake District	Clun	Breckland	South Wessex	Test Valley	Total
Under 50	237	52	18	32	8	347
50-99	237	42	3	9	4	295
100-199	206	52	9	21	8	296
200 plus	134	24	6	18	4	186
Average herd size	110	125	98	105	116	112
Median herd size	78	94	40	62	78	80

Base = 1,121 participants

Appendix 3: ESA specific breakdown of some responses

Table 1.4: d) Enterprise contributors to income (Number of participants)

Enterprise	Lake District	Clun	Breckland	South Wessex	Test Valley	Total
Outside farming	51	31	33	9	22	146
One farming enterprise	206	35	60	26	11	338
Two farming enterprises	658	90	27	68	10	853
Three or more enterprises	124	59	8	44	6	241
Total	1,039	215	128	147	49	1,578
Average % contribution of ESA grant to total farm income	11.9	14.7	7.7	6.7	4.1	11.2
Average % contribution of ESA grant to total farm income for farms under 50 hectares	16.1	13.1	13.1	6.5	8.0	14.5
Contribution of ESA grant to total farm income for farms over 50 hectares	10.9	15.7	2.9	6.8	1.3	10.2

Table 1.5: e) Enterprise contributors to income (Base all with 1 or more enterprises)

1st importance	% of respondents					
	% of all participants	Lake District	Clun	Breckland	South Wessex	Test Valley
Arable	13	nil	8	69	72	50
Dairy	10	11	2	3	15	7
Beef	20	22	26	16	4	14
Sheep	56	67	62	9	6	29
Pigs/poultry	1	nil	2	3	1	nil

Table 1.6: f) Impact of discontinuing in the ESA scheme on farm income by ESA (% of participants)

Changes	Lake District	Clun	Breckland	South Wessex	Test Valley
Increase by 20% plus	1	3	3	2	8
Increase by 10-19%	2	2	-	6	-
Increase by 1-9%	1	-	2	4	8
Don't know (increase)	7	5	26	8	4
Decrease by 1-4%	11	6	28	18	28
Decrease by 5-9%	11	8	9	2	-
Decrease by 10% plus	20	29	2	6	8
Don't know (decrease)	23	27	9	16	16
Expect no change	22	16	26	32	20
No opinion given	2	4	12	6	8
Base numbers interviewed	101	62	43	50	25

Table 1.7: g) Impact of discontinuing the ESA scheme on farm income by income group and farm size (% all respondents)

Changes	Income under £30,000	Income £80-160,000	Income £160,000 plus	Under 20 ha	20-49 ha	50-99 ha	100-199ha	Over 200 ha
Increase by 20% plus	3	-	2	2	2	-	1	3
Increase by 10-19%	4	1	1	-	-	8	1	1
Increase by 1-9%	1	-	5	-	-	3	0	2
Don't know (increase)	4	7	9	10	5	5	8	7
Decrease by 1-4%	8	12	27	10	7	8	20	13
Decrease by 5-9%	11	11	8	6	9	8	15	6
Decrease by 10% plus	24	16	3	8	25	21	12	23
Don't know (decrease)	21	19	15	20	16	25	22	19
Expect no change	19	27	27	38	31	17	19	20
No opinion given	5	7	3	6	5	5	2	6
Base numbers interviewed	126	70	42	28	36	53	81	83

Table 1.8: h) Problems meeting management conditions (number indicating problems)

Conditions nominated	Lake District	Clun	Breckland	South Wessex	Test Valley
Unweighted base (ie, numbers indicating problems in the survey)	23	14	20	26	8
Conditions nominated					
Weed control/topping	4	6	12	7	4
Grazing	6	-	2	10	2
Fertiliser restrictions	6	5	-	3	1
Poor sward	1	4	-	-	-
Harrowing	-	-	1	-	-
Problems nominated					
Thistles/nettles/weeds	1	6	6	6	4
Poor grass performance	5	4	-	7	3
Timing restrictions	5	6	-	2	1
Stocking limits	6	-	2	3	1
Not able to spray	1	-	5	3	1

Appendix 4: The future of agricultural policy in the UK: the future of the Common Agricultural Policy (CAP)

A4.1 Introduction

This section provides an overview of the pressures for changes and likely future direction of the main agricultural policy (Common Agricultural Policy (CAP)) impinging on UK farming over the next few years. The rationale for its inclusion in the report is to place the results of the forward looking elements of the study (primarily farmer intentions and perceptions) in context.

The reader should note the section present an **overview** of key pressures, issues and likely future direction, and does not include (or intend to include) a full, detailed discussion of issues on a sector by sector basis. It also presents the authors views of the likely future direction of policy based on analysis of pressures for change and the current state of public debate of the issues.

A4.2 Pressures for change

At the outset it is important to recognise that the CAP does not consist of a logical set of sub-policies and measures targeted at a single objective. As can be expected from a policy that has evolved over the last 35 years as a result of compromises between member states, the CAP actually consists of a collection of very different instruments and regulations with multiple objectives, some of which are contradictory. Against this background, pressure for reform of the CAP has intensified during the early 1990s and continues to build from a number of sources.

A4.2.1 Uruguay Round GATT Agreement

The evolution of the CAP will be constrained by the 1994 Uruguay Round Agreement (URA) within the General Agreement on Trade and Tariffs (GATT). This agreement imposes important limitations on the level of domestic subsidies, on the level of protection against imports, and on the level of subsidised exports. This latter constraint is the most binding for the EU. At the present levels of prices and quotas, the EU is likely to have difficulty in meeting GATT export commitments in key sectors such as cereals and beef by 2000/2001.

a) Cereals sector

Despite the reforms initiated in the early 1990s, the CAP's cereal regime retains most of its relative high levels of protection against imports and relatively high support mechanisms. In addition, although the reforms resulted in reduced cereal support prices of about a third, the impact of this reduction in support on EU cereal farmers has been diluted through the use of direct area-based compensation payments and agri-monetary changes. As a result current cereal support prices (plus the provision of other supports such as area payments) remain at levels that are above long-run world cereal price levels and therefore continue to act as an incentive to EU farmers to expand cereal output²⁹. In addition, EU market prices did not fall in

²⁹ The authors consider the increases in some world cereal prices during 1995/96 to be of a short term nature, largely a reflection of short term, weather-related supply shortfalls in some key production regions.

line with the reductions in support prices, because of increases in EU and world market prices. Against this background, the underlying trend of EU cereal production continues to be upwards.

Under such a scenario of EU15 production being well in excess of consumption, even allowing for the maximum level of subsidised exports permissible under GATT and for increased utilisation for livestock feed, stocks of cereals in the EU are likely to build up if there is simply one or two bumper harvests between now and 2000/2001. This would make the final year GATT export commitment difficult to meet. The only possible saviour for the EU avoiding such difficulties will be if world prices re-establish and remain at the historic high levels of 1995/96 - this is however unlikely to occur and points to problems probably re-appearing.

b) Impact on the beef sector

Even before the BSE crisis, EU consumption was in decline at a faster rate than the predicted (small) decreases in production. This would have resulted in a similar position to cereals where surplus production may result in a build up of stocks making the GATT export constraints difficult to meet. The BSE crisis has made this position even more acute. Several short to medium-term surplus management schemes have been introduced and/or stepped up as a result of BSE crisis, however these are only likely to provide short term solutions (resulting in increases in intervention stocks) and do not address the underlying structural imbalances in the sector. As with cereals, it is likely that the EU will be in breach of its GATT export commitments for beef unless it takes further measures to reform the beef regime and reduce supply in the next few years. Further reform is therefore inevitable.

The assessment of the seriousness of the GATT problem differs depending on the source of the analysis. Generally, those countries with professed interest in CAP reform like the UK tend to play up the difficulties whilst those with less interest (eg, Germany) tend to downplay them. However, even the European Commission, in its agricultural strategy paper published in December 1995 recognised that the then current state of the CAP would become increasingly untenable as production increased and during 1996/97 much internal examination of further reform options has taken place within the Commission.

The pressures are also not expected to diminish. The next trade negotiating round will begin in 1999 and any new commitments arising from it will add to the existing pressures. These are likely to incorporate demands for the reduction or elimination of direct production-related subsidies especially as the US Farm Bill of 1996 has paved the way for the significant reductions in and the decoupling of US support from agricultural production.

A4.2.2 Budget pressures

The budget as currently constituted may prove a constraint on CAP developments. Although the absolute size of both the total and agricultural budget should increase over the next few years, this increase depends upon both the level of economic growth in the EU and the political agreement on the maximum proportion to be allocated to agriculture.

The total annual budget is limited to a percentage of the GNP of the EU. Currently, this percentage is 1.22 but this is set to rise to 1.27 by 1999 under the 1992 Edinburgh Agreement.

The share of the agricultural guarantee budget, on the other hand, is set to fall. Under the

1988 Council decision, this budget can only increase by 74 per cent of the increase in the total budget.

Under the above arrangements the budgetary costs for agriculture were not considered to be a major problem in relation to the ceiling. However, the 1997 budget was cut by finance ministers to below the amount allowed within the guideline because all governments are seeking to meet the Maastricht EMU criteria - therefore they are all 'budget sensitive'.

The compensatory payments under the 1992 CAP reform would have strained the agricultural budget limits but have been offset to some extent by the reductions in export subsidies as a result of the increase in world cereal prices in 1995 and 1996. An early return to world prices of the levels seen throughout the 1980s and the early 1990s (1997 futures prices relating to the 1997 harvest suggest that world prices will fall back), with a consequent rise in export subsidy expenditure and the increasing costs of storing surpluses could breach the agricultural guideline. Beyond 1999, it is increasingly looking unlikely that the size of the budget will increase and may in fact be subject to reductions (eg, if the German Finance Minister's proposals in late 1996 come to fruition) or re-focusing on non-agricultural issues (eg, the recent changes in government in both France and the UK are emphasising the importance of developing EU level initiatives for tackling unemployment).

A4.2.3 Enlargement to the East

Enlargement to include the CEECs would change the market balances of the main commodities of a future EU, and would add to both the difficulties in complying with the existing GATT and existing budget pressures without consideration of any agreements made in the next GATT Round or the post 1999 EU budget arrangements.

There would be problems in reconciling the existing GATT commitment of the EU with those of the CEECs, in relation to all four main areas:

- tariff levels;
- export subsidies;
- the level of domestic support;
- market access.

Apart from this issue, all analysts agree that the adoption of the existing CAP by the CEECs would lead to a significant expansion of output where there are significant current price differentials between the EU and the CEECs. This would have negative implications for the EU budget and overall GATT commitments would be very strained.

The long-term projections presented by the European Commission in its "Strategy Report on Enlargement to the East" concludes that under current policy, the enlargement would add significantly to the EU budget (10-15 billion extra ECUs per year compared with a projected CAP cost of 42 billion ECU for the EU-15 in 2000). Other analysts have estimated the extra budgetary cost to be between 5 and 42 billion ECUs, depending on the assumptions made.

These pressures on the CAP and policy statements by the Commission provide strong evidence that the CAP in its present form is not the CAP that CEEC farmers will face when they join the EU.

A4.3 Shaping the future CAP

The above analysis suggests that further CAP reform is highly likely. However the next question is how will the CAP look in several years time ?. Key points to consider include the following issues.

A4.3.1 World market supply and demand developments

It is likely that world prices for grain will gradually retreat from the peaks reached in 1995/96 and the present relatively high (but lower than in 1995/96) levels. However, because the future world market will be less distorted than today's (and yesterday's) and demand for cereals, oilseeds and meat in South East Asia/China is predicted to increase, it is likely that real long-run prices will be higher than those existing in the late 1980s and early 1990s, but below the recent highs.

A4.3.2 EU income growth and the future size of the budget

The freedom of the EU to reform the CAP, or to expand the role of the structural funds, will depend partly on the available budget.

Future growth of the EU budget will depend upon two factors: income growth in the EU and the willingness of member states to contribute a higher proportion of their own revenue to the EU. Under the current guidelines (if continued) there was probably significant scope for structural programmes of the appropriate orientation and effectiveness to be financed by the EU. However, as indicated above, current concerns about budgets, meeting Maastricht EMU criteria, capping future German contributions and EU unemployment suggest that the future size of the EU budget may be reduced or re-focused away from agriculture. The freedom of the EU to reform the CAP, or to expand the role of the structural funds, will depend partly on the available budget.

A4.3.3 Two main aspects to how the CAP will probably look

There are two main aspects governing how a future CAP would probably look. These are elaborated below.

a) Reform will be extended to the sectors which were not affected by the 1992 reforms. These sectors are wine, fruit and vegetables, sugar and milk and dairy products:

- *fruit and vegetables:* agreed in 1996 for implementation from 1997/98, these will involve a reduction in withdrawal (intervention) prices by between 15 and 30 per cent (depending on the fruit), and that the amounts of fruit purchased via withdrawal will be reduced. In addition, the cost of intervention should be shared between the EU and the producer groups that wish to withdraw products from the market. The 'compensation' that is being offered for this reduced support is extra EU funding of producer

organisations to carry out research, product development, promotion, market development and improvement of production and storage facilities;

- *wine*: reforms have been proposed but are subject to political deadlock. The current large EU structural surplus (25 per cent of production) cannot continue without sustained high levels of domestic market intervention and subsidies on wine for export. The proposed reforms will greatly reduce intervention buying and introduce national wine production quotas at levels approximately 18 per cent below current production levels. Despite the opposition to the proposals, the current surplus is so high that it is quite likely that production or area quotas will be introduced;
- *sugar*: will be very resistant to reform. The reason for this is the close link between the farmer and the processor both of whom have a vested interest in strongly resisting any changes to the sugar regime. Major change will therefore be some time coming and only a small reduction in quota is likely to comply with GATT (possibly 10%-15%) and prices probably will not have fallen much more than in nominal terms (10-15%);
- *milk*: opinion on the future of this sector is divided, between the those who see the retention of milk production quotas as essential (with reductions in the quota in order to meet GATT constraints) and those who see the quotas as a major impediment to the development of an competitive EU industry (as well as being a major problem for the CEECs on accession).

Of key importance will be how effectively any future milk regime can be administered in the acceding countries. The EU has already experienced considerable difficulties in Italy with the existing quota system. Could the EU system be successfully transplanted to, for example, Poland with similar production levels and its even smaller farms? If the quota system is retained (recent and current pronouncements from within the EU Commission and most EU policy observers suggest that quotas will be retained), it is likely that quotas will become more readily tradable within member states (possibly limited cross border trade). There would also be some real price cuts (perhaps 30 per cent), with the provision of transitional production-neutral direct payments as compensation for the price cuts.

b) Further reforms in the already 'reformed' sectors.

These will probably occur under a minimalist reform programme to avoid problems associated with GATT commitments and the costs and difficulties of transferring the future CAP to the countries of central and eastern Europe (as discussed earlier). A median estimate of this extra cost is 12 billion ecu (EU Madrid paper). While the Commission argues in this paper that these costs will not be incurred because the direct payments are compensation to EU farmers for reductions in prices and therefore would not be made available to the CEECs, this is disputed by some observers, especially those in the CEECs. Their argument is based on the payments not being compensation payments for reductions in either market prices or support prices in national currencies as evidenced by the cereals example - all EU cereal farmers have continued to receive 'compensation' while their market prices have soared. Also, farmers in countries with depreciating currencies did not necessarily suffer any support price cuts in the first

instance. Whilst it is possible that a case under Community law could be made by CEEC farmers for access to these payments, if applicable at time of accession, this argument is essentially a 'red herring'. It is highly likely that the basis of any direct payments will be changed well before the CEECs enter the Union rendering this argument null and void.

The simplest change would be to decouple all direct payments from production. Hence arable payments would not be dependent upon the area sown, and sheep and beef payments would be independent of the number of animals kept. While the link with production is likely to be broken, links with other criteria are likely to be reinforced. Direct payments are therefore more likely to be paid under various programmes to achieve social, environmental and rural development objectives. This indicates a decline in importance of traditional CAP expenditure and an increase in the importance of structural and cohesion funds.

The second change will be the probable elimination of set-aside. With the US having got rid of most of its set-aside in order to take advantage of freer world markets, it is hardly conceivable that the EU will keep possibly 6 million hectares out of production at both great budgetary and economic cost while the US expands production.

The problem is that set-aside may be necessary if the EU maintains its prices above world prices because its subsidised exports will be too large to meet GATT commitments. Therefore, either the EU will have to reduce its cereal prices to world levels, or, some form of cereal quota might be introduced, with anything produced above this quota receiving the world price. In view of the Commission's stated view on the need for reforming the CAP, it should be reasonable to assume that EU support prices will be set at prevailing world price levels although this issue is still very much an open question.

The above analysis is not new - the suggested directions are largely based on the Commission's Strategy Report issued by DGVI in November 1995 which suggested that policy would be moving to:

- prices closer to world market levels;
- abolition of supply control measures (set-aside, production quotas, subsidy quotas) for as many products as possible;
- direct payments decoupled from production;
- payments for environmental 'goods' on a national basis with or without EU co-financing.

An important part of future CAP policy will therefore be the development of an integrated rural policy. This is likely to comprise four main elements/functions:

- market stabilisation;
- payments for environmental, cultural and landscape 'goods';
- rural development incentives;
- transitional adjustment assistance.

Within this, market price support is likely to decrease to long run world price levels, with intervention support assuming a market floor/stabilisation role to cover eventualities of significant short term market price decreases. The present agri-environmental and structural policy components of the CAP are likely to become respectively the environmental, cultural and landscape payments and the rural development incentive components. Finally, the compensation payments introduced in the 1992 reforms would be phased out.

The provision of environmental, cultural and landscape payments will probably be operated on a regional basis in order to reflect the diversity of environmental conditions and problems in different parts of the EU and may well incorporate a tier principle as occurs in the UK's ESA scheme. At a base level there would be a requirement for farmers to meet certain minimum conditions (eg, relating to air and water pollution levels, soil management, husbandry practices and animal welfare) for which no support payments would be made. The provision of support would begin beyond this base according to the 'landscape and nature conservation' value of a farming region with support payments provided for compliance with varying degrees of management prescriptions - the more restrictive in nature, the greater the level of payment. In other words the operation of a system of support provision akin to the tiering system used in some ESAs.

The provision of rural development incentives in addition to the environmental, landscape and cultural payments will focus more on social issues and follow the patterns and initiatives set within current structural funds policies (ie, Objectives 1, 5a and 5b, and the LEADER programme) although probably with simplification of the regime. For example, a reduction in the number/category of objective regions and the allocation of one fund per objective rather the current system in which three funds operate within each objective region.

The final component of future policy is likely to be the provision of some transitional adjustment assistance. This is likely to be forward looking rather than the backward looking nature of the 1992 compensation payments (ie, these were based on historic factors). This suggests that these payments will be time limited from the outset, decoupled from production, aim to non-distorting to competition and may have compliance with some environmental management conditions attached. For political reasons the initial payment levels may relate to past levels of support, but with some modification to allow for difficulties in adjustment/transition.

Overall, the picture painted for the future nature of support facing UK agriculture is one in which support systems akin to those operating in ESAs will assume significantly higher priority and importance. To a certain extent this is already recognised amongst many farmers in the ESAs as the results of both the participants and non-participants surveys identified a broad level of awareness amongst farmers in ESA regions that general levels of 'traditional' market type supports will decrease and that environmental compliance linked type support will assume greater importance.

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